

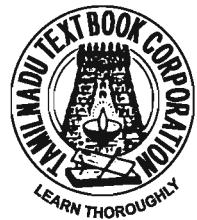
COMPUTER SCIENCE

Higher Secondary - Second Year

Volume 1 : Tools

Government of Tamilnadu

Untouchability is a sin
Untouchability is a crime
Untouchability is inhuman



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FOREWORD

We are in the midst of an information revolution. The driving forces behind this revolution are computer and communication technologies. Individuals and organizations today use computers and computer software tools in managing many of their daily tasks. Computers are making their way into our homes, our schools, our hospitals and almost every facet of our lives. They are changing the way people live and work, the way organizations manage their tasks and resources, the way the governments govern their states and people, and the way many systems behave and operate. The applications of these versatile technologies seem almost limitless.

Application tasks may broadly be classified into the following major categories:

- Data processing and management (commercial use)
- Word Processing (office and educational use)
- Message communication (e-mail)
- Image processing (animation and industrial use)
- Voice recognition (multimedia)
- Numerical computing (scientific use)

This volume presents and discusses software tools that are necessary to carry out some of these tasks in organizations. Intelligent use of these tools would certainly improve the efficiency and effectiveness of organizations.

Many software tools for processing information are available in the open market. In this volume, a popular software package known as StarOffice developed by Sun Microsystems, USA is used to demonstrate the various applications. StarOffice is a collection of tools such as Word Processing, Spreadsheet, Database and Multimedia.

Continued

I strongly believe in the dictum:

I hear, I forget
I see, I remember
I DO, I UNDERSTAND

The emphasis throughout the volume is hands-on experience. More than fifty percent of learning time is provided for practising the tools.

Improvements in computer and communication technologies are continuously under way. Young thinkers like you will shape the world of the future. Without your dreams and hard work, the ideas of today won't develop into the technologies of tomorrow.

"Imagination is more important than knowledge" – **Albert Einstein**

The authors have taken great care in making the material presented comprehensive, lucid and practical with many illustrations. The authors, the reviewers, and the officials of the Directorate of School Education deserve our appreciation and thanks for accomplishing this trying task in record time.

E. BALAGURUSAMY
Chairman
Syllabus Review Committee

CONTENTS

CHAPTER 1 AN INTRODUCTION TO STAROFFICE WRITER	1
1.1 An Introduction to StarOffice	1
1.2 Creating a New Document using StarOffice Writer	2
1.3 Entering Text in the Document	3
1.4 Saving, Closing and Opening Documents	4
1.5 Moving Around the Document	7
1.6 Scrolling the Document	8
1.7 Correcting Mistakes	9
1.8 Inserting Text	10
1.9 Selecting Text	10
1.10 Moving the Text	12
1.11 Copying the Text	13
1.12 Finding and Replacing the Text	13
Summary	15
Exercises	16
CHAPTER 2 TEXT FORMATTING	17
2.1 Formatting Options	17
2.2 Paragraph Alignment	21
2.3 Indenting Text	23
2.4 Modifying Line Spacing	26
2.5 Creating Bullets and Numbered List	27
2.6 Formatting Using Styles	30
2.7 StarOffice Help	31
Summary	33
Exercises	34

CHAPTER 3 CORRECTING SPELLING MISTAKES	36
3.1 Checking Spelling while Typing	36
3.2 Checking the Spelling after the Document is Typed	37
3.3 AutoCorrect Option	39
3.4 Creating Autocorrect Entry	40
Summary	41
Exercises	42
CHAPTER 4 WORKING WITH TABLES	43
4.1 Creating a Simple Table	43
4.2 Entering Data in the Table	44
4.3 Adding or Deleting Rows and Columns	44
4.4 Changing the Row/Column Width	46
4.5 Table Formatting Toolbar	47
Summary	49
Exercises	50
CHAPTER 5 PAGE FORMATTING	51
5.1 Changing the Margin	51
5.2 Changing Page Orientation	53
5.3 Creating a Header and Footer	53
Summary	57
Exercises	57
CHAPTER 6 SPREADSHEET	59
6.1 Introduction	59
6.2 Working with StarOffice Calc	63
6.3 Editing the Data in the Worksheet	69
6.4 Creating Formulae	70
6.5 Fill Command	72

6.6	Cell Referencing	76
6.7	Using Functions	77
6.8	Date Arithmetic	80
6.9	Formatting the Worksheet	81
6.10	Changing Column Width and Row Height	84
6.11	Inserting Cells, Rows and Columns	86
6.12	Deleting Cells, Rows and Columns	88
6.13	Inserting Pictures and Special Characters	90
6.14	Drawing in a Spreadsheet	91
6.15	Inserting Objects	92
6.16	Working with Charts	94
6.17	Working with Multiple Sheets	97
6.18	Printing Worksheets	99
6.19	Database Function in StarOffice Calc	100
	Summary	101
	Exercises	102
CHAPTER 7 DATABASE		104
7.1	Introduction	104
7.2	Data and Information	104
7.3	Data Processing	106
7.4	Database	110
7.5	Basic Concepts of Database Management Systems (DBMS)	116
7.6	Working with StarOffice Base	117
7.7	Integrating with Office Automation Applications	147
	Summary	157
	Exercises	159

CHAPTER 8 INTRODUCTION TO MULTIMEDIA	161
8.1 What is Multimedia?	161
8.2 Multimedia Applications	161
8.3 Multimedia Elements - Sound, Animation, and Video	164
8.4 Using Multimedia Elements in Content Summary Exercises	172 174 174
CHAPTER 9 PRESENTATION	175
9.1 Introduction	175
9.2 A Basic Presentation	175
9.3 Managing a Presentation	185
9.4 Customizing a Presentation	202
9.5 Printing Presentations Summary Exercises	209 219 221
APPENDIX FURTHER READING	223

CHAPTER 1

AN INTRODUCTION TO STAROFFICE WRITER

1.1 An Introduction to StarOffice

StarOffice is an application that is designed to work on different operating systems. StarOffice is a full-featured office productivity suite with powerful standalone applications that can also open, edit, and save Microsoft Office documents. Whether you are writing a letter, performing complex calculations, creating a presentation, or creating a database, you'll find that StarOffice meets your needs.

StarOffice consists of several applications. These applications are grouped together into an integrated environment in which one can do several things. Listed below are some of the StarOffice functions,

Create text document using StarOffice Writer

Create spreadsheets using StarOffice Calc

Create presentations using StarOffice Impress

Draw using StarOffice Draw

Create a database using StarOffice Base

To Start StarOffice,

1. On the taskbar, click the **Start** button.
2. Choose **All Programs → StarOffice 8** folder.
3. Click the StarOffice program that you want to start.

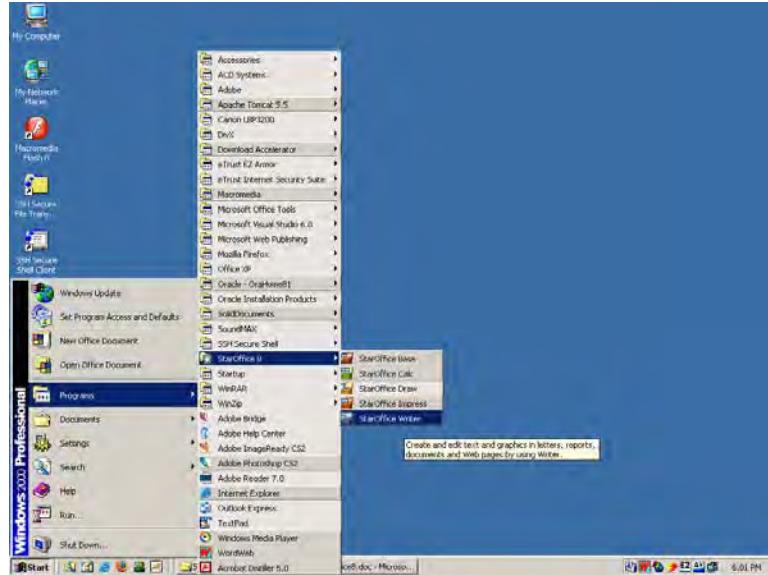


Fig 1.1 Selecting StarOffice Writer from Start Menu

StarOffice Writer is a word processor. The term word processing refers to the activity carried out using a computer and suitable software to create, view, edit, manipulate, transmit, store, retrieve and print documents. A document may contain text, tables, graphs, charts, equations, pictures and drawings.

Some of the other commercially available word processing packages are MS Word, Lotus AmiPro, Word Perfect, Word Star and Word Pro.

1.2 Creating a New Document Using StarOffice Writer

The StarOffice Writer is opened as shown in figure 1.1.

The **File → New → Text Document** command can then be used to open a new document.

A blank document appears as shown in figure 1.2

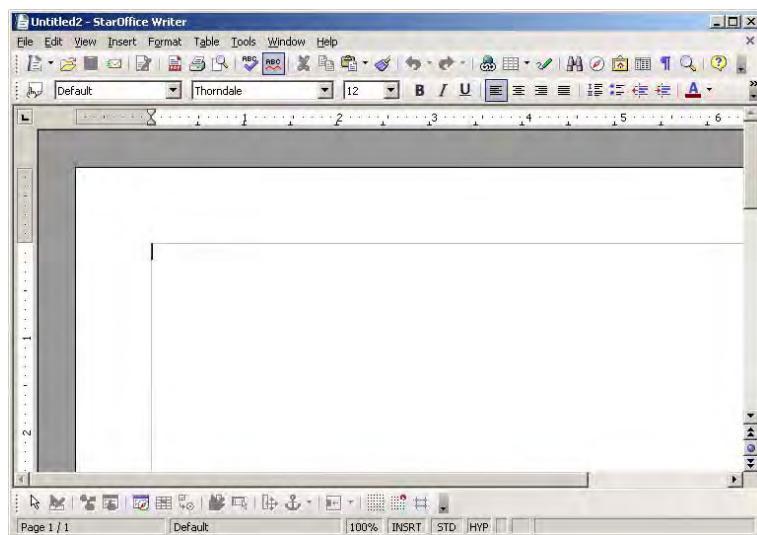


Fig 1.2 StarOffice Writer window

Most of the elements of this window are similar to the Windows applications environment studied earlier.

1.3 Entering Text in the Document

Once a new document is opened, the text of the document can be typed in big blank area of the screen. To create a document the user can start typing straight away. As the characters are typed they appear on the screen and the flashing vertical bar called the insertion point, moves to the right. This insertion point always indicates where the new text will appear. When the text being typed reaches the end of the line, StarOffice Writer will automatically wrap the text to the next line. The **Enter** key must not be pressed at the end of the each line. The **Enter** key should be pressed only at the end of a paragraph or when a blank line is to be inserted. When a page is filled up, StarOffice Writer automatically creates a new page.

1.4 Saving, Closing and Opening Documents

1.4.1 Saving a Document

The first time the document is saved, StarOffice Writer prompts for a name. Naming the file enables the user to find and open that file again. One can select the drive and folder where the file will be stored.

To save a document for a first time following steps are used:

1. **File → Save** command is selected or  icon is clicked. A Save As dialog box as shown in the figure 1.3 appears on the screen.
2. To select a drive, up one level icon  is clicked, then a list of drives will be displayed. On the list of drives, a double click is made on the required drive. Now a list of folders available on that drive is displayed.
3. A double click is made on the required folder and the file name is given in the **File name** list box.
4. Choose the required document type from the **Save as type** list box and click on the Save button to save the document in that type. The document is now saved and a file name appears in the title bar.

Once a file is saved under a name, to save it again the name need not be entered again. The file can be saved simply by selecting the **File → Save** command or by clicking the Save button. **Ctrl + S** is the keyboard shortcut for saving the document.

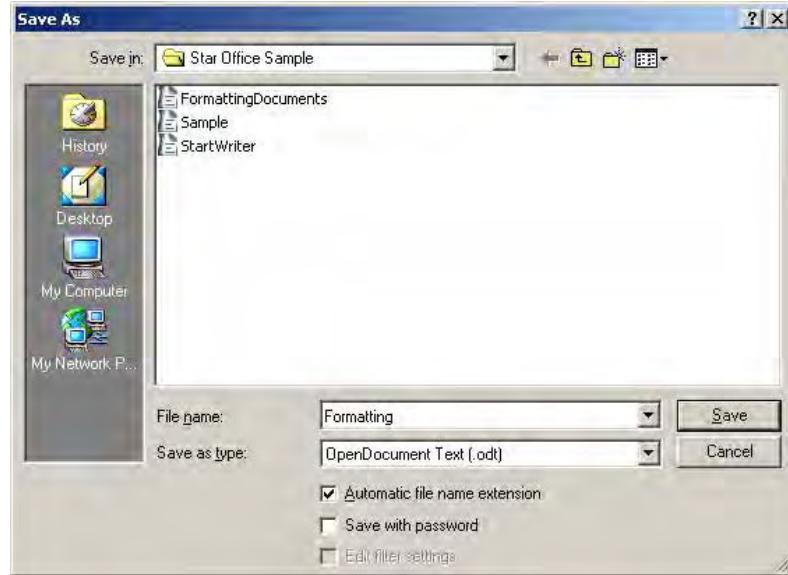


Fig 1.3 Save As dialog box

1.4.2 Closing a Document

After a document is saved, it is not closed. It remains open so that the user can continue working. When the work is finished, the user should save and close the document. After saving, the document can be closed using the **File → Close** command.

1.4.3 Opening a Document

To reopen a document that has been saved and closed, the **File → Open** command can be used. A dialog box, very similar to the Save As dialog box, appears, as shown in figure 1.4.

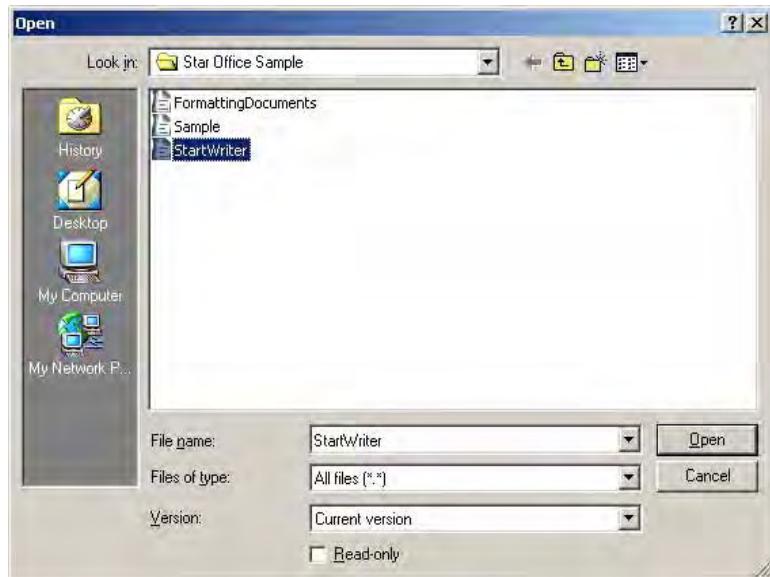


Fig 1.4 The Open dialog box

The name of the file to be opened can be chosen from the list, which is displayed.

An alternate method of opening files is to click on the **Open** File icon.

1.4.4 Working with Multiple Documents

While working with StarOffice Writer, it is possible to have several documents open at the same time. This can be done by opening the documents one after the other. Once the documents are open, you can switch between them in the following two ways.

1. Click on the **Window** menu option and select the file from the list of documents displayed.
2. Click on the document button visible on the taskbar.

These documents can be closed one by one by using the **File → Close** command.

1.5 Moving Around the Document

To move the insertion point to anywhere in the document either the mouse or the keyboard can be used. The thick horizontal line in the page area is called the end-of-document marker. The insertion point cannot be beyond this line.

To move the insertion point with the mouse, the mouse pointer is moved to the required spot and the mouse button is clicked. The insertion point jumps to that spot. It is to note that mouse pointer is different from the insertion point.

To move the insertion point with the keyboard the arrow keys and other key combination can be used. Table 1.1 lists the common movement keys. If the key combination is joined with a plus sign, the first key must be pressed and held down and the second key is to be pressed.

Table 1.1 Keyboard movement keys

To move	Press
One character to the left	LEFT ARROW
One character to the right	RIGHT ARROW
One word to the left	CTRL+LEFT ARROW
One word to the right	CTRL+RIGHT ARROW
One cell to the left (in a table)	SHIFT+TAB
One cell to the right (in a table)	TAB
Up one line	UP ARROW
Down one line	DOWN ARROW
To the end of a line	END
To the beginning of a line	HOME
Up one screen (scrolling)	PAGE UP
Down one screen (scrolling)	PAGE DOWN
To the end of a document	CTRL+END
To the beginning of a document	CTRL+HOME

Learn by solving

1. Enter the following text.

According to legend, the ancient Olympic Games were founded by Heracles. Yet the first Olympic Games for which we still have written records were held in 776 BCE (though it is generally believed that the Games had been going on for many years already). At this Olympic Games, a naked runner, Coroebus (a cook from Elis), won the sole event at the Olympics, the stade - a run of approximately 192 meters (210 yards). This made Coroebus the very first Olympic champion in history.

The ancient Olympic Games grew and continued to be played every four years for nearly 1200 years.

2. Save the text as Exercise 1 and close the file.
3. Open the document Exercise 1 and add the following paragraph to it. Save the file and close the file.

The very first modern Olympic Games opened in the first week of April 1896. Since the Greek government had been unable to fund construction of a stadium, a wealthy Greek architect, Georgios Averoff, donated one million drachmas (over \$100,000) to restore the Panathenaic Stadium, originally built in 330 BCE, with white marble for the Olympic Games.

1.6 Scrolling The Document

If the document is long the text can be scrolled through without moving the insertion point. This can be easily done using the mouse.

The scroll arrows and the scroll bar shown in figure 1.2 can be used for this purpose. There are two sets of scroll arrows; one for up and down movement and the other for the left and right movement of the document.

The scrolling procedure is as follows:

1. To scroll left and right the left and right arrow respectively should be clicked.
2. To scroll up and down the up and down arrow respectively should be clicked.
3. To scroll a relative distance in the document the scroll box should be drawn up or down. If there are several pages in the document the user can know the current page number by looking at the pop-up page number that appears next to the scroll bar.

Scrolling a document does not move the insertion point. The mouse click should be used to get the I-beam at the required place.

Learn by solving

Open the previously saved document Exercise 1 and see if all the keyboard option works to move around the document. Also try using the scroll bars and scroll arrow keys.

1.7 Correcting Mistakes

All the characters, which are typed, appear on the screen. If a mistake is identified it can be corrected either using the **Backspace** key or the **Delete** key. **Backspace** key deletes the characters to the left of the insertion point. **Delete** key deletes the characters to the right of the insertion point.

1.8 Inserting Text

After the entire document is typed if the user wants to add text in the beginning, middle or end of the document it can be easily done.

To add text the insertion point is placed where the new text is to start and the text is typed. The new text will be inserted and the existing text would move to the right.

The user is in the type-over mode, if the text existing to the right of insertion point disappears, while typing a new text. The user can toggle between type-over mode and the insert mode by using the Insert key. The status bar gives the information about the current mode (Insert or Type-over-mode).

As the corrections are being carried out periodically the user should save the document using the **File → Save** command.

1.9 Selecting Text

Even though the document is built up by typing one character at a time, while editing and formatting one always work with words, lines, paragraphs and sometimes with the whole document. For this purpose one should learn how to select the text. Once the text is selected, change can be made to that text. The text can be moved, copied and made as bold. The font and colour of the text can also be changed. For selecting text the mouse or the keyboard can be used.

1.9.1 Selecting Text with Mouse

Following steps are to be followed:

1. Insertion point is moved to the start of the text to be selected.
2. The left mouse button should be clicked, held down and dragged across the text to be selected.
3. When the intended text is selected, the mouse button should be released. The text appears as shown in figure 1.5.

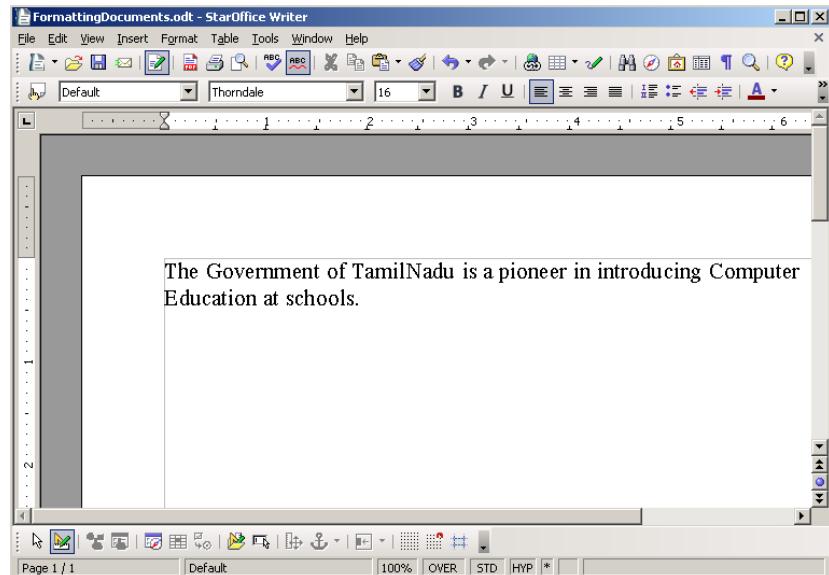


Fig 1.5 Selecting the Text

To unselect the wrongly selected text a click should be made outside the selected text.

1.9.2 Selecting Text with Keyboard

Following are the steps to be followed:

1. Insertion point is moved to the start of the text to be selected.
2. The **Shift** key is pressed down and the movement keys are used to highlight the required text.
3. When the **Shift** key is released, the text is selected.

1.9.3 Selection Shortcuts

The following shortcuts can also be used for selection.

Action to be performed	To select what
Double click on a word	To select a word
Click once next to the line	To select the particular line
Press Ctrl + A	To select the entire Document

1.10 Moving the Text

The selected text can be easily cut and pasted in the required location. Following steps are to be followed.

1. The text to be moved to a new location is selected.
2. **Edit → Cut** is selected or  in the tool bar is selected to cut the selected text.
3. Insertion point is moved to the place where the text is to be pasted.
4. **Edit → Paste** is selected or  in the tool bar is selected to paste the text in the new location. The text can also be pasted in this way to another or another type of document.

The following keyboard shortcuts can be used to move text.

Ctrl + X → to Cut
Ctrl + V → to Paste

1.11 Copying the Text

1. The text to be copied is selected.
2. **Edit → Copy** is selected or  is clicked.
3. The insertion point is selected where the copy of the text should appear and is  clicked.

The following keyboard shortcuts can also be used for copy and paste:

Ctrl + C → to Copy
Ctrl + V → to Paste

1.12 Finding and Replacing Text

You can use the Find & Replace feature in StarOffice Writer to search for and to replace words in a text document.

To Find and Replace Text

1. Choose **Edit → Find & Replace**.
The Find & Replace dialog box appears as shown in the Fig 1.6.
2. In the **Search for** box, type the text that you want to find in your document.

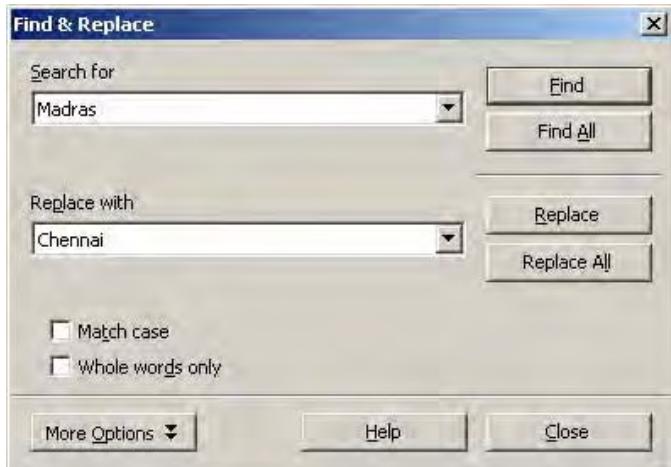


Fig 1.6 Find and Replace Dialog Box

3. In the **Replace with** box, enter the replacement word or phrase.
4. Click **Find** to start the search.
5. When Writer finds the first instance of the word or phrase, do one of the following:
 - To replace the found instance of the text with what you entered in the Replace with box, click **Replace**.
 - To replace all instances of the text with what you entered in the Replace with box, click **Replace All**.
 - To skip the found text and to continue the search, click **Find** again.
6. Click **Close** when you have finished the search.

Note: You can also select the word or phrase that you want to search for in the text document, and then choose Edit - Find & Replace. The text that you selected is automatically entered in the Search for box.

Learn by solving

1. In the StarOffice Writer document Exercise 1 try to add additional text both at the beginning, middle and end of the document.
2. Make use of the Delete key Backspace key for making correction.
3. Make use of the Insert key to insert a new word and see how the Insert mode changes in the Status bar.
4. Select a particular portion of the document using selection shortcuts, cursor and with the keyboard.
5. Perform the Copy, Cut and Paste operations using the icons as well as the keyboard shortcuts.
6. Make use of the Find and Replace a given word and see how it works.

Summary

- Entering a new text or modifying the existing text in a document is known as text editing.
- The user can move to the various portions of the document using the keyboard shortcuts or the mouse.
- The required word or portion of the text can also be selected using the keyboard shortcuts or using the mouse.
- Copy, Cut, Paste, Find and Replace are some of the commonly used editing functions.

Exercises

I. Fill in the blanks.

1. The thick horizontal line in the page area is called _____, _____
2. _____ key deletes the characters to the right of the insertion point.
3. _____, _____ option is selected to Cut the selected text.
4. _____ and _____ are the two combo boxes available in the Find and Replace dialog box.
5. _____ key combination is used to move to the end of the document.

II. State true or false

1. Enter key must be pressed at the end of each line.
2. To select the entire document pressing Ctrl + A is the hot key combination to be used.
3. For searching a given word one need not have to type the required word in the Find and Replace dialog box.
4. To paste the selected word in the desired place insert key is used.
5. Ctrl + X is the keyboard shortcut for copying the selected text.

III. Answer the following

1. What is meant by text editing?
2. How would you select the required portion of the text in a document?
3. How would you switch over from Insert mode to Type-over mode?
4. What are the steps to be followed for searching a given word?
5. Give the steps involved for replacing a given text.

CHAPTER 2

TEXT FORMATTING

A text without any special formatting can have a monotonous appearance. To outline text, to highlight individual words, quotations, or references, or to separate certain parts of the text, various types of formatting can be applied.

2.1 Formatting Options

StarOffice Writer offers a number of choices for formatting such as bold or italics, and defining the font, type, and font size. Bold, italic or underlined are the most common types of text formatting.

Almost all the formatting options are available under Format menu. StarOffice Writer also conveniently provides buttons for the most commonly used options. But before these options can be used, the text on which they are to be used has to be selected. Once the desired portion of the text is selected then depending on the need any one of the following buttons are clicked:

- Click **B** to make text **Bold**.
- Click **I** to make text **Italic**.
- Click **U** to make text **Underlined**.

The same can also be achieved by clicking on **Format → Character** and then selecting an option from the **Typeface** list box.

If a particular word or portion of the text is already in bold or italic or underlined style those text properties can be removed by clicking on the respective icons, again.

For example, in order to change the word **Computer** from bold to normal appearance that word is selected and the icon  is pressed once. This will remove the bold property from that text.

Alternatively **Ctrl + B**, **Ctrl + I** and **Ctrl + U** keys can be used to make the selected text bold, italic and underlined respectively.

2.1.1 Changing the Fonts

A font is a set of characters and numbers in a certain style. Each font looks different from other fonts. Some fonts, like the **Times New Roman**, look professional and are suited for business documents. Some fonts, like **FAJITA**, are decorative. Some fonts, like Symbol and Wingdings, are actually sets of symbols. Such a font can be used to insert special characters in the document.

Part of word processing skill is choosing an appropriate font for the document. Text can be selected and any of the fonts available in the system can be used. Font packages can also purchased to add other font choices to the system.

Method

Click the down arrow in the Fonts Combo box of font tab in Character dialog box.

Use **Format → Character** to open the Character dialog box.

From the list of available fonts, click the required one.



The text changes to the selected font.

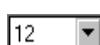
2.1.2 Font Size

The size of the text is also important. The same size of the text cannot be used for a legal document, and an advertisement material. Similarly the size of the letters used in the main text and footer cannot be the same. The size of a font is measured in points, and there are 72 points to an inch. The larger the point size, the larger the type.

Method

Click the down arrow in the Size combo box of Fonts tab in Character dialog box.

Use **Format → Character** to open the Character dialog box.

The text changes to the selected font size. 

2.1.3 Changing the Font Colour

A different colour for selected text can be used. Colour printers are becoming more and more popular. With the help of a colour printer, some splash can be added to the documents by changing the colour of text. In the absence of a colour printer, the document will be displayed on screen in colour. But these changes will be printed as shades of gray on a black-and-white printer.

Method

To use a different text color, select the text and click the arrow in the **Font Colour** icon. A colour palette is displayed from which the required colour can be selected. 

Alternatively, select the text and click on the Font colour icon, to apply the current colour of the **Font Colour**.

2.1.4 Highlighting the Text

Highlighting can be used to call attention to key ideas or pointers in a document. When reading something important in a book, a magazine, a report, or any document, the reader takes a yellow highlighter pen and drags across it. These highlighted sections are used to review or find the key points in the document. The same thing can be done in the StarOffice Writer document. The colour to be used for highlighting can also be selected.

Method

To highlight the selected text, the **Highlighting** icon  is selected, and then the needed colour is clicked. StarOffice Writer now applies the highlighting. When the mouse button is clicked on the above icon and held down a colour palette is displayed from which the required colour can be selected. To remove the highlighting, select the text and select the No Fill from the colour palette.

As mentioned earlier, the **Character** option under the **Format** menu can also be used to achieve all this. Clicking on **Format → Character** displays the Character dialog box as shown in the following figure. This method is used to make several changes at once or to preview the changes before applying them.

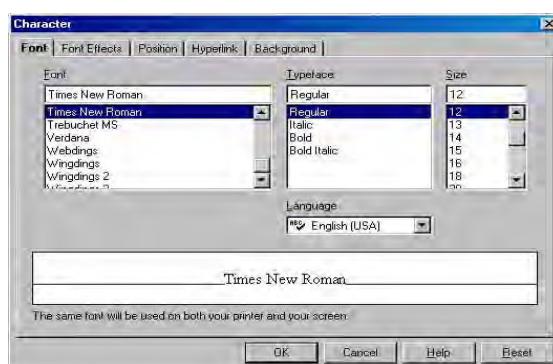


Fig 2.1 Character Dialog Box

Learn by solving

Select a particular portion in the document Exercise 1 and perform the following tasks:

- Change the text properties (normal to bold, then to italic and underlined). Finally bring it to normal type.
 - Change the font, font size, colour and observe the changes.
-

2.2 Paragraph Alignment

In addition to formatting individual chunks of text, one can also format the paragraphs. One of the most common changes is to change the alignment of a paragraph.

A paragraph is any text followed by a hard return. (A hard return is inserted every time when **Enter** is pressed. Soft returns are inserted as line breaks by StarOffice Writer and are adjusted when text is added or deleted.) A single line, for instance, can be a paragraph. One can apply the paragraph formatting options to a single paragraph or to several paragraphs. Each paragraph, for example, can give different tab settings.

Also, each time **Enter** is pressed, the paragraph options for that paragraph are carried down to the next paragraph. And if a paragraph marker is deleted the paragraph takes on the formatting of the following paragraph. If one types a line, center it, and press **Enter**, the next line is centered as well. If a double-spaced paragraph is followed by a single-spaced paragraph, delete the paragraph mark at the end of the first paragraph, the paragraph will then be single-spaced. This is confusing for beginners who wonder how a paragraph got formatted without anyone making a change. One can think of the paragraph marker as the storehouse for all formatting options for that paragraph.

When typing in StarOffice Writer, all text is left aligned, and the right margin is ragged or uneven. For most text, this alignment works great. For other paragraphs, one may want to make a change. For instance, one can center the document title or right align text like a newspaper banner. The text in the paragraphs can be justified to keep both margins even.

Four types of alignment can be selected, and the best way to make a change is to use the Formatting toolbar. Following steps are used:

1. To change the alignment of one paragraph, first click within that paragraph. To change the alignment of several paragraphs, select the ones needing change.
2. Do one of the following

Click  to left align text.

Click  to right align text

Click  to justify text.

Click  to center text.

Figure 2.2 shows an example of each type of alignment.

To undo the change, click the Undo button or select the Edit → Undo command. If a different alignment is required later, select the paragraph (s) and then click another alignment button.

To undo the change, click the Undo button or select the Edit → Undo command. If a different alignment is required later, select the paragraph (s) and then click another alignment button.

To undo the change, click the Undo button or select the Edit → Undo command. If a different alignment is required later, select the paragraph (s) and then click another alignment button.

To undo the change, click the Undo button or select the Edit → Undo command. If a different alignment is required later, select the paragraph (s) and then click another alignment button.

The following keyboard shortcuts can also be used to change the alignment.

To make text...	Press...
Centered	Ctrl+E
Left-aligned	Ctrl+L
Right-aligned	Ctrl+R
Justified	Ctrl+J

Learn by solving

Open the document Exercise 1. Carry out the following instructions and observe the changes.

1. Add a suitable heading at the top and center it.
 2. Select the second paragraph and use justify it.
 3. Select the third paragraph and right align it.
 4. Add your name, class and school's name at the bottom and right align it.
 5. Add the date at the bottom in the line below the title and right align it.
-

2.3 Indenting Text

Alignment changes are most appropriate for headings or other special paragraphs in the document. But to make a long document easy and inviting to read, some of the paragraph-formatting features described in this section, including indents can be used. For instance, indent the first line of each paragraph. This visual clue helps the reader to see how the document is divided into paragraphs. The paragraphs also indented , such as quotations that are set apart from the main document text. As another option, one may want to use a special kind of indent, called a hanging indent, for numbered lists.

The amount of indent can be varied to the requirement, and one can use either the Formatting toolbar or the Paragraph dialog box to make a change, as covered in this section.

2.3.1 Indenting Text with the Toolbar

If a left indent is required - useful for setting off a paragraph from the main body text - the toolbar can be used to set the indent. Click the **Increase Indent**  icon; the paragraph is indented 1/2 inch from the left margin. The button again can be clicked to increase the indent. Each time the button is clicked, the paragraph is indented another 1/2 inch.

Figure 2.3 displays a paragraph that has been indented using the Increase indent button.

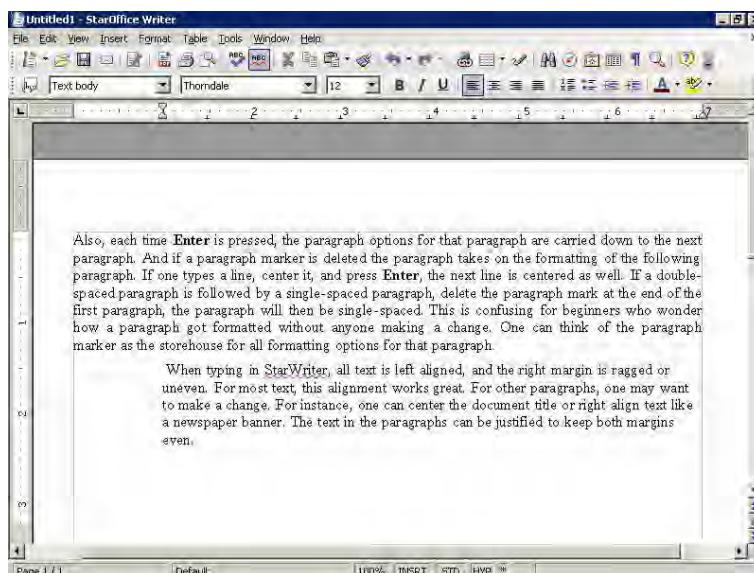


Fig 2.3 Paragraph indented using the Increase Indent icon

If the indent is too much or if one wants to undo the indent, the **Decrease Indent**  icon is clicked to decrease of undo the indents.

2.3.2 Indenting Text with the Paragraph Dialog Box

The Increase Indent and Decrease Indent icons are useful if it is needed to indent text from the left. If one wants to indent from the left and right or if one wants to create a special kind of indent, a different method is used. The Paragraph dialog box must be used.

Following steps are used to indent text using the Paragraph dialog box:

1. Move the insertion point to the beginning of the paragraph to be indented. To indent several paragraphs, select those paragraphs.
2. Select **Format → Paragraph** command.
3. Click the **Indents & Spacing** tab in the Paragraph dialog box as shown in figure 2.4.
4. Do any of the following.
 - i. To indent from the left, type the amount to be indented in the **Before text** spin box or use the spin arrows to select a value.
 - ii. To indent text from the right, type the amount or use the **After text** spin arrows to enter the amount in the spin box.
 - iii. Click the **OK** button.

The **First line** option can be used to indent the line of the paragraph. Using the spin arrows, if a positive value is specified, the first line will be indented. A negative value will result in a hanging indent; that is, the first line will hang outside the paragraph.

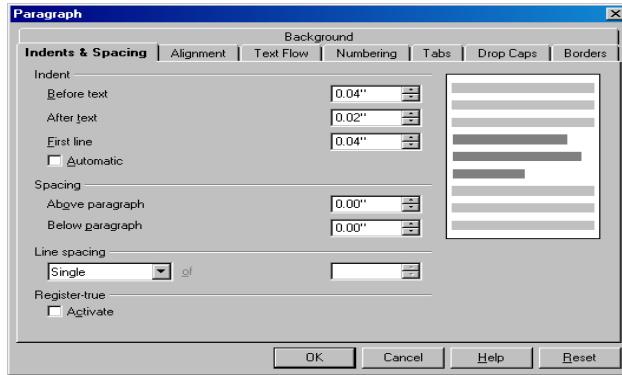


Fig 2.4 Indents and Spacing Dialog Box

Learn by solving

Reproduce the following paragraphs as such using both, the toolbar icons and the menu options.

A table is a collection of rows that are related to each other by a common idea, such as customer table, which contains all the information about the customers.

Structured Query Language is the special language used to access the data contained in a database.

2.4 Modifying Line Spacing

By default, StarOffice Writer single-spaces the text in the document. This spacing works well for short documents such as letters and memos, but in longer documents, such as a manuscript, one may want to use a different spacing values. Single line, 1.5 lines, Double, Proportional, At least, Leading and Fixed are the line spacing options available as shown in figure 2.5.

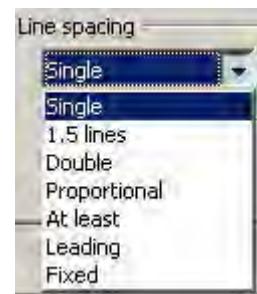


Fig 2.5 Line spacing Options

To change the line spacing, following steps are used:

1. Select the paragraphs(s) that needs to be changed.
2. Select **Format → Paragraph**.
3. If necessary, click the **Indents & Spacing** tab. The Indents & Spacing tab dialog box as shown in figure 2.4.
4. Click on the **Line spacing** drop-down list box, and select the required line spacing option.
5. Click the **OK** button.

Learn by solving

Open the document Exercise 1. Change the line spacing into 1.5 line spacing and double line spacing and observe the change.

2.5 Creating Bullets and Numbered List

When the document presents a matter using text in the form of long paragraphs the reader may not be able to quickly notice the important points or messages. For this purpose bullets and numbers are used to list the important points and messages.

One way to set off a list of points or topics in a document is to create a bulleted list. A bullet precedes each item in the list, and the text is indented. One can also create a numbered list. Numbered lists work well for directions or other points one want to present in sequence. StarOffice Writer automatically numbers all the items in a list, and the text is indented.

2.5.1 Creating a Bulleted List

The fastest way to create a bulleted list is to be use the Bullets button on the Formatting toolbar. For this purpose the following steps are used:

1. Select the text that to which bullets are to be added. The StarOffice Writer will add bullets to each paragraph within the selection, and not to each line. StarOffice Writer will add bullets to any blank lines within the selection.
2. Click on the Bullets icon  from the formatting tool bar, StarOffice Writer creates a bulleted list, as shown in figure 2.6.

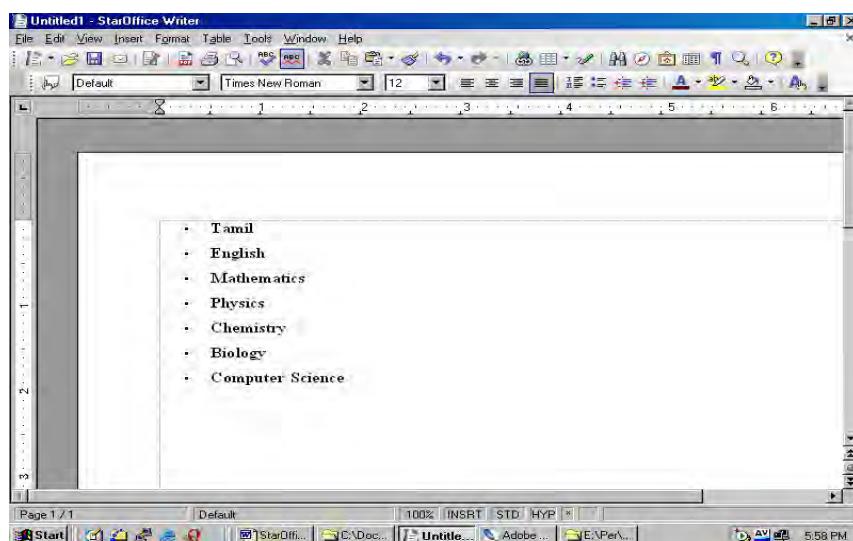


Fig 2.6 Bulleted List

2.5.2 Creating a Numbered List

For items that appear in a specific order, such as a series of steps, one can create a numbered list. StarOffice Writer will add the numbers automatically and also indent the paragraphs so that the text is aligned properly. All one has to do is click the Numbering icon .

Another great thing about a numbered list is that if one adds or deletes an item within the list, StarOffice Writer renames the list.

Following steps are used to create a numbered list.

1. Select the text to be numbered. The StarOffice Writer will number each paragraph. Blank lines within the selection will be numbered.
2. Click  icon to create a numbered list.

2.5.3 Removing the Bullets or Numbers

To remove bullets from a list, the list is selected and the **Bullets** button is clicked again. To remove numbers for a list, select the list and click the **Numbering** button.

2.5.4 Applying Different Styles for Bullets and Numbers

StarOffice Writer provides various styles for the bullets and numbers, which can be selected using **Format → Bullets and Numbering**.

Bullets and Numbering dialog box appears as shown in the figure 2.7a and 2.7b.

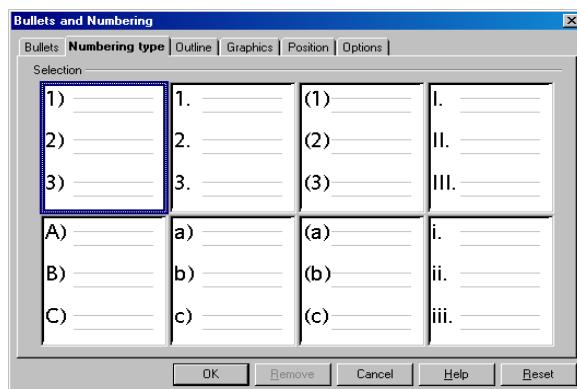


Fig 2.7a Bullets and Numbering dialog box with the Numbering Style tab selected

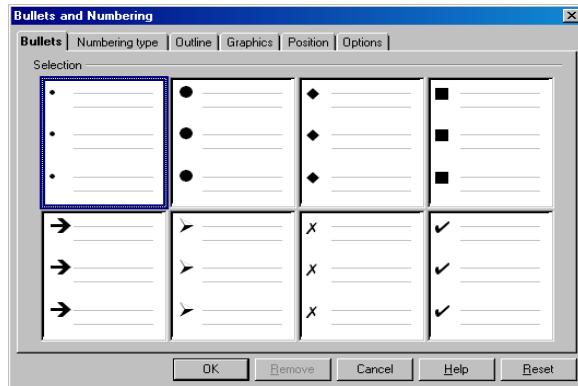


Fig 2.7b Bullets and Numbering dialog box with the Bullets tab selected.

Using the various options available for bullets and numbers the user can select the desired one.

Learn by solving

1. Create a list of your favorite games. Number them using the Numbering tool. Modify the list and add two more game. Change the numbers to bullets.
 2. Type a list of ten of your friends. Format them using the bullets option. Change the bullet and observe the result.
-

2.6 Formatting Using Styles

This is an alternative way of formatting text. A style is a named set of defaults for formatting text. The formatting methods discussed earlier are more appropriate for one time use. If, for example, a word is to be made as bold, just the cursor is positioned in the word and the Bold icon is clicked. This works quickly and intuitively.

But if several documents, each running into several pages are to be formatted in a particular style, then a style is more useful. This type of formatting is also easier when a format has to be used at several points within the text. Styles require more advanced planning. The style needs to be created initially only then the style can be applied to the text, using the Typeface list. The advantages of working with styles can really be appreciated when making extensive formatting changes.

2.7 StarOffice Help

StarOffice 8 provides several help systems that you can use while you work:

- Online help
- Help Agent
- Help Tips
- Extended Help Tips

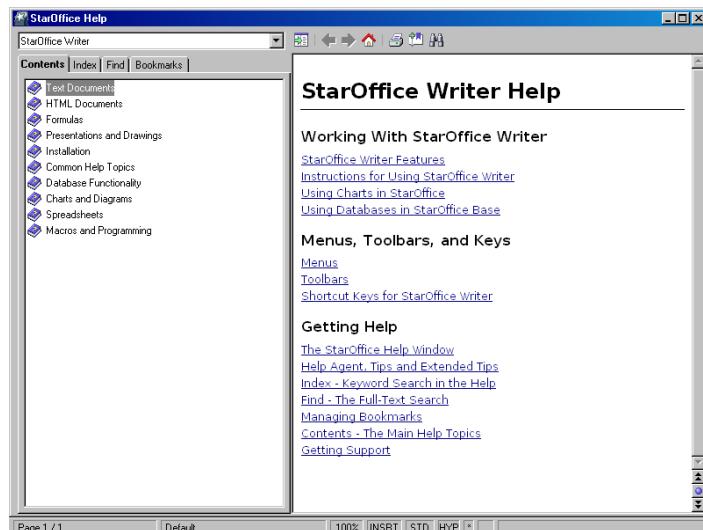


Fig 2.8 StarOffice Writer Help

The Choose help file box in the toolbar area at the top of the Help window can be used to search for help on other StarOffice elements. This is a list box with the list items shown in figure 2.9

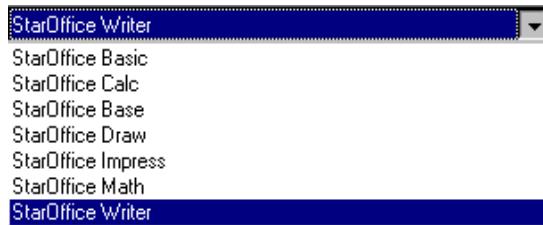


Fig 2.9 Choose Help file list box

You can access the StarOffice Help in several ways:

- Choose the menu command Help - StarOffice Help, or press F1. This command opens the StarOffice help where you can search for a help topic.
- Click the Help button in any dialog to open the help topic for the dialog.
- Click the Help Agent that appears automatically when you perform a complex task. The Help Agent opens the help topic for the task.
- Rest the mouse pointer over a menu command or over any icon to display a Help Tip.
- To view a brief description of what the command or icon does, press Shift+F1 to display an Extended Tip.
- The Help Agent is displayed on the screen in a small window as shown in figure 2.10.



Fig 2.10 The Help Agent Window

The content of Help Agent window changes depending on what is being done in the main window. For example, if some text is highlighted and the Bold icon is clicked the Help Agent displays help about the Bold formatting option as shown in figure 2.11.

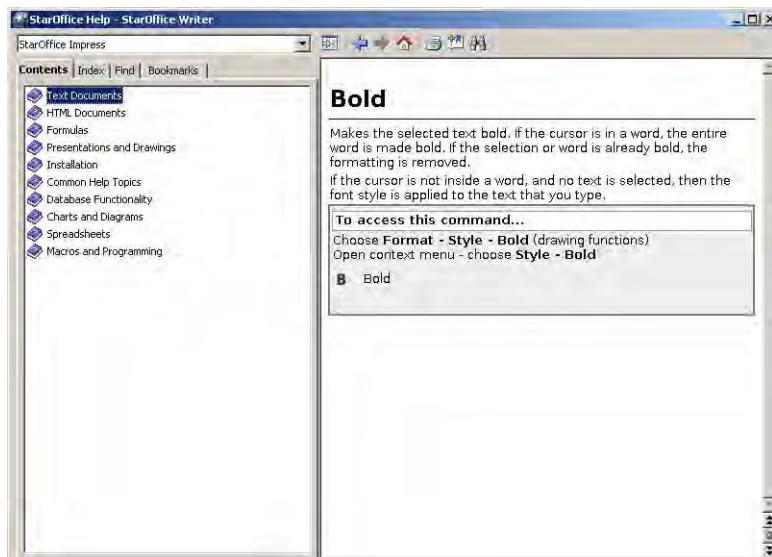


Fig 2.11 Help Agent window with help about Bold formatting.

Summary

- There are two types of formatting (i.e.) hard formatting and soft formatting.
- Changing the text style-bold, italic, underlined, and the font properties - size, colour are the commonly used formatting changes.
- Paragraph alignment can be of the following four types
 1. Left alignment
 2. Right alignment
 3. Justification
 4. Centering

- Indentation helps in providing the document more readability.
- The spacing between the lines in a StarOffice Writer document can easily be changed.
- Bullets and Numbers are used to list the important points and messages.
- An alternate method of formatting refers to creating a particular style and applying it quickly to a document instead of making individual changes to the line spacing, paragraph alignment, indentation etc.
- StarOffice has an on-line help facility. This facility can be used by clicking on the Help menu.

Exercises

I. Fill in the Blanks

1. The size of a font is measured in _____ and there are _____ points to an inch.
2. The _____ printer is required to get the hard copy of the document in colour.
3. _____ feature is used to mark the important portions of the document.
4. _____ key combination is used for justifying the selected paragraph.
5. The _____ is a named set of defaults for formatting text.

II. State true or false

1. Line spacing should always be an integer value.
2. Indenting text helps to increase the readability.
3. Modifying the line spacing will also modify the spacing between words in a line.
4. To remove bullets from a list the list is selected and the delete button is clicked.
5. A font is a set of characters and numbers in a certain style.

III. Answer the following

1. What is the difference between hard formatting and soft formatting?
2. What are the formatting changes that can be made with respect to the fonts?
3. What are the various types of paragraph alignments that can be made?
4. What does indenting the next mean?
5. How would you create the bullets and numbered list?

CHAPTER 3

CORRECTING SPELLING MISTAKES

The documents prepared using word processing software should be without any spelling mistake. For this purpose StarOffice Writer includes a dictionary and spell-check program. StarOffice Writer can identify the spelling mistakes as the document is typed or after the entire document is typed.

3.1 Checking Spelling While Typing

StarOffice Writer has an automatic spell-check feature that can check for possible spelling mistakes even as the document is being typed. This feature can be turned ON or OFF by clicking on the Auto Spellcheck  icon.

When Auto Spellcheck feature is ON, StarOffice Writer compares each word typed with the words in the dictionary and underline words that do not match with a squiggly red line. These red lines can be ignored and the typing work may be continued. The correction can be made after the document is created. These mistakes can be corrected in two ways.

1. **Backspace** key is pressed to delete a misspelled word and the word is retyped.
2. If the right spelling is not known, StarOffice Writer can help the user with some choices. The misspelled word is right clicked. A pop up menu appears on the screen. If the correct spelling is shown, a click is made on that word. StarOffice Writer makes the replacement.

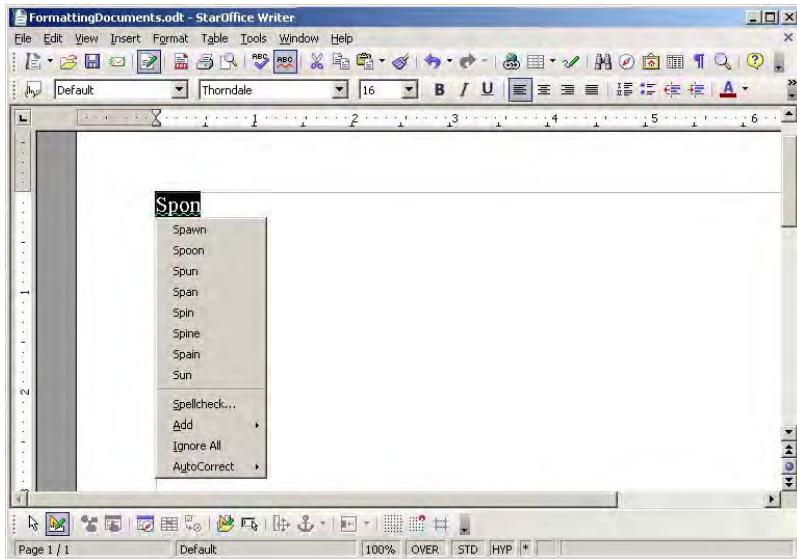


Fig 3.1 A popup menu displaying alternatives for the word “spon”

3.2 Checking the Spelling after the Document is Typed

The following steps are used for a spell check.

Tools → Spelling → Check is selected or is clicked. To check a part of the document only that portion is selected. The **F7** key may also be pressed to select the spelling command.

The dialog box shown in figure 3.2 appears on the screen.



Fig 3.2 Spelling check Dialog Box

Not in dictionary text area displays the misspelled word and the **Suggestions** list displays any alternative spellings.

Any of the following can be done:

- To skip this occurrence but stop on the next one. **Ignore Once** button is clicked. To skip all occurrences of this word. **Ignore All** button is clicked.
- To replace the word with one of the selected spellings, in the suggestions list that spelling is clicked, and **Change** button is clicked to change this occurrence and **Change All** button is clicked to replace all occurrences of the word.
- If none of the replacements is correct, correction can be made manually in the **Not in dictionary** text area. **Add** button is clicked to add the word to the dictionary.

Learn by solving

1. Open the document Exercise 1. Ensure that the Auto Spellcheck is ON. Add the following paragraph to the existing text. As you are typing make some spelling mistakes intentionally and observe how the Auto Spellcheck works.

It is more than likely that many of today's Olympic disciplines are sophisticated versions of the games of strength and speed that flourished in ancient India and Greece. Chess, Wrestling, Polo, archery and hockey (possibly a fall-out from polo) are some of the games believed to have originated in India.

2. Now, Switch off the Auto Spell Check option and makes some more spelling mistakes. Correct them using the Spelling Correction dialog box.
-

3.3 AutoCorrect Option

In addition to flagging some words, StarOffice Writer will automatically correct some spelling mistakes. StarOffice Writer recognises some common misspellings and typographical mistakes and makes the replacement automatically. For instance, if a word is typed as "teh", StarOffice Writer automatically replaces this with the correct word "the". In addition to the ones StarOffice Writer automatically corrects, the user can add other words to the list. For instance if a user feels that the word "colour" is frequently mistyped as color or in any other wrong way he/she can add an AutoCorrect entry and the StarOffice Writer will make the correct replacement every time that word "colour" is wrongly typed.

3.4 Creating AutoCorrect Entry

If the error and its correction are to be added to the Auto Correct list the following command is used: **Tools → AutoCorrect**

Now a dialog box as shown in figure 3.3 appears on the screen. In this box, with the **Replace** tab selected the word to be replaced is typed in the **Replace** text box and the replacement word in the **With** text box. When the same mistake is made StarOffice Writer will automatically replace the misspelled word with the correct spelling.

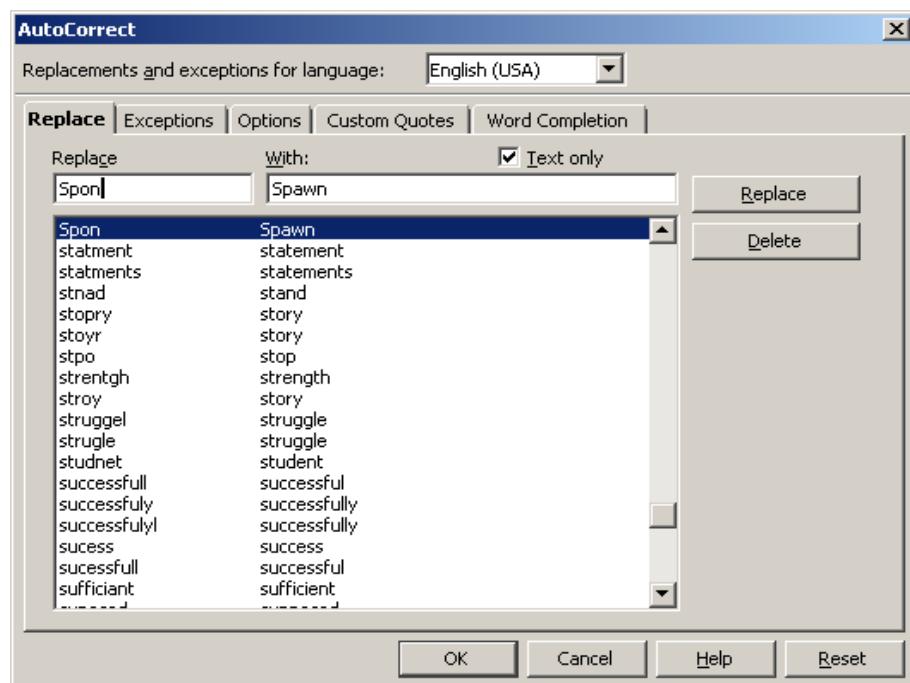


Fig 3.3 AutoCorrect Dialog Box

Learn by solving

- 1) Type the following words and observe how StarOffice Writer's Autocorrect feature corrects them.
 - a) And
 - b) Actually
 - c) After the
 - d) Can
 - e) Clear
 - f) The
 - g) This
 - h) That
 - i) To the
 - j) tyhe
 - 2) Open AutoCorrect dialog box and type the word organization in Replace list and organisation in With list and press OK. Now, in the document type the word organization and observe what happens.
-

Summary

- Spelling mistakes can be corrected both while typing as well as after the entire document is typed.
 - Automatic Spelling Correction feature corrects some of the misspelled words.
 - Auto Correct option is very useful for correcting the spelling of the commonly misspelled words.
-

Exercises

I. Fill in the blanks

- 1) The _____key is pressed to select the Spelling correct dialog box.
- 2) The _____ button is used to skip the spelling change for the current word.
- 3) _____ option can be used to automatically replace the misspelled word with the correct spelling.

II. State true or false

- 1) If the right spelling is not known StarOffice Writer can help the user with some choices.
- 2) StarOffice Writer puts a squiggly green line under some words to alert some possible spelling mistakes.
- 3) The StarOffice Writer will automatically correct some of the common misspellings.

III. Answer the following

- 1) What does Automatic Spelling Correction mean ?
- 2) How would you carry out the spell check after the entire document is typed?
- 3) How would you add a word in the Auto Correct list of the StarOffice Writer?

CHAPTER 4

WORKING WITH TABLES

4.1 Creating a Simple Table

The following steps are used to create a simple, default - style table:

- 1) When **Table → Insert → Table** is selected from the menu bar, the **Insert Table** dialog box as shown in figure 4.1 appears on the screen.

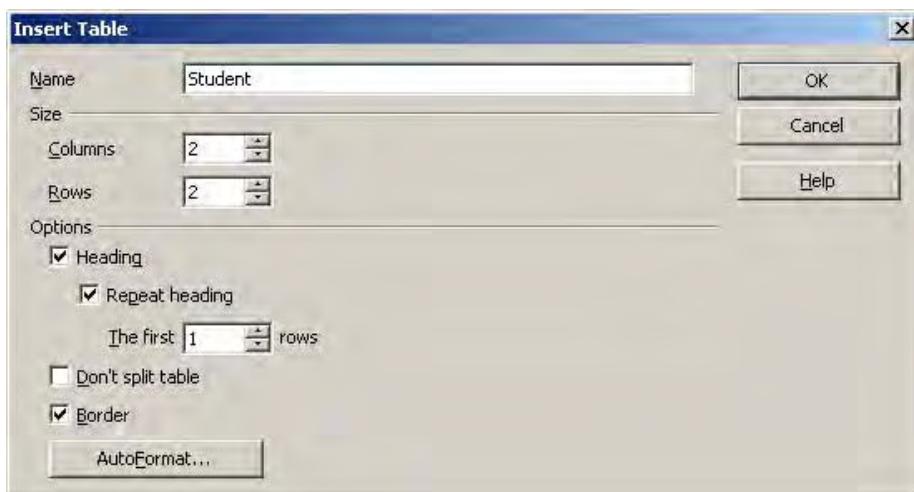


Fig 4.1 Insert Table dialog box

- 2) In the **Name** textbox the name of the table is given. Using the spin arrows in the **Columns** and **Rows** text box the number of columns and rows are entered. StarOffice Writer displays the table as a grid with the specified number of columns and rows. By default each cell includes a border. The look of this border can be deleted or changed, which is described later in this chapter

Note: The floating toolbar as shown in figure 4.2 appears when **View** → **Insert** is selected from the menu bar.



Fig 4.2 Floating Toolbar for Insertion function

In this toolbar, the first icon is the **Insert Table** icon. Clicking on the arrow displays a grid. Move the mouse over the grid to specify the number of rows and columns. Alternatively click the icon to insert a display the Insert Table dialog box.

4.2 Entering Data in the Table

Once the table is created StarOffice Writer places the insertion point in the first cell of the table. A cell is the intersection of a column and a row. To type something in a particular cell first the insertion point is moved to the required cell and the required data is typed in it. To move to the desired cell first a click is made inside the cell or the arrow keys can be used. One can also press **Tab** key to move forward through the cells or **Shift + Tab** to move backward through the cells.

Any amount of text can be typed within the cell. If the entry is a long one, when the text or data reaches the cell border StarOffice Writer will wrap the text to the next line and expand the cell making it taller and not wider. The contents of the cell can also be formatted and edited using the features learnt in the previous chapters.

4.3 Adding or Deleting Rows and Columns

Many times it is difficult to tell in advance the number of rows and columns that the user needs in a table. After creating a table the required number of rows and columns can either be added or deleted very easily.

4.3.1 Adding Rows or Columns

The simplest way to add a row is to press **Tab** in the last row of the table. StarOffice Writer adds a new row. One can also add a row or a column in the table by following the steps given below:

1. To insert a row, select the  icon and press once. Now a new row is inserted below the present row.
2. To insert a Column, select the  icon and press once. Now a new column is inserted to the right of the present column.
3. To insert more than one row or column in the table, **Table → Insert → Rows** or **Table → Insert → Columns** command is used. Now a corresponding dialog box as shown in the figure 4.3 appears on the screen. Here one can select the rows or columns and the required quantity. If OK button is clicked the required number of columns or rows are added to the table.

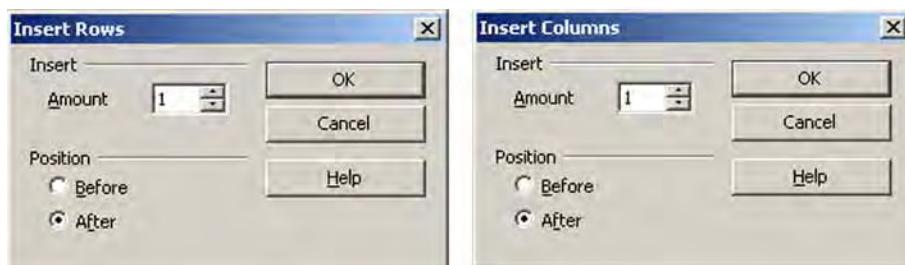


Fig 4.3 Insert Columns / Row dialog box

4.3.2 Deleting Rows and Columns

Rows or columns can be deleted by selecting them by using the command shown below:

Table → Delete → Rows or **Table → Delete → Columns**.

4.3.3 Deleting the Entire Table

If the entire table is selected by dragging the mouse across it and the **Delete** key is pressed, only the entries are deleted and not the table. To delete the table the following steps are used:

1. The entire table is selected using **Edit → Select → All** command while keeping the insertion point inside the table.
2. The menu option **Table → Delete → Table** is used to delete the selected table.

4.4 Changing the Rows/Column Width

To change the row/column width, follow these steps:

1. To resize a column, place the cursor in a table cell, hold down Alt, and then press the left or the right arrow. To resize the column without changing the width of the table, hold down Alt+Ctrl, and then press the left or the right arrows.
2. To resize a row, place the cursor in the row, hold down Alt, and then press the up or the down arrows.

Alternatively if **Table → Table Properties** command is used one would get a **Table Format** dialog box as shown in the figure 4.4. Choose the **Columns** tab and type column size in the **Column Width** spin boxes and click **OK** button to change the column width.

This method can be used when precise measurements for each column are known or needed.

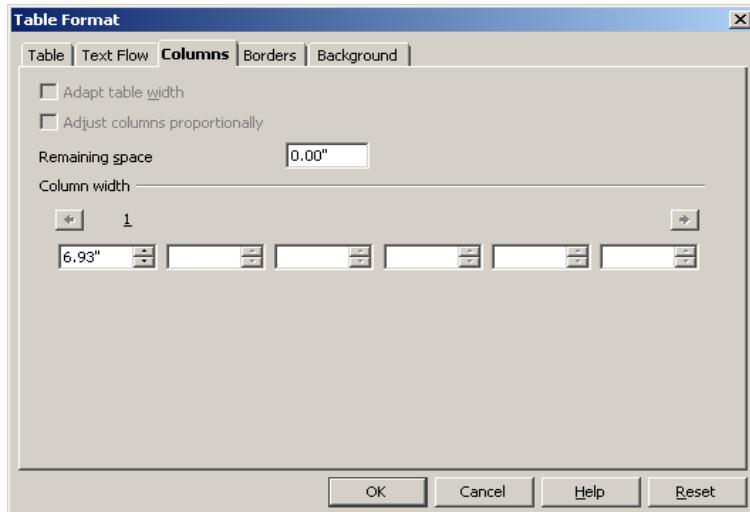


Fig 4.4 Table Format dialog box

4.4.1 To Make Selected Rows/Columns the Same Size

Follow the steps to make the selected rows/columns the same size.

- Select the rows and columns that are to be resized.
- To make all columns even, right click inside the table and select **Column → Space Equally** in the pop-up menu.
- To make all rows even, right click inside the table and select **Row → Space Equally** in the pop-up menu.

4.5 Table Formatting Toolbar

Once a click is made inside a table a floating toolbar for tables appears at the top of the screen. The toolbar contains a number of icons as shown in the figure 4.5 which can be used for various functions related to the table.



Fig 4.5 Table Formatting Toolbar

The function of each icon in the toolbar is indicated below:

-  - **Table Fixed**
-  - **Table Fixed, Proportional**
-  - **Table, Variable**
-  - **Merge Cells** - This icon is used to combine two or more cell into a single cell.
-  - **Split Cells** - This icon is used to split a cell into two or more cells.
-  - **Optimise** - Clicking on this icon displays a pop up menu with options like Space columns equally, Space rows equally, Optimum row height and Optimum column width.
-  - **Inserting Row** - This icon is used to insert a row below the current row.
-  - **Inserting Column** - This icon inserts a column to the right of the current column.
-  - **Delete Row** - This icon deletes the current row from the table.
-  - **Delete Column** - This icon deletes the current Column from the table.
-  - **Borders** - This icon displays a floating toolbar with different border option for the table.
-  - **Line Style** - This icon is used to choose the style of line to be used for the border.
-  - **Border Colour** - Clicking on this icon displays a palette of colours that can be used as a border colour for the table.

Learn by solving

1. Create a simple table as shown below containing 3 rows and 6 columns and enter the following data as shown.

1.	Sunil	100	98	99	100
2.	Arvind	99	96	97	100
3.	Subish	100	90	100	95

2. Insert one row at the top and enter the following

Sl.No	Name	Maths	Physics	Chemistry	Computer Science

3. Add two more columns in the table between the Name column and Maths subject column for inserting marks for two subjects viz., Tamil and English and enter some fictitious marks. Also insert two more rows before the last row and enter the details for two more students.
 4. Change the borders, line style and background colour of the table to a new one.
-

Summary

- Tables can be easily inserted at any point in the document.
- Rows and Columns can be added and deleted at either at the beginning, end or in the middle of the table.
- The row/column height/width can be easily resized to exact sizes.
- The table formatting tool bar contains a number of icons which can be used for various functions related to the tables.

Exercises

I. Fill in the blanks

1. A table is a grid with a specified no. of _____ and _____
2. To move backward through the cells of the table _____ key combination is used.
3. _____ dialog box can be used to set the width of the column to an exact size.
4. _____ tool bar is used to change the borders of the table.
5. _____, _____, _____ command is used to delete the selected column.

II. State true or false

1. Every table is identified by a specific name.
2. Rows and Columns can be inserted only at the end or beginning of the table.
3. The entire table can be deleted by selecting it and pressing the delete key.
4. There is a separate tool bar available for Table formatting.
5. All the columns in a table will be of uniform width.

III. Answer the following

1. How will you create a table in the document?
2. How will you add a required number of rows and columns in a table?
3. How to change the width of a column in a table?
4. What are the various functions of the icons in the table formatting tool bar?
5. How to make the selected rows and columns of the same size?

CHAPTER 5

PAGE FORMATTING

5.1 Changing the Margin

Margins control how close StarOffice Writer prints to the edge of the page. If there is a big top margin for instance, much white space is left at the top of the document. For a small top margin the text is printed closer to the top of the page.

The default margins are 1 inch top and bottom margins and 1.25 inches left and right margins. These margins work fine for most of the documents. But there may be occasions when there will be a need to change the size of the margins.

Using any one of the following methods, margins can be changed,

- Page Style Dialog Box
- Changing Margins Using Rulers

5.1.1 Page Style Dialog Box

If the user knows the exact value for the margins then the page style dialog box can be used to make a change. The following steps are used:

- **Format → Page** command is selected. A dialog box as shown in the figure 5.1 appears on the screen.
- Click the **Page** tab, if necessary.
- In Margins group, type the new values in the spin boxes or use the spin arrows to change the value.
- Click the **OK** button.

Use the **Page Preview** option in the **File** menu can be used to see the change. This option gives an overall picture of the document and visually shows to the user, how the change has affected the document.



Fig 5.1 Page Style dialog box

5.1.2 Changing Margins Using Rulers

If the user is not having the exact value for the margins then the **Ruler** option on the **View** menu can be used to change the margins. Following steps are used in this method:

- If the ruler is not displayed in the screen, **View → Ruler** option is clicked.
- The gray area of the ruler indicates the margin's top area.
- The mouse pointer is then moved in between the gray and white area of the ruler.
- When the pointer is in the right spot, it changes into a line with arrows on both sides
- The margin guide is dragged to a new location.

5.2 CHANGING PAGE ORIENTATION

Usually the length of a document will be more than the width. This orientation is called **portrait**. But in some of the documents the width will be more than the length. This type of orientation is called **landscape**. The default orientation is portrait. But, the user can change it to landscape if he wants. Most documents are printed in 8.5 inch by 11 inch paper. But the user has an option to change the paper size.

To change the orientation or paper size, the following steps are used:

- The **Format → Page** option is clicked. The page style dialog box is displayed as shown in the figure 5.1.
- Click the **Page** tab, if necessary.
- Select the necessary paper format from the **Format** drop-down list in the **Page Format** section. Or enter the values in the **Width** and **Height** spin boxes.
- For changing the orientation **Portrait** or **Landscape** radio buttons are used.

5.3 CREATING A HEADER AND FOOTER

When the documents are longer than one page, normally some type of reference numbers are added on the page. For instance, page numbers are a must. Otherwise even if the pages are stapled or bound, a particular page cannot be easily referred. In addition, the user may want to include other text that helps the reader identify the document. For example, the document title or the author's name can be included in every page. Rather than typing this information on every page a Header and Footer can be created. **Header** is an area at the top of page and footer is an area at the bottom of the page. The user can specify what he wants to display in this area and StarOffice Writer will insert the specified text automatically on each page.

To create a header, the **Header** tab on the **Page Style** dialog box can be used. A screen with various options for the header appears as shown in figure 5.2. In this dialog box, the **Header on** check box is clicked. Four spin boxes are also displayed. In those spin boxes the distance of the header from the text area, the header height, the distance from the left margin and the right margin are entered.

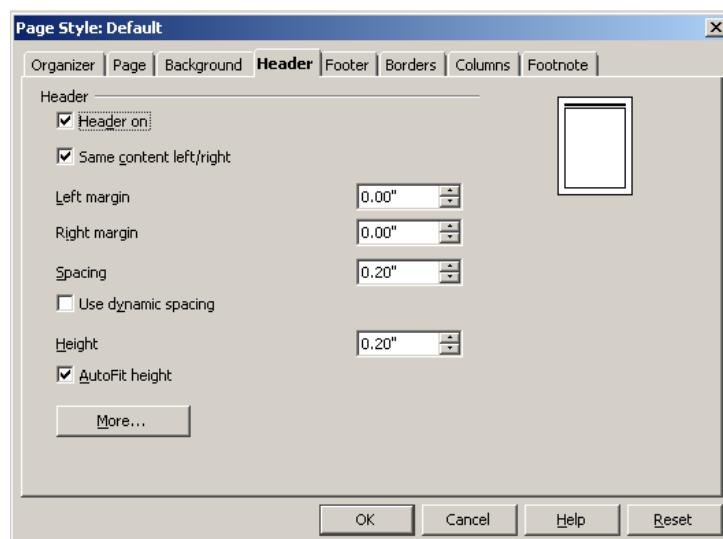


Fig 5.2 Header dialog box

The same procedure is followed for creating footer. The only difference is, to create footer, the Footer tab is clicked instead of the **Header Tab**.

A document page to which a header and footer has been added using the Page Style dialog box is shown in the figure 5.3. Note that the header and footer area is separated from the rest of the text by a thin line.

Header
6.4 Creating a Header and Footer
When the documents are longer than one page normally some type of reference numbers are added on the page. For instance, page numbers are a must. In addition, the user may want to include other text that helps the reader identified the document. For example, the document title or the author's name can be included in every page. Rather than typing this
Footer

Fig 5.3 A Page with Header and Footer

Once the header and footer are created, the text to be included can be specified. This can be done in the following steps.

1. Click in the header or footer area.
2. Click on **Insert → Fields**. A sub menu with a list of options appears. Clicking on an option in the list will insert the appropriate text in all the pages. For example, clicking on **Insert → Fields → Page Number** will insert page numbers on every page. Normal text can also be included in the header and footer. To do so, simply type the text where you want it.

Once the page numbers have been inserted, their format can be changed using the **Page Style** dialog box shown in figure 5.1. The required style can be selected from the list of styles displayed in the **Format** combo box of the **Page Style** dialog box shown in figure 5.4.

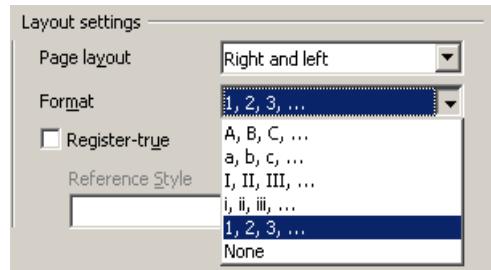


Fig 5.4 Numbering Combo box

Learn by solving

1. Open the document Exercise 1. Change the margins and observe the changes.
 2. Change the margins to their original settings. Using Print Preview ensure that this has been done.
 3. Change the margins again using the Ruler option on the View menu and observe the changes.
 4. Change the page orientation and observe the result.
 5. Add a header and footer to the document. In the header area, include the date and the topic. In the footer, insert the page number.
-

Summary

- The margins for a particular page can be set to an exact value using a Page Style dialog box or approximately using Rulers.
- There are two types of page orientation viz., portrait and landscape.
- The page numbers of different styles can be inserted to a StarOffice Writer document.
- Header and footer are some references remarks added at every page of the document of the top and bottom margins respectively.

Exercises

I. Fill in the blanks

1. The default margins are _____ top and bottom margins and _____ left and right margins.
2. _____, _____ can be used to see the page format change on the screen.
3. _____ dialog box is used to set the width of the paper.

II. State true or false

1. Header is normally used to contain the page number.
2. The margin sizes can be set to an exact value.
3. The desired page orientation is selected using a combo box in the page dialog box.
4. Margins can be resized by using the ruler.
5. Portrait orientation is also known as landscape orientation.

III. Answer the following

1. What does page formatting mean?
2. What are the two types of page orientations?
3. How can the ruler be used to change the margin?
4. What is meant by header and footer?
5. Explain the process of changing the margins using rulers.

CHAPTER 6

SPREADSHEET

6.1 Introduction

The personal computer (PC) first appeared in 1975. But, initially, the PCs were of interest primarily to the electronics hobbyists. Later in 1977 when more usable PCs started appearing, it attracted a wider population. The PCs became more popular when Dan Bricklin and Bon Frankston invented VisiCalc for Apple II in 1979. VisiCalc, “The visible calculator” was the first electronic spreadsheet. This attracted accountants, book keepers, managers and all those who created budget, analysed statistics or collected numerical research data. This powerful computational tool could save time, help avoid endless and brain-numbing arithmetic, and eliminate mathematical errors. It was acknowledged by many that the invention of the spreadsheet, more than any other event, launched the personal computer revolution.

6.1.1 What is an Electronic Spreadsheet?

An electronic spreadsheet is a worksheet used in a computer to create and quickly perform “What if” analysis of interrelated columnar data in workspaces.

Spreadsheets are made up of rows and columns as shown in figure 6.1. The intersection of rows and columns creates cells. The cells are addressed in terms of the row and column labels. Any data, like numbers, text or formulae can be typed into a cell. The power of the spreadsheet lies in the fact that the cells can contain formulae, which perform certain mathematical operations on the data in other cells and display the results in a new cell.

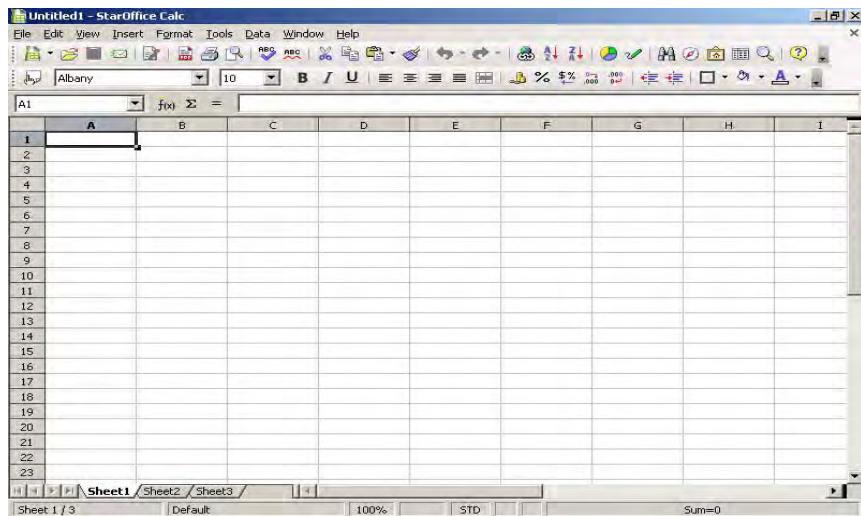


Fig 6.1 Empty Spreadsheet

In a spreadsheet, the rows are numbered from 1 to some length (upto 32,000 in the case of StarOffice Calc) and the columns designated with the letters A through Z, AA through AZ, and so on, as provided by different spreadsheet packages.

The following simple example illustrates how to use spreadsheets:

Consider an example of storing a number 150 in a cell and another number 16 in another cell. Add these two numbers electronically and store the result in a new cell. For this purpose, let us use the cells A3 and A4 for storing the numbers 150 and 16 respectively and the cell B4 for storing the sum of these two numbers.

To enter the value 150 in a cell A3, position the cursor in the cell A3, click the mouse to select it and type **150**. Now, you will find the number 150 appearing in cell A3. Similarly, enter the number **16** in cell A4. Let us now add the values in the cells A3 and A4 and store the

result in B4. To perform this operation, select the cell B4 by taking the cursor to B4 and clicking the same. Type the formula as **= A3 + A4** or use the sum function as **= sum (A3:A4)**. The formula appears in the input line of the Formula bar (below the menu bars). Press the **Enter** key. You will now find the sum 166 appearing in the cell B4, as shown in figure 6.2.

B4	A	B	C	D
1				
2				
3	150			
4	16	166		
5				
6				

Fig 6.2 Calculations in a spreadsheet

B4	A	B	C	D
1				
2				
3	150			
4	76	226		
5				
6				

Fig 6.3 Recalculations in a spreadsheet

A spreadsheet is like a grid of cells with a programmable calculator attached to each cell. The computer can perform calculations at a blinding speed. It does not matter how many numbers and formulae you put in a spreadsheet, the computer can recalculate every formula every time you change any number. For instance, change the number in the cell **A4** in the above example. The spreadsheet recalculates the sum automatically and shows the result in the **Cell B4** (Figure 6.3).

Electronic spreadsheets can also be used for presenting the worksheet data in an impressive manner such as bar-charts, pie-charts, line graphs, three-dimensional charts and other visual forms.

The terms ‘spreadsheet’ and ‘worksheet’ mean one and the same. But now, over time, the term ‘spreadsheet’ has come to refer specifically to the software packages, while ‘worksheet’ refers to the files that you create with spreadsheet software.

6.1.2 Spreadsheet applications

There are numerous applications possible using electronic spreadsheets. A few of the common applications are given below:

- Payment of bills
- Income tax calculations
- Invoices or bills
- Account Statements
- Inventory Control
- Cost-Benefits Analysis
- Financial Accounting
- Tender Evaluation
- Result analysis of students

6.1.3 Advantages of using Electronic spreadsheets

The electronic spreadsheet offers several advantages over the manual one. The following are some of the main advantages of electronic spreadsheets:

- Calculations are automated through the built-in mathematical, financial and statistical functions.
- Accurate results to any desired level of decimal points are possible

- Worksheets can be quite big in size
- Any part of the worksheet can be viewed or edited.
- Worksheet can be saved and retrieved later.
- Any part or whole of an existing worksheet can be merged with any existing or new worksheet.
- Any part or whole of the worksheet can be printed in a desired format.
- Worksheet data can be viewed in the form of graphs or charts
- The worksheet information can be transferred to any database or word processing software.

6.1.4 Popular Spreadsheet software

Commercial electronic spreadsheet packages are in use since late 1970s. VisiCalc (Visible Calculator) was the first commercial spreadsheet package developed for microcomputers in 1979. It contained 63 columns (A, B,.....BK) and 254 rows. VisiCalc was essentially a financial analysis program.

After seeing the power the success of VisiCalc, Several companies tried to develop spreadsheet packages. Lotus Development Corporation introduced Lotus 1-2-3 in 1982. This package became very popular because of its ability to combine database management and graphics features with its spreadsheet.

The other popular spreadsheet programs are ‘Excel from Microsoft Corporation ‘Quattro Pro from Borland International, ‘Improve’ from Lotus Corporation and ‘StarOffice Calc’ from Sun Microsystems.

6.2 Working with StarOffice Calc

StarOffice Calc is a powerful spreadsheet program included in StarOffice. It offers all the functions needed for business use, including various financial and statistical functions, StarOffice Calc database functions and much more.

Creating a worksheet is a process that involves several steps like organizing the data, entering the data, creating formulae, editing the worksheet, formatting values, labels, and cells, adding charts if required, analysing the data and printing the worksheet.

Let us learn how to create a worksheet using StarOffice Calc.

6.2.1 Creating Your First Worksheet

To work with StarOffice Calc, open **StarOffice** and click on the **File** option in the main menu bar. Then click on **New → Spreadsheet**. A new spreadsheet opens up as shown in figure 6.1

At the top of the window is the **Menu bar**. To use a menu, point to it with the mouse cursor and press the left mouse button. The menu will open displaying a list of options and you can select any option by clicking on it. Below the Menu bar is the **Main toolbar**. Below the Main toolbar are the **Function bar** and the **Object bar**. These bars have shortcut icons for frequently done tasks. Below these bars is the **Formula bar**. This bar is used to display the current cell and its contents. It also has a few more shortcut icons. Below the formula bar are the column headings of the worksheet. Next to it are the row headings. The data area is in the middle of the window. At the extreme bottom are the **Status Bars** and **Scroll bars**.

Before you can create your first worksheet, you have to first collect the data that you want to include in the worksheet. Suppose you want to create a worksheet containing the details of marks obtained by students. To do this, you can collect details such as 'Reg.No.', 'Name of the student' and 'Marks' of different subjects, obtained by each student. Then you can enter the data into the worksheet. Once the data has been entered into the worksheet, you can perform various calculations on this data and calculate things like 'Total marks' of all the

subjects and ‘Average marks’. You can then, format the data in the worksheet to make it look attractive. You can also draw a graph using this data.

6.2.2 Entering Data in the Worksheet

After deciding and collecting the data to be entered in the worksheet, you are now ready to actually enter the data. The active cell in which you want to type the data is identified by the cell pointer which is a rectangular box covering that cell. To begin with, the cell pointer is always in cell A1. You can change the position of the cell pointer by clicking the mouse on the concerned cell or by using the arrow keys on the keyboard. The Tab, Home, End, PgUp and PgDown keys on the keyboard also allow you to move around the worksheet.

After selecting the cell, enter the data. If the data entered is a number, the program recognizes that as a number and allows you to perform calculations on it. If the data entered is a word, the program recognizes it as a label and does not permit you to perform calculations on it.

StarOffice Calc also allows you to enter dates and time in the worksheet. This is very useful because you can also perform various calculations using them. For example, you can find the difference between two dates, add a number to a date and find the new date and so on. You will learn more about this later. You can enter dates in the worksheet just like you enter numbers and labels. Place the cursor in the cell where you want to enter the date and type it in as **MM/DD/YY**. You can enter the time in the worksheet by typing it as **HH:MM:SS**.

Listed below are the steps to create the worksheet for the student marks. Note that the cursor is in **Cell A1** to begin with.

The screenshot shows a Microsoft Excel spreadsheet window with a single row of nine cells. The first cell, A1, contains the number '1'. The second cell, A2, is currently selected and has a black border around it. The other seven cells (B1 through D1) are empty. The top menu bar is visible, showing 'A1' in the active cell indicator, along with function keys like f(x), Σ, and =.

A	B	C	D
1			
2			
3			
4			
5			
6			
7			
8			
9			

Fig 6.4 Blank Screen

- In cell A1, type the title as ‘Student Mark Details of 9th Standard’. Press the down arrow key to move to cell A2.
- In Cell A2, type the heading ‘Reg.No’. Press the right arrow key to move to cell B2.
- In cell B2, type ‘Name’. Move to cell C2.
- In cell C2, type the subject name as ‘English’
- In cell D2, type ‘Tamil’
- In cell E2, type ‘Maths’
- In cell F2, type ‘Science’
- In cell G2, type ‘Total’
- In cell H2, type ‘Average’

The worksheet thus created is shown in figure 6.5

Reg No	Name	English	Tamil	Maths	Science	Total	Average
1	Student Mark Details of 9 th Standard						
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							

Fig 6.5 The student marks worksheet

6.2.3 Saving the Worksheet

To save the worksheet created, go to the **File** menu and select the **Save** or the **Save As** option. A screen appears as shown in figure 6.6

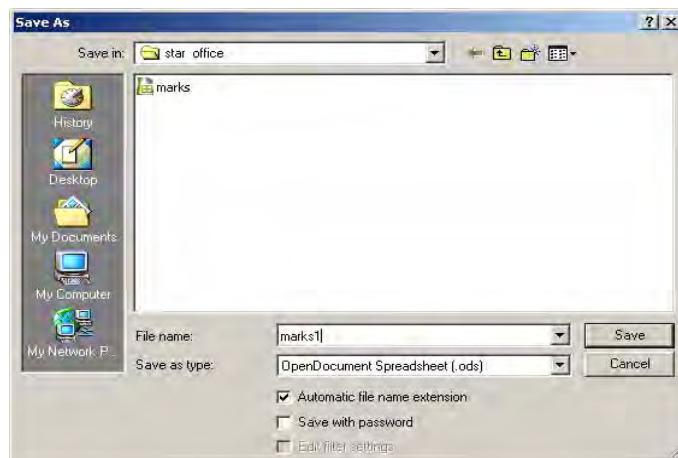


Fig. 6.6 Save As Dialog box

Type in a file name and click on **Save**. For example, to save the student marks, type the name **Marks** in the **File name** box and click on the **Save** button. You can also click on the **Save**  icon on the Standard toolbar.

6.2.4 Closing the worksheet

In order to close the worksheet, go to **File** menu and select the **Close** option.

6.2.5 Opening a Worksheet

To open a worksheet that has been saved, select the **Open** option from the file menu. A dialog box with a list of files appears on the screen. Select the file that you want by clicking on it and then click on **Open**. You can also click the **Open** icon  on the Standard toolbar to open an existing file.

6.2.6 Quitting from StarOffice

The **Exit** option under the **File** menu can be used to quit from StarOffice.

Learn by solving

Create the Marks worksheet created above with the following data:

Reg No.	Name	English	Tamil	Maths	Science
1000	Kumar A.	87	85	74	86
1001	Aravindan J.	63	86	62	94
1002	Govindan S.	63	76	73	75
1003	Velmurugan T.	75	72	63	85
1004	Thamizharasi G.	75	46	52	64

After you complete the data entry the worksheet will look be as shown below.

	A	B	C	D	E	F	G	H
1	Student Mark Details of 9 th Standard							
2	Reg No	Name	English	Tamil	Maths	Science	Total	Average
3	1000	Kumar A	87	85	74	86		
4	1001	Aravindan J	63	86	62	94		
5	1002	Muthu S	63	76	73	75		
6	1003	Vijay V	75	72	63	85		
7	1004	Swetha A	75	46	52	64		
8								
9								

Fig. 6.7 Worksheet of the Student Database

Note that in cells B6 and B7, the complete name is not displayed.

This is because the width of Column B is not enough; StarOffice Calc indicates this with small red triangles. Later in this chapter, you will learn how to increase the column width.

Save the worksheet as **Marks**

6.3 Editing the Data in the worksheet

To edit the data present in a worksheet, first open the worksheet by clicking on **File → open**. Next, move the cursor to the cell, which you want to edit. Note that the contents of the cell are displayed on the formula bar also. You can edit the contents in the following two ways:

1. Type in the new data. The new data will simply overwrite the old contents of the cell.
2. Click on the formula bar with the mouse, press the **F2** function key or simply double-click on the cell. A vertical cursor appears on the formula bar. Move the cursor to the left using the left arrow key or the backspace key and edit the data.

6.4 Creating Formulae

After entering data in the worksheet you can perform calculations on the data in the worksheet. This is done using formulae. In order to create formulae, you first need to know the syntax that describes the format of specifying a formula. The syntax of formula begins with an equal sign followed by a combination of values, operators and cell references. The various operators available for calculations, in StarOffice Calc are given below:

6.4.1 Arithmetic Operators

These operators return numerical results

Operator	Name	Example
+(plus)	Addition	1+1
-(minus)	Subtraction	2-1
-(Minus)	Negation	-5
*(asterisk)	Multiplication	2*2
/(Slash)	Division	9/3
% (Percent)	Percent	15%
\wedge (Caret)	Exponentiation	3 \wedge 2

6.4.2 Comparative operators

These operators return either true or false.

Operators	Name	Example
=	Equal	A1=B1
>	Greater than	A1>B1
<	Less than	A1<B1
>=	Greater than or equal to	A1>=B1
<=	Less than or equal to	A1<=B1
<>	Inequality	A1<>B1

6.4.3 Text operators

The operator combines sections of text to the entire text.

<u>Operator</u>	<u>Name</u>	<u>Example</u>
&(And)	Text operator: And	“Star” & “Office” yields StarOffice”

6.4.4 Reference Operators

These operators combine areas.

<u>Operator</u>	<u>Name</u>	<u>Example</u>
:(Colon)	Range	A1:C108
!(Exclamation point)	Intersection	SUM(A1:B6!B5:C12)

When arithmetic operators are used in formulae, StarOffice Calc calculates the results using the rules of precedence followed in Mathematics. The order is as follows:

1. Exponentiation (\wedge)
2. Negation (-)
3. Multiplication and Division (*, /)
4. Addition and Subtraction (+, -)

Here is an example to illustrate how to create formulae:

- Place the cell pointer in the cell where you want to enter the formula. In the Marks worksheet example, place the cursor in cell G3.
- Type the formula as =C3+D3+E3+F3 and press the **Enter** key. The total mark of the student Kumar A. appears in the Cell G3.

The marks worksheet with the total thus calculated is shown in figure 6.8

	A	B	C	D	E	F	G	H	I
1	Student Mark Details of 9 th Standard								
2	Reg No	Name	English	Tamil	Maths	Science	Total	Average	
3	1000	Kumar A	87	85	74	86	332		
4	1001	Aravindan J	63	86	62	94			
5	1002	Muthu S	63	76	73	75			
6	1003	Vijay V	75	72	63	85			
7	1004	Swetha A	75	46	52	64			
8									

Fig. 6.8 The worksheet of the Student Database with Total

6.5 Fill Command

You have learnt how to create and use formulae to calculate. But, in the above example, you have calculated only one total. To calculate the other totals, you can type the corresponding formulae in the cells G4, G5, G6 and G7. There is an easier way of entering these formulae. You can type the formula in cell G3 and then copy it to the

remaining cells. This can be done using the **Copy** and **Paste** icons on the standard toolbar. Recall that you learnt how to use these icons in StarOffice Writer. You can also use the **Automatic Fill** feature of StarOffice Calc.

AutoFill automatically generates a data series based on a defined pattern.

1. On a sheet, click in cell, and type a number.
2. Drag the fill handle in the bottom right corner of the cell across the cells that you want to fill, and release the mouse button.

The cells are filled with ascending numbers.

To copy the contents of a cell, click on the cell. Click and drag the mouse to highlight all the cells where you want to copy the contents. Now, select **Edit → Fill → Down (or Left)**. The content of first cell will be copied in all the highlighted cells.

Note: A continuous group of cells in a worksheet is called a **Range**. A range is referred to by the range address. A range address is the address of the first cell in the range, followed by a colon, followed by the address of the last cell in the range. For example, the cells, G1, G2, G3, G4 and G5 can be called G1:G5. The cells A1, B1, C1, D1, E1 and F1 can be called A1:F1 and the cells A4, A5, A6, B4, B5 and B6 can be referred to as A4:B6.

For example, to copy the contents of cell G3 in the cells G4, G5, G6 and G7, highlight the cells G3 to G7 (also referred to as G3:G7). Click on **Edit → Fill → Down**. The contents of the cell G3 will be copied to all the other cells, as shown in figure 6.9.

	A	B	C	D	E	F	G	H
1	Student Mark Details of 9 th Standard							
2	Reg No	Name	English	Tamil	Maths	Science	Total	Average
3	1000	Kumar A.	87	85	74	86	332	
4	1001	Aravindan J	63	86	62	94	305	
5	1002	Govindan S	63	76	73	75	287	
6	1003	Velmurugan	75	72	63	85	295	
7	1004	Thamizharasi	75	46	52	64	237	
8								
9								
10								
11								

Fig. 6.9 The contents of cell G3 has been copied to G4:G7

You can also use the Fill command to generate a series of data directly from the values of the selected cells. First, select the cells of the worksheet that you want to fill. Choose the command **Edit → Fill → Series**. Select the type of series from the options that appear as shown in figure 6.10

For example, if you want to enter numbers in the cells of a column in an increasing order with a difference of 3 between subsequent cell values, you will have to just enter only the initial value in the first cell of the column and specify the direction, type and increment. In this case, select **Direction as Down**, **Type as Linear** and **Increment as 3**. Then by clicking the **OK** button the values in the subsequent cells of the column will be automatically generated.

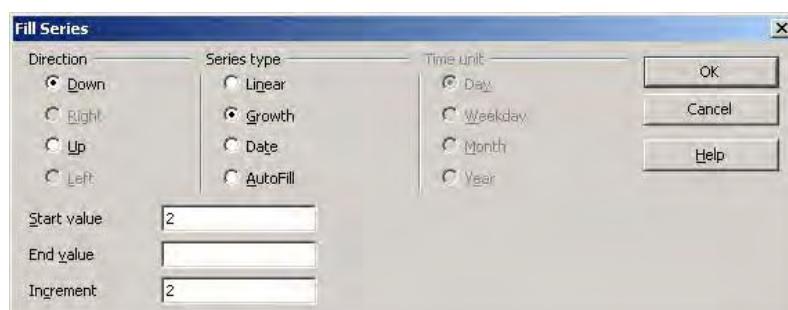


Fig. 6.10 Fill series dialog box

As another example, select the range A1:D6 in the worksheet.
Click on **Edit → Fill → Series**. Choose

2 as your **Start value**
2 as your **Increment**
Growth as the **Type**, and
Down as the **Direction**.

Now, click on **OK** and you will find the worksheet filled as shown in figure 6.11

	A	B	C	D	E
1	2	4	8	16	
2	4	8	16	32	
3	8	16	32	64	
4	16	32	64	128	
5	32	64	128	256	
6	64	128	256	512	
7					
8					

Fig. 6.11 Result for Fill command

As you can see in the dialog box, you can also automatically fill in series of dates and times. For example, to list all Sundays in a given period, say March to May 2005, proceed as follows:

- Enter the date as 3/5/05 into a cell
- Select this cell and adequate number of cells depending upon the stop value (in this case, 13 cells since the period is March – May 2005).
- Select the command **Edit → Fill → Series**
- In the dialog box, select **Day** as the **Date Unit** and enter the **Increment** as 7. Click **OK**.

The Sundays of March, April and May 2005 automatically appear in the selected cell as shown in figure 6.12.

	A	B	C	D
1	Dates of Sundays in March, April and May 2005			
2				
3		03/06/2005		
4		03/13/2005		
5		03/20/2005		
6		03/27/2005		
7		04/03/2005		
8		04/10/2005		
9		04/17/2005		
10		04/24/2005		
11		05/01/2005		
12		05/08/2005		
13		05/15/2005		
14		05/22/2005		
15		05/29/2005		
16				
17				

Fig 6.12 Auto filling Date and Month

6.6 Cell Referencing

In the Marks worksheet example, you typed the formula = C3+D3+E3+F3 in cell G3 and then copied it to the cells G4:G7. Click on the cell G4. Note that the formula in this cell is =C4+D4+E4+F4. This is because spreadsheets refer the cell addresses in a formula not as absolutes but in a relative way. For example, consider the formula in cell G3. StarClac reads this formula as

- Add the value in the cell 4 columns to the left of current cell
- With the contents of the cell 3 columns to the left of current cell
- With the contents of the cell 2 columns to the left of the current cell
- With the contents of the cell 1 column to the left of the current cell.

So, when this formula is copied to the cell G4, it does not read as = C3+D3+E3+F3 but as

- Add the value in the cell 4 columns to the left of current cell
- with the contents of the cell 3 columns to the left of current cell
- with the contents of the cell 2 columns to the left of current cell
- with the contents of the cell 1 columns to the left of current cell

That is, = C4+D4+E4+F4.

This type of cell referencing is called **Relative cell addressing**. Relative cell addressing is the default type of cell addressing used by StarOffice Calc.

Relative cell addressing is also the reason why formulae are automatically recalculated every time the contents of the cells used in the formulae change.

The other type of referencing used in spreadsheets is **Absolute cell addressing**. A cell address can be made absolute by using the \$ (dollar) sign in front of row and column names.

For example, the C4 becomes absolute when you enter it as \$C\$4.

Absolute cell addresses do not change when copied.

6.7 Using Functions

StarOffice Calc has a wide variety of functions that allow you to perform several frequently done calculations. Functions are predefined formulae that are available in StarOffice Calc.

These functions are available in StarOffice Calc in the pull down menu of **Function Wizard** window as shown in figure 6.13. The functions available are divided into different categories. The categories are listed in the category pull down menu.

To select a function, go to **Insert** menu and Select the **Function** option. The **Function Wizard** dialog box appears. A list of all functions is displayed in the **Function** box when **All** is selected in the **Category** box. If a category is selected (e.g. Mathematical) the functions related to that category alone will be displayed in the function box.

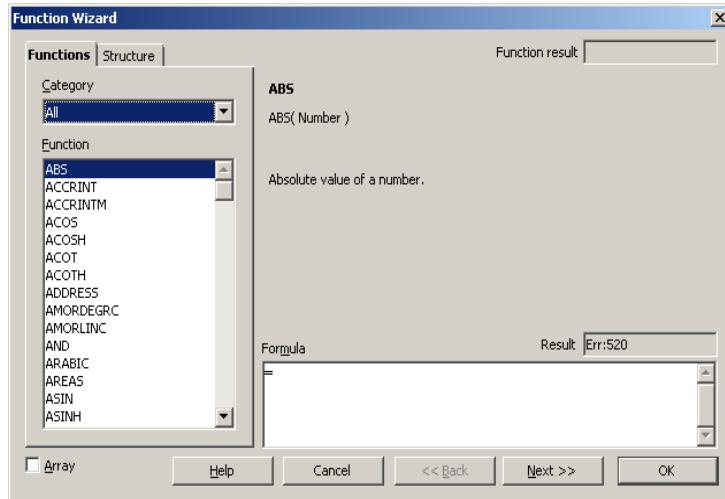


Fig 6.13 Function Wizard window

To select a function:

- Select the category in the **Category** box.
- Scroll down the list to find the function you want. Click once on the function name to see a short description of that function on the right side of the window. Double – click on it to insert it into the worksheet.

 The **Function Wizard** shortcut icon on the formula bar can also be used to select and insert functions.

For example, to insert the SQRT function (a function to find the square root of a number), place the cursor in the cell where you want to insert the function and click on the **Function Wizard** icon. Select **Mathematical** from **Category**. Select the **SQRT** function from the list of functions, which appears by double clicking on it. The Function Wizard displays a brief description of the function and prompts you to enter the number or the cell address on which the function should work. Enter the number **64**.

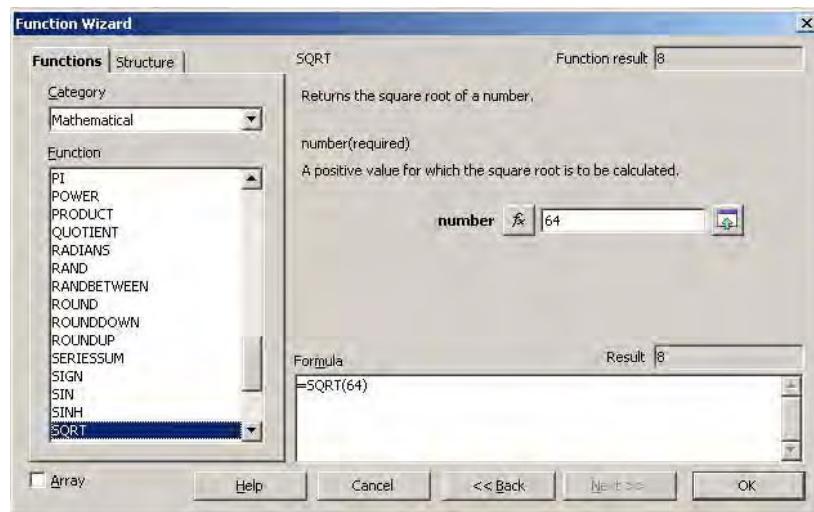


Fig 6.14 The Function Wizard prompts you to enter a number or a cell address

When you click on **OK**, the result is displayed in the cell in the worksheet.

Σ One of the most commonly used function is the **Sum** function. This function calculates the sum of a given set of numbers. To use this function, you can either click on the **Function Wizard** icon or then select **SUM** or you can just click on the **Sum** icon on the formula bar. StarOffice Calc suggests a range of cells for which sum is to be calculated. Press **Enter** to accept this suggested range or press the **Backspace** key and type in the range that you want.

For example, in the Marks worksheet, to calculate the total marks in cell G3, follow the steps given below.

- Click on the cell G3 to place the cursor there.
- Click on the **Sum** icon on the function bar. **= SUM (C3: F3)** appears in the cell.
- Press **Enter** to accept the suggested range.
The result, that is, 332 is displayed in the cell G3.

Learn by solving

1. Open the worksheet **Marks**.
2. Use a formula to calculate the total in cell G3.
3. Use the **Fill** command to copy the formula to the cell G4:G7.
4. Close the worksheet without saving.
5. Open the worksheet again and use the **Sum** function to calculate the total in cell G3.
6. Use the **Fill** command to copy the formula to the cells G4:G7.
7. Save the worksheet.
8. Enter a formula in cell H3 to calculate the average marks.
9. Use the **Fill** command to copy the formula to the cells H4:H7.
10. Close the worksheet without saving.
11. Open the worksheet again and use the **AVERAGE** function to calculate the average in cell H3.
12. Use the **Fill** command to copy the formula to the cells H4:H7.
13. Save and close the worksheet.

6.8 Date Arithmetic

Manual date calculations can be tricky because you have to keep track of the number of days in a month. In spreadsheets, date calculations become very simple. Here you can add a number to a date and arrive at a new date, find the difference between two dates and use a wide variety of function and formats to get what you want.

For example, enter a date 03/04/05 in a cell, say A2. Remember that while entering dates the month always comes first. Suppose you want to calculate the date 79 days after this date. To do so, enter the formula, **=A2 + 79**, in another cell, say A4. The date 05/22/05 appears in the cell.

Now, suppose you want to calculate the difference between two dates, 05/10/05 and 12/8/70. To do so, enter the two dates in two different cells. In a third cell enter the formula = **first cell – second cell**. The result will be displayed as **12572**.

6.9 Formatting the Worksheet

In the earlier chapters, you learnt the various formatting options of StarOffice Writer. You can use several of those options in StarOffice Calc also. In addition, StarOffice Calc provides you with several formatting options for formatting numbers. It is important to remember that by formatting the contents of a cell, only the display changes; the contents remain unchanged.

Before formatting the cells in a worksheet, you have to select the cells that you wish to format. You already know how to select one cell. Just click on the cell and it will be selected. To select a group of cells (a range), click on the first cell in the range and click and drag to the last cell in the range.

To select a complete row or a column, click on the respective row number or column name. To select more than one row or column, click on the first row number or column name and click and drag till all the rows and columns you want are selected.

Listed below are some of the formatting options available in StarOffice Calc.



This is the **Bold** icon and is used to display data in bold. To use this icon, highlight the cells and click on the icon.



This icon is used to display the data in italics.



This is used to underline the data in highlighted cells.



This is the **Change Font** icon. This icon displays list of fonts that can be used. Select the font by clicking on it.



This icon is used to change the font size of the data. To do so, select the data and click on this icon.



This is the **Font Colour** icon. This can be used to change the font colour.



These are the **Align Left**, **Align Center**, **Align Right** and **Justify** icons. They are used to align the contents of cells.



This is the **Number Format: Currency** icon. Clicking on this will display the contents of the selected cells in currency format, that is with a \$ in front and with two decimal digits.



This is the **Number Format: Percent** icon. Clicking on this icon will display the current contents in percentage format. Note that it multiplies the contents of the cell by 100 and displays the result with 2 decimals.



This is the **Number Format: Standard** icon. Clicking on this icon will display the contents of the selected cells in default format.



These are the **Number Format: Add Decimal** and **Number Format: Delete Decimal** icons. They are used to increase or decrease the number of decimal digits that are to be displayed in the selected cells.

The **Format** menu can also be used to format cells. To do so, select the cells you want to format and click on **Format** → **Cells**. The **Format Cells** dialog box appears as shown in figure 6.15.

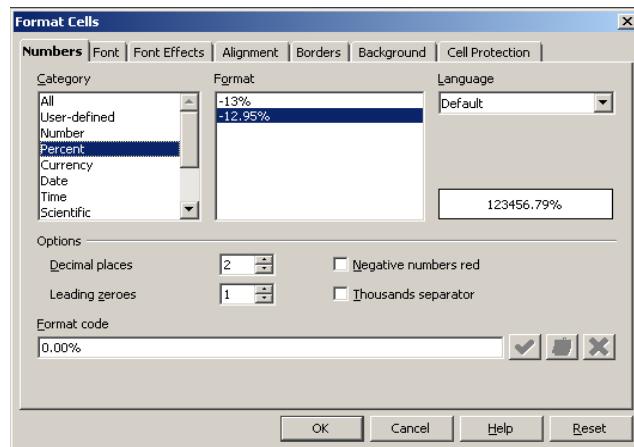


Fig 6.15 Format Cells dialog box

Tabs at the top of the dialog box can be used to choose the type of cell attribute you want to use. For example, the **Numbers** tab can be used for changing the format of numbers and the **Alignment** tab can be used to change the alignment of data in cells. Clicking on a tab will display all the formatting options available along with a preview of how the data will look if that format is used.

6.9.1 AutoFormat Sheet

The AutoFormat Sheet facility of StarOffice Calc helps to format the worksheet with different predefined styles and colours. For example, let us format the market worksheet as detailed below:

- In the Marks worksheet, select the cell from A1 to H7.
- Click on the **AutoFormat** option on the **Format** menu.

- The **AutoFormat** dialog box appears, as shown in figure 6.16, displaying various predefined format styles. A preview for each style is also displayed in the box.

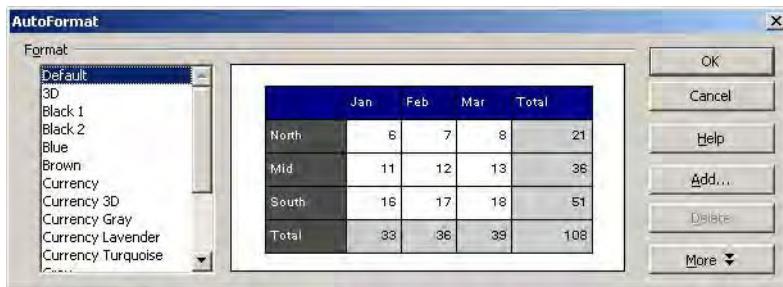


Fig 6.16 AutoFormat dialog box

- Select the **Default** format. The formatted worksheet is shown below.

	A	B	C	D	E	F	G	H
1	Student Mark Details of 9 th Standard							
2	Reg No	Name	English	Tamil	Maths	Science	Total	Average
3	1000	Kumar A	87	85	74	86	332	83
4	1001	Aravindan J	63	86	62	94	305	76.25
5	1002	Govindan S	63	76	73	75	287	71.75
6	1003	Velmurugan	75	72	63	85	295	73.75
7	1004	Thamizharasi	75	46	52	64	237	59.25
8								
9								

Fig 6.17 Auto Formatted worksheet

6.10 Changing Column Width and Row Height

Often while entering data into a worksheet you will realize that the width of the column is not enough. StarOffice Calc. allows you to change the width of a column and the height of a row. To change the column width, select the column whose width you want to change. Click on **Format → Column → Width** and type the new column width in the dialog box, which appears as shown in figure 6.18. Click on **OK**.

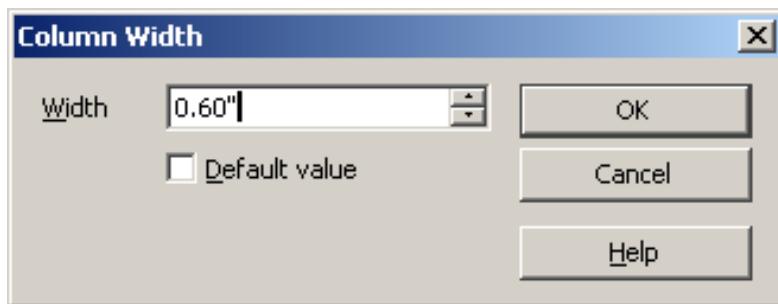


Fig 6.18 Changing column width

You can also change the column width in another way. Point to the line separating the column whose width you want to change from the next column. The mouse pointer becomes a double – headed arrow. Click and drag this pointer to the left to decrease the width and to the right to increase the width.

To change the row height, select the row whose height you want to change. Right click on the selected row and select **Height** from the menu that appears. Type the new height and click on **OK**.



Fig 6.19 Changing row height

You can also change the row height of a particular row by clicking and dragging the line separating that row from the next.

Learn by solving

Format the Marks worksheet as follows,

1. Format all heading in Bold.
 2. Change the font, size and color of the headings.
 3. Change the format of the average column to display 2 decimal digits.
 4. Using AutoFormat change the style and colors of the worksheet.
 5. Change the row width and column width wherever necessary.
-

6.11 Inserting Cells, Rows and Columns

Often after creating a worksheet, you find the need to insert a row or column in the worksheet. For example, you may want to add another subject to the Marks worksheet. StarOffice Calc allows you to insert one or more cells, rows and column.

To insert an empty cell or an empty row or a column in a worksheet already created, follow the procedure given below:

- Click the **Insert Cell** from **View → Toolbar** menu. A floating toolbar with four icons appears.
These icons are **Insert Cells Down**, **Insert Cells Right**, **Insert Rows** and **Insert Columns** icons.
-  In order to insert an empty cell in a column and move the existing cells down, place the cursor in the cell where you want to insert the new cell and click on the **Insert Cells Down** icon. For example, in the Marks worksheet, to insert a cell in D4 and move the contents of the cell D4:D7 down, select D4 and click the icon. The output screen is shown in figure 6.20.

	A	B	C	D	E	F	G	H	I
1	Student Mark Details of 9 th Standard								
2	Reg No	Name	English	Tamil	Maths	Science	Total	Average	
3	1000	Kumar A	87	85	74	86	332	83	
4	1001	Aravindan J	63		62	94	305	76.25	
5	1002	Govindan S	63	86	73	75	287	71.75	
6	1003	Velmurugan	75	76	63	85	295	73.75	
7	1004	Thairitzharasi	75	72	52	64	237	59.25	
8				46					
9									

Fig 6.20 Worksheet with cell inserted

- In order to shift the content of a cell to the right and to create an empty cell, select the cell and click the **Insert Cells Right** icon. For example, suppose that the data in the fifth row of the Marks worksheet has to be shifted from C5-F5 to D5-G5. To do so, select the cell C5 and click the icon. The output screen is shown in the figure below.

	A	B	C	D	E	F	G	H	I
1	Student Mark Details of 9 th Standard								
2	Reg No	Name	English	Tamil	Maths	Science	Total	Average	
3	1000	Kumar A	87	85	74	86	332	83	
4	1001	Aravindan J	63	86	62	94	305	76.25	
5	1002	Govindan S		63	76	73	287	71.75	
6	1003	Velmurugan	75	72	63	85	295	73.75	
7	1004	Thairitzharasi	75	46	52	64	237	59.25	
8									
9									

Fig 6.21 Worksheet with cell shift to right

- In order to insert an empty row in a worksheet, select the row where you want to insert the new row and click the **Insert Rows** icon. For example, if you want to insert a new row between rows 4 and 5 in the Marks worksheet select the row 5 and click the icon. The output screen is shown below.

	A	B	C	D	E	F	G	H	I
1	Student Mark Details of 9 th Standard								
2	Reg No	Name	English	Tamil	Maths		Science	Total	Average
3	1000	Kumar A	87	85	74		86	332	83
4	1001	Aravindan J	63	86	62		94	305	76.25
5									
6	1002	Govindan S	63	76	73		75	287	71.75
7	1003	Velmurugan	75	72	63		85	295	73.75
8	1004	Thamizharasi	75	46	52		64	237	59.25
9									

Fig 6.22 Worksheet with row inserted

-  In order to insert a column, select the column where you want to insert and click the **Insert Columns** icon. For example, to insert a new column between E and F in the Marks worksheet, select the column F and click the icon. The output screen is shown in figure 6.23.

	A	B	C	D	E	F	G	H	I
1	Student Mark Details of 9 th Standard								
2	Reg No	Name	English	Tamil	Maths	Science	Total	Average	
3	1000	Kumar A	87	85	74	86	332	83	
4	1001	Aravindan J	63	86	62	94	305	76.25	
5									
6	1002	Govindan S	63	76	73	75	287	71.75	
7	1003	Velmurugan	75	72	63	85	295	73.75	
8	1004	Thamizharasi	75	46	52	64	237	59.25	
9									

Fig 6.23 Worksheet with column inserted

6.12 Deleting Cells, Rows and Columns

The procedure for deleting a cell (s), row or a column is the same.

Delete Contents specifies the contents to be deleted from a cell or cell range. Before deleting, you must first select the cell or range. Contents are only deleted from the selected cells or active cell. Similarly, if several sheets are selected, only the active one will be affected. To access this command choose **Edit → Delete Contents**.

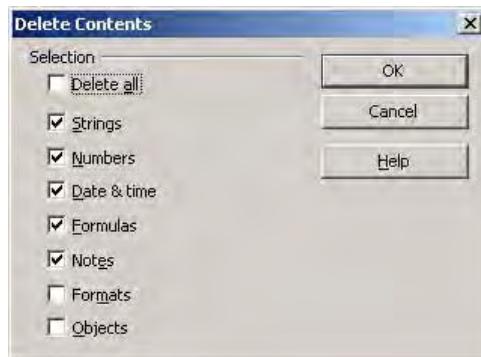


Fig 6.24 Deleting contents

Click on the **Delete all** check box and click **OK**. To delete all contents from the selected cell range, select **Delete Cells** from the same menu. A window appears as shown below. Select an option to specify how the sheets are displayed after deleting cells. **Shift cells up** fills the space produced by the deleted cells with the cells underneath it. **Shift cells left** fills the resulting space by the cells to the right of the deleted cells.

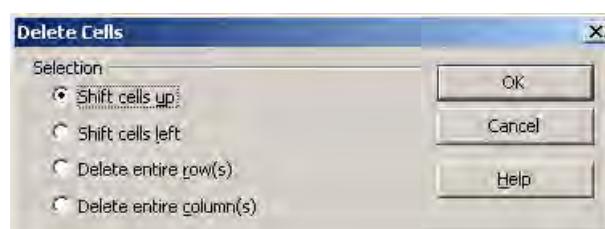


Fig 6.25 Deleting cells

If you want to delete an entire row or column, choose **Edit → Delete Cells**. The Delete Cells dialog box will display **Delete entire Row(s)** or **Delete entire Column(s)**. Clicking **Ok** will delete the row or column without prompting.

6.13 Inserting Pictures and Special characters

In the worksheet, StarOffice Calc also provides for inserting pictures and special characters like á, â. For inserting a picture or a special character in a worksheet follow the procedure given below:

- Place the cell pointer in any cell, say B2.
- Choose **Insert → Picture → From File**. The **Insert Picture** dialog box appears. In the **File name** combo box, you can type the path of the file that contains the picture or you can directly select the desired file from the gallery directory of StarOffice. After selecting the picture file click **Open**. For example, select **Apple** file from the gallery directory and click **Open**.

Now you will find a picture of an apple appearing in your worksheet as shown in figure 6.26.

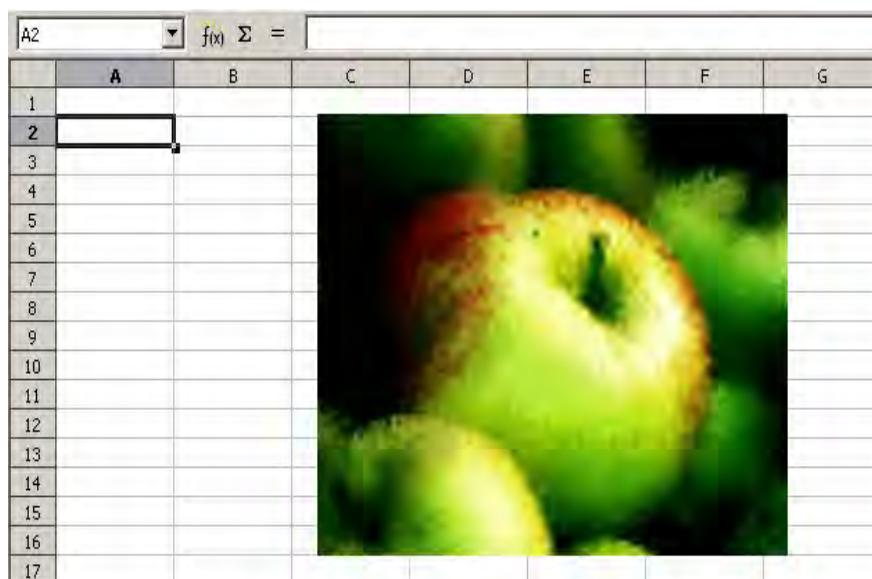
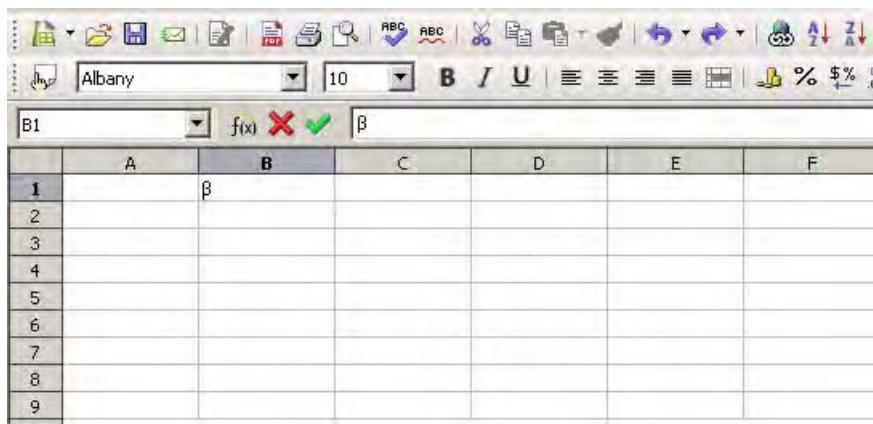


Fig 6.26 Worksheet with Apple Picture

- For inserting special characters, click the **Insert → Special characters** from the menu bar and select the desired special characters from the **Special Character** dialog box. For example, select **²** from the **Special Character** dialog box and click the **OK** button. The resultant output is shown in figure 6.27.



The screenshot shows a StarOffice Calc spreadsheet window. The title bar says "Albany". The toolbar includes various icons for file operations, cell selection, and data manipulation. The formula bar shows "B1". The main area is a grid with columns labeled A through F and rows labeled 1 through 9. Cell B1 contains the Greek letter beta (β). The rest of the cells are empty.

	A	B	C	D	E	F
1		β				
2						
3						
4						
5						
6						
7						
8						
9						

Fig 6.27 Worksheet with Special character

6.14 Drawing in a Spreadsheet

StarOffice Calc provides the facilities for drawing lines, circles, ellipse, square, rectangle, etc. within a worksheet. For this purpose, click the **Show Draw Functions icon** in the Standard toolbar. The

Draw Functions bar appears as  shown below:



Fig 6.28 Draw Functions toolbar

You can select any tool from this toolbar according to your requirement, following the procedure given below:

- Click on a tool. For example, to draw an ellipse in the worksheet, click the **Ellipse** tool. Keep the pointer (cursor) in the worksheet area at the desired location and drag it till you get the desired shape and size. The resultant screen is shown in the following figure.

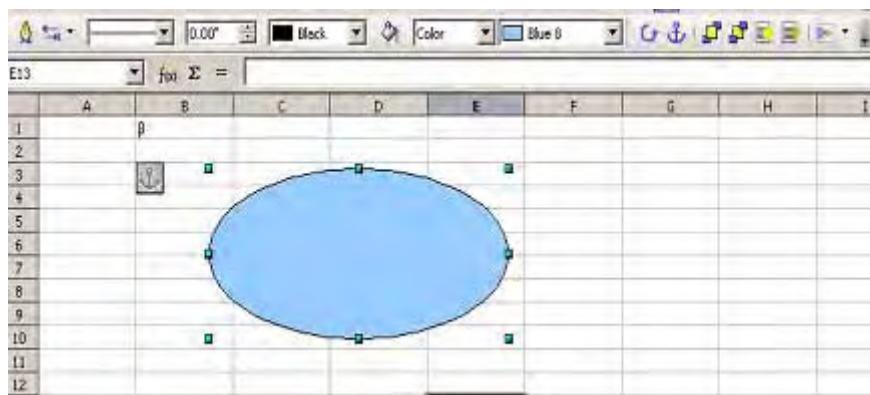


Fig 6.29 Worksheet with Ellipse drawn

6.15 Inserting Objects

StarOffice Calc provides tools for inserting objects like charts, images from image editor, formula, etc. in a worksheet. For this purpose, click on the **Insert Object** from **View → Toolbar**. A floating toolbar appears with the following icons in the order listed below:

1. Insert Chart Icon
2. Insert Formula Icon
3. Insert Floating Frame Icon
4. Insert Movie and Sound Icon
5. Insert OLE Object Icon
6. Insert Applet Icon



It is to be noted that some of the icons are used in very advanced applications that are beyond the scope of this book.

- **Insert Chart** Icon

This icon is used for presenting the data in the worksheet in form of charts of different kinds such as Bar Chart, Pie Chart, Lines, X-Y plot, etc. More details on charting are given in a later section.

- **Insert Formula** Icon

This icon is used for inserting a formula in the worksheet for performing calculations.

- **Insert Floating Frame** Icon

This icon provides to generate a scrolling screen within a worksheet.

- **Insert Movie and Sound** Icon

This icon is used to insert sound or video files into the current worksheet.

- **Insert OLE Object** Icon

This icon is used to insert objects from other application into a worksheet.

- **Insert Applet** Icon

This icon is used to import Applets written in Java programming language into the worksheet.

6.16 Working With Charts

One of the most popular features of StarOffice Calc software is the ability to generate charts based on numeric data. The purpose of chart is to visually present the data for easy understanding. To draw a chart, follow the procedure given below:

- Select the data you want to chart.
- Click on **Insert → Chart** or click on the **Insert Chart** icon as discussed earlier.
- The cursor becomes a + sign with a small picture of the graph. Place this cursor where you want to insert the chart and click. The **Autoformat Chart** window appears as shown in figure 6.30.

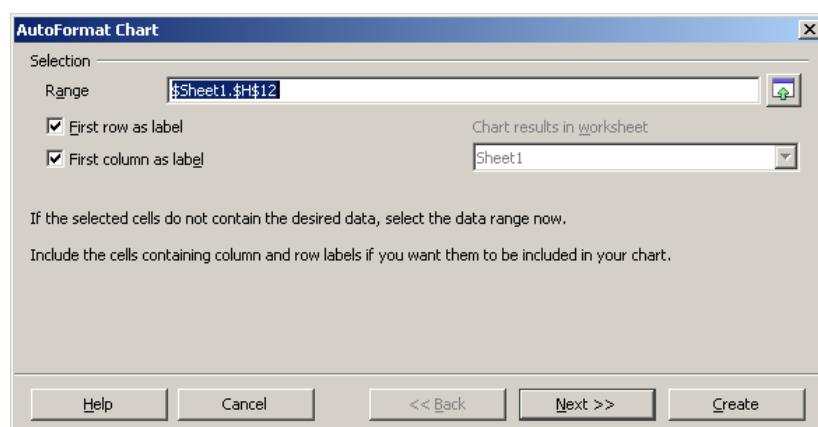


Fig 6.30 Autoformat Chart window

- It prompts you to enter the area in the worksheet to be charted. Enter the range as **C3 : F7** and click **Next**.

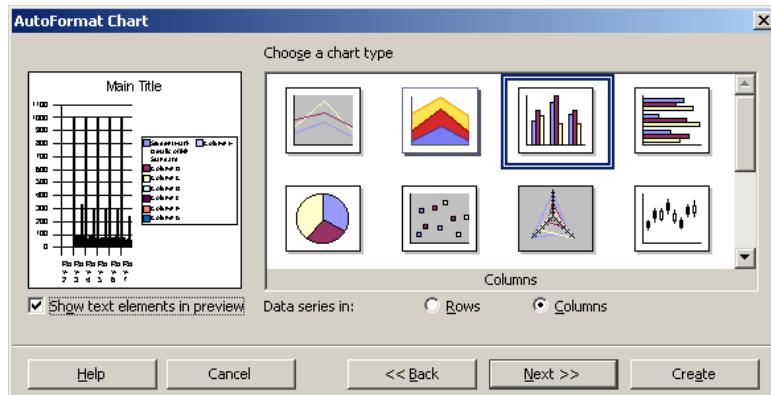


Fig 6.31 Types of chart

- The next window, which appears as shown in figure 6.31 displays the different types of charts that can be created along with a preview of each. Select the type of chart in which you want to present the data. The preview window shows the chart. Click on **Next**.

Note: Click the **Show text elements in preview** check box if it is not selected.

- For each type of the chart (say Pie, Bar, Column, etc.), there are different formats available. These formats are displayed in the next window (figure 6.32). A preview of each format is also displayed. Here, select the desired format. Click on **Next**.

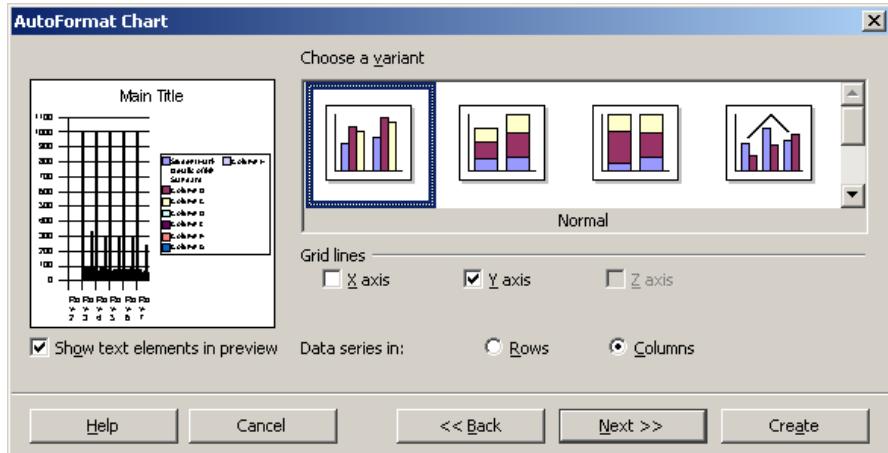


Fig 6.32 The different format of a chart type

- In the next window (figure 6.33), you have provisions to give a Title for the chart, Titles for X and Y axes and legends.

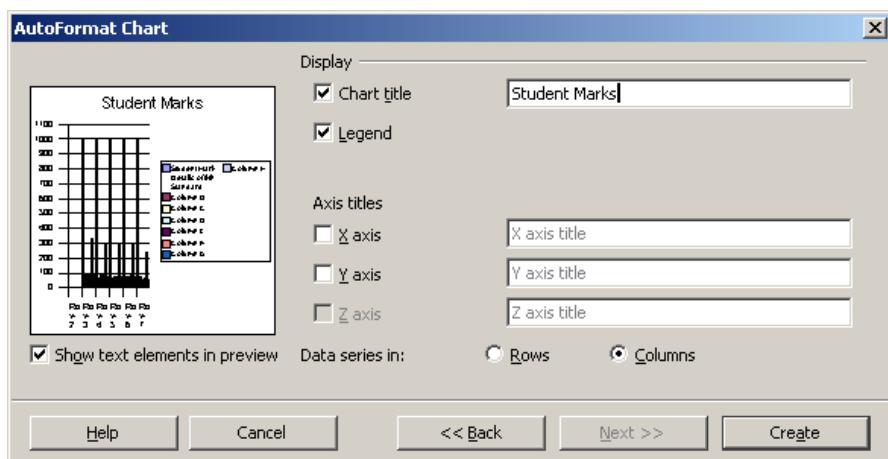


Fig 6.33 Adding titles and legends

- Click on **Create**. Now, your worksheet will look as shown below.

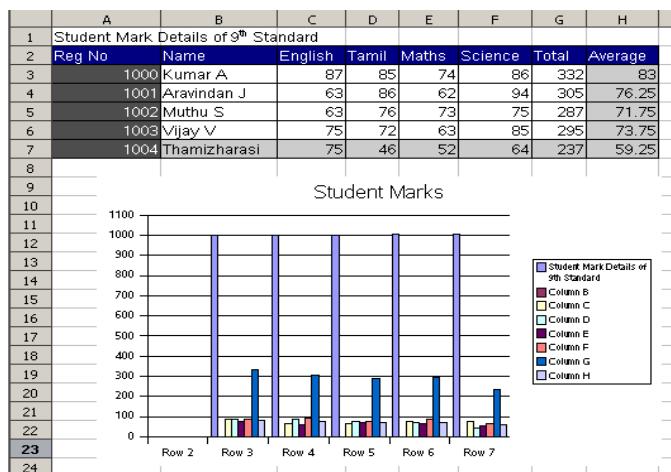


Fig 6.34 The Worksheet with the chart

Learn by Solving

Create a line chart to show the variations of mark secured by each student in different subjects.

6.17 Working with Multiple Sheets

In StarOffice Calc, a spreadsheet contains multiple sheets. Each sheet has its own name and a list of sheets appears as tabs at the bottom of the window. To select a different sheet, click the tab with the sheet's name. The tab of the selected sheet appears in white.

Each sheet of a spreadsheet can be used entirely independently of the other sheets. You can also make them dependent on each other by referring to the data in another sheet or using the data from another sheet in calculations.

For example, you can enter data in Sheet 1 and Sheet 2 and can do the calculations in Sheet 2. You can calculate the sum of the numbers in the cell A1 of Sheet 1 and A1 of Sheet 2 and store the result in A3 of Sheet 2. To do this, type the 3-D formula as = **SUM** (**Sheet 1.A1; Sheet 2.A1**)

Here is another example. Let the cells B4 and C4 in Sheet 1 have numbers 87 and 54 respectively (figure 6.35). Let the cells B4 and C4 in Sheet 2 have numbers 45 and 34 respectively.

	A	B	C	D
1				
2		87	54	
3				
4				
5				
6				
7				
8				

Fig 6.35 Worksheet with Values in Sheet 1

Now, let us add cell values B4 and C4 in the two sheets and store the total in cell D5 of Sheet 2. For this purpose, enter the 3D formula = **SUM** (**Sheet 1. B4: C4; Sheet 2. B4:C4**). In this formula, the: (colon) separating the cells of the same sheet adds up the values of B4 and C4 in that sheet and the; (Semi – colon) adds up the sums of B4 and C4 of Sheets 1 and 2.

D5	A	B	C	D
1				
2				
3				
4		45	34	
5				220
6				
7				

Fig 6.36 Worksheet with Values and Results in Sheet 2

6.18 Printing Worksheets

If you click the **Print** icon on the function bar (Standard toolbar), all the data in all the sheets of your document will be printed. You can also print a part of the worksheet. To do so, select the range to be printed and click on **Format → Print Ranges → Edit** and select the print range. Now, if you click on the **Print** icon, only the selected range will be printed. To remove the print range setting click on **Format → Print Ranges → Delete**.

The **Print** option under the **File** menu can be used to print the worksheet. The Print dialog box appears as shown in figure 6.37.

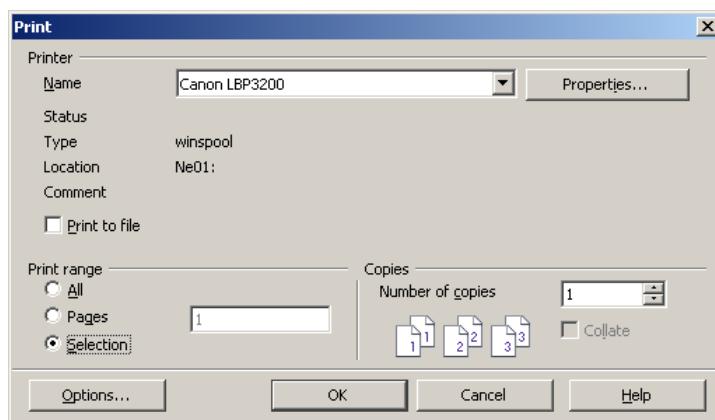


Fig 6.37 Print dialog box

In the **Print** dialog box, under **Print range** choose the option **All** to print all the sheets in the document. Select the option **Pages** to specify the pages, which are to be printed. The **Selection** option allows you to print only the selected area in a worksheet.

The **Page View** option on the **File** menu can be used to preview a worksheet before printing.

The above procedure will print the worksheet without grids. In order to print with the grids select the **Page** option from the **Format** menu. Click on the **Sheet** tab in the dialog box, which appears. Click the Grid check box to print the worksheet with gridlines.

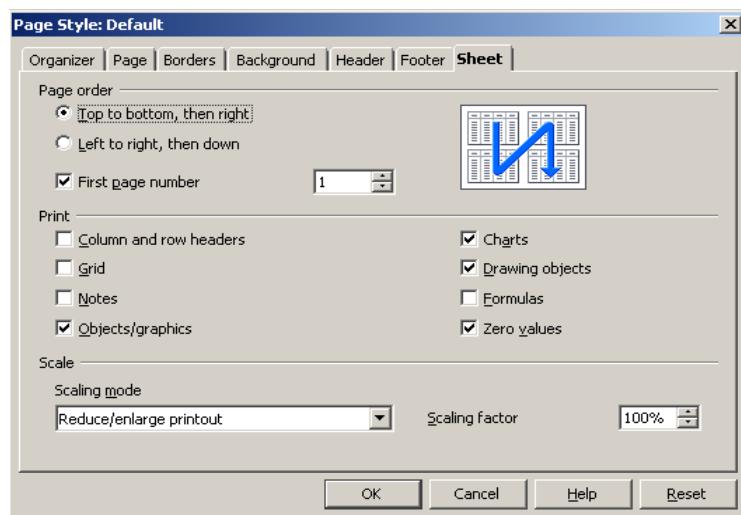


Fig 6.38 Page Styles Dialog Box

6.19 Database Functions in StarOffice Calc

Spreadsheets in StarOffice can be used to manage large amounts of data. You can sort this data, search for specific information, group information based on some criteria, calculate totals, and much more.

The next chapter of this book gives more details about Databases.

Summary

- A spreadsheet is a tool for working with numbers.
- A spreadsheet program is used to calculate and analyze sets of numbers.
 - A spreadsheet is divided into columns and rows. The intersection of row and a column is called a cell. A cell is referred to by its address – created by combining its column and row headings.
 - Cells can contain values, labels, or formulae.
 - A data file created with spreadsheet is called a worksheet.
- Creating a Worksheet
 - The process of creating a worksheet can involve organizing the data, entering data, creating formulae, editing, formatting, adding charts, analyzing data and printing the worksheet.
 - A formula lets you create a value in one cell that is calculated based on the values in other cells.
 - Formulae follow the order of mathematical operations: exponentiation, negation, multiplication and division, addition and subtraction.
 - Functions are built-in formulae. StarOffice Calc offers a wide variety of functions.
 - Creating a Worksheet References to cells can be relative or absolute.
 - Data in the worksheet can be formatted in bold, italics and underlined. The alignment, font, size and color of the contents of the cells can also be changed. Numbers can be formatted as currency, percents and displayed with or without decimals.
 - You can add pictures, special characters and your own drawings to the worksheet.

- You can insert movies, sounds, charts, floating frame, applets and OLE objects in worksheet.
- Charts are used to make data easier to understand.
- You can define which range of cells on a spreadsheet to print.
- Spreadsheets have database management capabilities including sorting, selecting and printing out reports.

Exercises:

I. Fill in the blanks

1. You can use a _____ to calculate and analyze sets of numbers.
2. Graphic representations of numbers are known as _____.
3. A(n) _____ refers to the file you create with spreadsheet software.
4. Non – numerical entries are called _____.
5. The _____ identifies the active cell.
6. The _____ is the sequence of characters used in a formula.
7. You can automatically perform specialized calculations using _____.
8. The two types of cell addressing are _____ and _____ addressing.
9. The _____ command is used to generate a series.
10. The combined cell column and row headings are known as the cell's _____.
11. _____ is used to insert objects from other application into a worksheet.
12. The _____ option on the file menu can be used to preview a worksheet before printing.

II. Answer the following

1. Define briefly a spreadsheet and describe its basic structure.
2. List and describe the other features available with spreadsheet software in addition to its ability to calculate numbers.
3. When entering a formula in a cell, does it matter in which order you enter the values and operators? Explain your answer.
4. Can we change the data present in a cell? If so, how?
5. How can you generate a series of values? Explain with an example.
6. What are functions? How can you use them in your worksheet? Explain with an example.
7. What must you include in a formula, to ensure that the formula will operate on a specific value, no matter where the formula might be moved or copied?
8. What is date arithmetic? Explain.
9. What spreadsheet feature allows you to represent data visually as a data – analysis tool?
10. Explain working with multiple sheets and printing worksheets?

CHAPTER 7

DATABASE

7.1 Introduction

We use computers for various applications. The applications may be scientific or data processing. Applications such as payroll, examination processing, banking, railway ticket reservation system, airlines reservation system, budget preparation, inventory control, etc., fall under the category of data processing. In this chapter, we will study about data processing in general and about working with a specific database package, namely, ‘StarOffice Base’.

7.2 Data and Information

7.2.1 Data

The term data comes from the word **datum**, which means a fact. The **data** is as fact about people, places or some entities. In computers, data is simply the value assigned to a variable. The term variable refers to the name of a memory location that can contain only one data at any point of time. For example, consider the following statements:

Vijay is 16 years old.

Vijay is in the 12th Std.

Vijay got 80% marks in Mathematics.

Let ‘name’, ‘age’, ‘class’, ‘marks’ and ‘subject’ be some defined variables. Now, let us assign a value to each of these variables from the above statements.

Name	=	Vijay
Class	=	12
Age	=	16
Marks	=	80
Subject	=	Mathematics

In the above example the values assigned to the five different variables are called data.

Consider another example give below:

Coimbatore is 500 kilometres away from Chennai.
Coimbatore is 1500 feet above sea level.

These are two facts about a place called Coimbatore. In this example name of the city, i.e. ‘Coimbatore’, the distance in km, ‘500’, the name of another place ‘Chennai’ and the height of the city in feet, i.e., ‘1500’ are data for the variables ‘city’, ‘distance’, ‘place’ and ‘height’ respectively.

The data can be of different types. The **Data types** can be Character, Number, or Boolean. The numeric data type can be integer, float, double precision, date, time, etc. The programming languages and packages provide their own **built-in** (system defined) **primitive data types** such as **integer** and **float**. But for many applications, such as, ‘supplier numbers’, ‘part names’, ‘city names’, ‘colours’, etc., the system defined primitive data types alone are not adequate. For such purposes, Database Systems provide a facility by which users can define their own more sophisticated data types as referred above, which are known as **user-defined data types**.

7.2.2 Information

We will now see what is information with respect to computers. Information is defined as a set of processed data that convey the relationship between data considered. Processing means to do some operations or computations on the data of different variables to relate them so that these data, when related, convey some meaning. Thus, information is as group of related data conveying some meaning. In the examples above, when the data of the variables ‘name’ and ‘age’ are related, we get the following information:

Vijay is 16 years old.

In the same example, when the data of the variables ‘name’ and ‘class’ are related we get another information as

Vijay is in the 12th standard.

Further, when we relate the data of the variables, ‘name’, ‘marks’, and ‘subject’, we get more information that ‘Vijay’ got 80% marks in mathematics.

Similarly, when the data ‘Coimbatore’, ‘Chennai’ and ‘500’ are related, it gives information that Coimbatore is 500 kms away from Chennai.

7.3 Data Processing

Let us consider the example of a mark list that a class teacher produces for his/her class. It contains the register numbers, student names, marks obtained in each subject by the students in the class and Pass/Fail status. This information is entered as data against the variable name ‘REG.NO.’, ‘NAME’, ‘ENG’, ‘MATHS’, ‘PHY’, ‘TAMIL’, ‘CHEM’, ‘COMP’ and ‘RESULT’ respectively in a table as shown in table 7.1.

Table 7.1 Marklist Table

Mark list of XI STD – A Section									
Reg. No.	Name	Tamil	Eng.	Maths	Phy.	Chem	Comp.	Pass/Fail	
1001	Anbu A	80	85	99	95	82	88	P	
1002	Aruna S	85	90	90	92	90	98	P	
1003	Balu S	35	56	95	75	70	80	F	
1004	Xavier D.	80	99	95	96	97	99	P	
1005	Banu M	75	80	56	50	60	70	P	
1006	Chandran M	40	32	58	45	26	70	F	
1007	Abdul Kader M	80	80	90	88	80	95	P	

To process this mark list of a class, the class teacher first collects the details such as register number and name of the students; their marks in different subjects from the concerned teachers of that class and the passing regulations form the school authorities. Then he/she prepares a consolidated mark list, as in table 7.1. He / she first checks the mark list for any possible mistake that would have occurred while entering the data. Then the class teacher requests the concerned subject teachers to verify and validate the data entered in the mark list against their subject. After confirming that the marks entered in the mark list are correct, the class teacher applies the passing norms and determines the Pass/ Fail status of each student. Then he / she enters the result in the mark list against each student. These entries are verified and finally put up to the Headmaster for approval. After the Headmaster approves the results, a separate list is prepared containing the register number of the students along with their Pass/Fail status as shown in table 7.2 and the results are displayed on the notice board.

Table 7.2 Result Table

Result of XI standard		
Reg. No.	Name of the Student	Result
1001	Anbu A	Pass
1002	Aruna S	Pass
1003	Balu S	Fail
1004	Xavier D.	Pass
1005	Banu M	Pass
1006	Chandran M	Fail
1007	Abdul Kader M.	Pass

What we discussed so far relates to the result processing of a class of students. This process is otherwise known as Data Processing. Data Processing may relate to any field of application.

As discussed in the above example, data processing involves Data Collection, Verification and Validation of data, and Report Generation. Until digital computers came into use, data processing had been carried out manually. Even now, many organizations do data processing manually.

In the above case we see that throughout the process, right from the preparation of the mark lists by the individual teachers, processing the mark lists, etc., till the results are declared, the work has been carried out by long-hand effort (or otherwise known as manual). Hence, this type of processing is called **Manual data processing**.

Instead of the manual approach, if the school uses a computer to,

- Prepare the mark lists,
- Store the data,
- Process the stored data for analyzing the results and
- Print the results in a desired format,

Then we call this type of data processing as **Computerised data processing**.

7.3.1 Disadvantages of Manual Data Processing

The manual data processing approach has the following disadvantages:

1. The efficiency and correctness of data processing are limited to the capabilities of the individual who is processing the data.
2. Manual methods take more time.
3. In general human beings are liable to make computational and parallax errors.
4. Manual data processing involves use of papers at each stage. Preservation and maintenance of large volume of paper records becomes difficult and unmanageable.
5. Implementation of corrections, changes and modifications are tedious in manual data processing.

7.3.2 Advantages of Computerised Data Processing

The following are some of the advantages of the computerized data processing system:

1. Once we collect and enter the data into a computer system, We can perform other operations with less manual labour. So, manpower is considerable saved.
2. Though it takes some time to develop, test and put the required computer programs to use, the processing speed is fast, reducing the processing time, in certain cases, from man-years and man-months to minutes and seconds.
3. The chances of errors are less in computerized data processing.
4. We can store large amount of the data and information in the computer storage medium, which is compact. Hence, we need not store bundles of paper records, thus saving space.
5. Today computer networks are so common that we can share data and resources from one computer system to the other at a very fast speed and with very little effort, as in the case of railway and airline reservation systems.
6. It is easy to edit the data including correction, changes and modifications.
7. Computerized database is highly effective for searching, sorting and merging files and for other data manipulation activities.

7.4 Database

A database is a repository of collections of related data or facts. It arranges them in a specific structure. For example, data such as “1001, Arul A., B.E. (CSE), Lecturer, Comp. Sc. & Engg. 27/01/97, 10000” in table 7.3 are all relevant to a staff database of an educational institution.

Similar to the Institution staff database, there can be different databases, like CSE Department Database, as in table 7.4, for different applications. For example, you may keep a list of addresses of your relatives and friends written down in an address book. This is a database of addresses.

Data in a database is most commonly viewed in one or more two-dimensional tables, each consisting of columns and rows. The entire collection or related data in one table is referred to as a **File** or a **Table**. Each row in a table represents a **Record**, which is a set of data for each database entry. Each table column represents a **Field**, which groups each piece or item of data among the records into specific categories or types of data.

Table 7.3 Staff Table

Institution Staff Database						
Emp. No.	Staff Name	Qualification	Designation	Department	Date of Joining	Monthly Salary (Rs.)
5001	Arul A.	B.E (CSE)	Lecturer	Comp. Sc. & Engg	Emp No	10000
5002	Aruna B.	M.E. (CSE)	Sr. Lecturer	-do-	18/06/98	15500
5003	Ezhil M.	M.Tech.	Sr. Lecturer	Elec.Comm. Engg.	10/05/99	15000
5004	Thiagu N	M.B.A	Lecturer	Dept of Management	19/03/96	10000
5005	Laura I.	M.E. (CSE)	Sr. Lecturer	Comp.Sc. & Engg	01/07/99	15000

Table 7.4 Staff Table

CSE Department						
Emp. No.	Staff Name	Qualification	Designation	Department	Date of Joining	Monthly Salary (Rs.)
5001	Arul A.	B.E (CSE)	Lecturer	Comp. Sc. & Engg.	27/01/97	10000
5002	Aruna B.	M.E. (CSE)	Sr. Lecturer	-do-	18/06/98	15500
5005	Laura I.	M.E. (CSE)	Sr. Lecturer	Comp. Sc. & Engg.	01/07/99	15000

7.4.1 Manipulation of a Database

We may manipulate the database in one or more of the following ways:

- Searching
- Sorting
- Merging
- Performing Calculations on data
- Filtering
- Editing the database
- Report Generation

❖ Searching

Searching is a process to select a desired specific data from a database. For instance, you want to select the student ranking first in a class with respect to the total marks or in individual subjects or you want to see the performance of a particular student. Searching is done using database commands on the relevant fields.

❖ **Sorting**

Sorting is the process of arranging the data in a table in some order. In the above example, we may arrange the list of staff – members in an alphabetical order or according to the seniority in position or date of joining or in any other order we like.

In the case of the student database, you may sort the passed students and failed students separately or you may sort the students in the ascending or descending order of their total marks, and so on.

❖ **Merging**

Merging is a process of joining data from two or more tables of the same or different databases. For example, in a student database, you may have mark lists for different classes. You want to prepare one table that shows all the first ranking students of each class. For this purpose, you can independently search in each table to select the first rank student from each class and merge all the names together in a single file/table.

❖ **Performing Calculations on data**

You may do any kind of arithmetic calculations on the data stored in the database. For example, to obtain the total marks of all the subjects of a student, you may add the marks in the concerned fields of the database and store them in a separate field.

❖ **Filtering**

There are times when viewing the entire table is unwieldy. Using a Filter is a way of limiting the information that appears on screen.

Filters are a feature for displaying and browsing a selected list or subset of records from a table. The visible records satisfy the

condition that the user sets. Those that do not satisfy the condition are hidden.

❖ **Editing the Database**

Editing is a process of performing corrections on the existing data, deleting the existing data, field(s), or record(s), adding new data, field(s), record(s) or changing the format of the database, and so on.

❖ **Report Generation**

You may generate any desired report, from the data of the database. For example, in the case of student database, you may generate a report of all the students who have scored marks less than the minimum marks required for a pass, and another report that gives the list of passed students, and so on.

7.4.2 Database Types

Based on the conceptual structures, the databases can be classified as follows:

1. Flat – File database
2. Relational database
3. Hierarchical database
4. Network database
5. Object-Oriented database

❖ **Flat – File Database**

A database file that consists of a single data table is a **Flat-file database**. Flat-file database can be quite useful for certain single-user or small-group situations, especially for maintaining lists such as address lists or inventories. Data that is stored, managed, and manipulated in spreadsheet is another example of a flat-file database.

Despite their simplicity, flat-file databases do have a significant limitation over databases consisting of multiple tables. They do not allow for more complex requests. This is fine if you merely need to locate a part or verify an address. However, very often you need to process more extensive information from multiple data tables which is not possible in flat-file databases.

❖ **Relational database**

A relational structure represents a database made up of a set of related tables. In a relational database, one or more common fields existing in two or more tables create a relationship between these tables. The common field or fields are called the **Keys**.

A **primary key** is a key that uniquely identifies a record in a database table. In relational databases, a primary key can consist of one or more fields. For instance, in table 7.3, Emp.No. is a primary key, since it uniquely identifies an employee record.

The relational database structure is the most prevalent database in today's business organizations.

❖ **Hierarchical database**

The hierarchical database structures were primarily used on Main Frame computers. In hierarchical databases, records are organized in a tree like structure by type. The relationship between record types is said to be a parent-child relationship, in which any child type relates only to a single parent type.

❖ **Network database**

The Network database is very similar to the hierarchical structure except that any one record type can relate to any number of other record types.

❖ **Object Oriented database**

An Object Oriented database is a newer structure that has been generating a great deal of interest in recent years. It represents very different approach to the way data is treated by database developers and users. The object oriented structure groups data items and their associated characteristics, attributes, and procedures into complex items called objects. Physically an object can be anything: a product, or event, such as a house, an appliance, an art piece, a customer complaint, or even a purchase. An object is defined by its characteristics, attributes and procedures. An object's characteristics can be text, sound, graphics, and video. Examples of attributes might be colour, size, style, quantity, and price. A procedure refers to the processing or handling that can be associated to the object.

7.5 Basis Concepts of Database Management Systems (DBMS)

A DMBS is a program, or collection of programs that allows any number of users to access data, modify it (if necessary), and construct simple and complex requests to obtain and work with selected records. The biggest asset of the DBMS is its ability to provide extremely quick access and retrieval from large databases. A DBMS, especially when it is running on powerful hardware, can find any speck of data in an enormous database in minutes – sometimes even seconds or fractions of a second. The data management tasks in a DBMS fall into one of the following three general categories.

1. Entering data into the database.
2. Reordering records in the database.
3. Obtaining subsets of the data.

DBMS also provide the means for multiple users to access and share data in the same database by way of networked computer systems.

7.6 Working with StarOffice Base

To work with StarOffice Base, open StarOffice Base. A window appears as shown below.

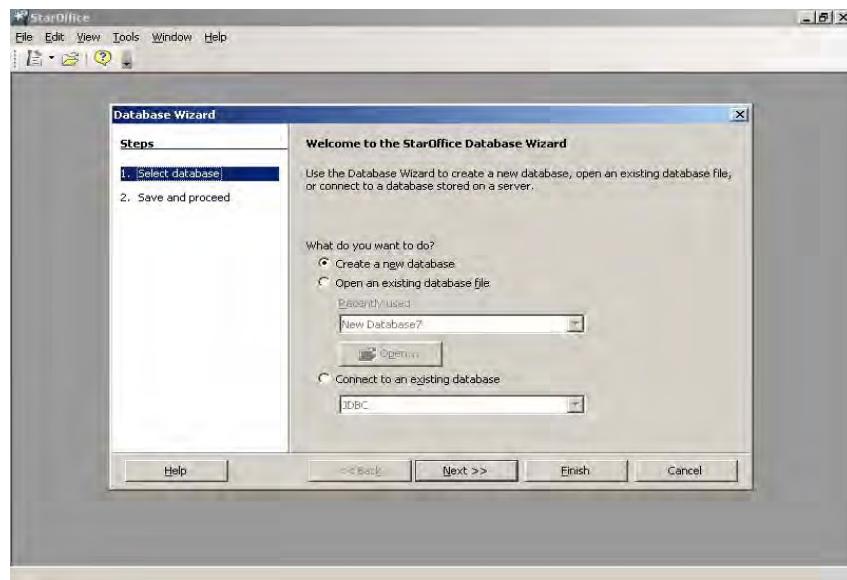


Fig 7.1 Opening Screen

Note :

- i) The StarOffice Base window on your computer may appear a little different if the StarOffice Base settings are different.

Now, let us see how to create database. To do this, open StarOffice Base or if a StarOffice window is open, click on **File → New → Database**. The **Database Wizard** dialog box appears on the screen as shown in figure 7.2.

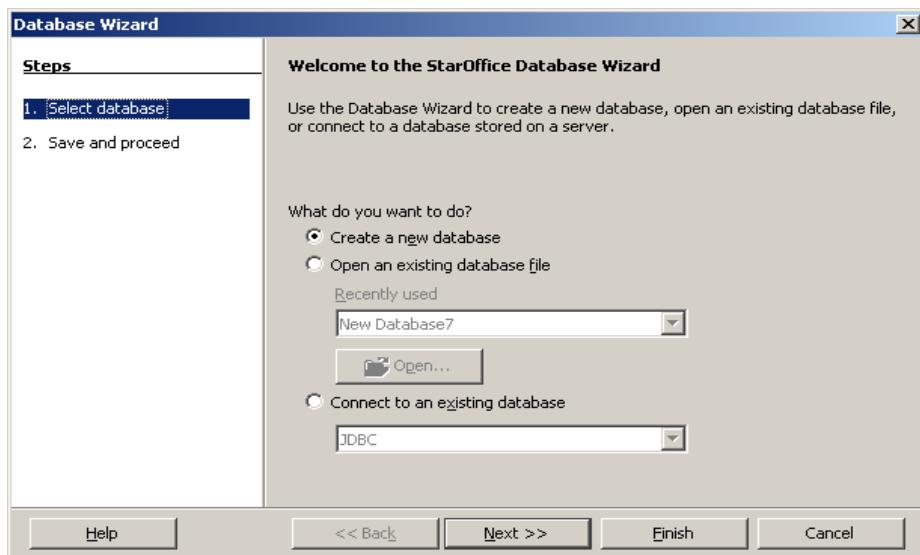


Fig 7.2 Properties of <Database> Screen

Select the '**Create a new Database**' option for creating a new database or select the '**Open an existing database file**' option for opening an existing database. Click **Finish**.

The **Save As** dialogue box appears prompting you to save the database created. Type the database file name in the **File name** text box. Click on **Save** to save the database file.

The screen shown in figure 7.3 appears.

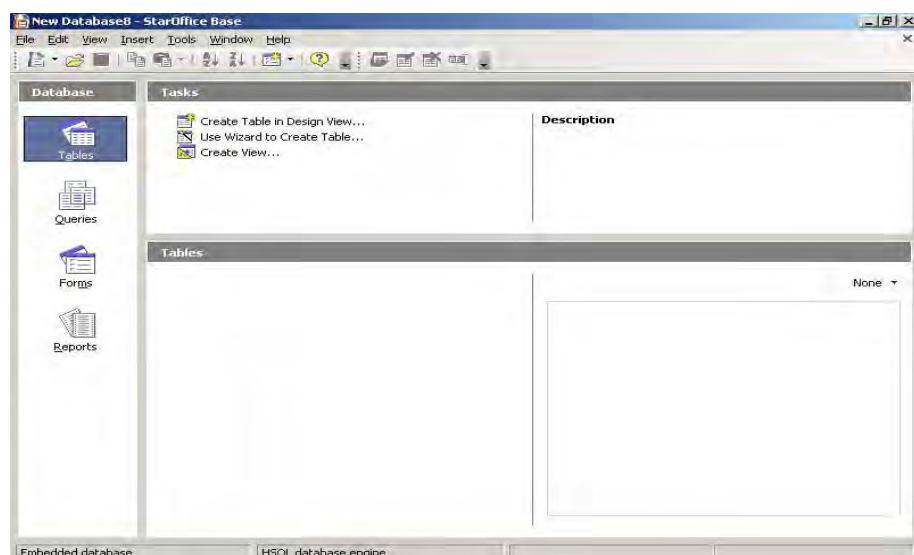


Fig 7.3 The Tables, Queries, Forms and Reports options can be used to work further with the database.

Note: that the left pane is the <Database> pane that displays **Tables**, **Queries**, **Forms** and **Reports**. And the pane on the right top is **Tasks** pane and the pane on the right bottom changes to **Tables**, **Queries**, **Forms** or **Reports** accordingly.

To work further with the database created, you can click on any of these options in the <Database> pane.

Learn by solving

Using the above procedure, create a Database named 'Student'.

7.6.1 Manipulation of the Database Created

As mentioned earlier, a database is a collection of related tables. Once the database is created, the next step would be to create the tables in that database and input data into them. Using these tables, StarOffice Base allows you to design forms, query the database and prepare reports. In the following sections, you will learn how to do all these.

7.6.1.1 Creating Tables

To create a new table, click on the **Table** icon in the **<Database>** pane and click on the '**Create Table in Design view**' in the **Tasks** pane or select **Table Design** from **Insert** menu as shown in the figure 7.4.

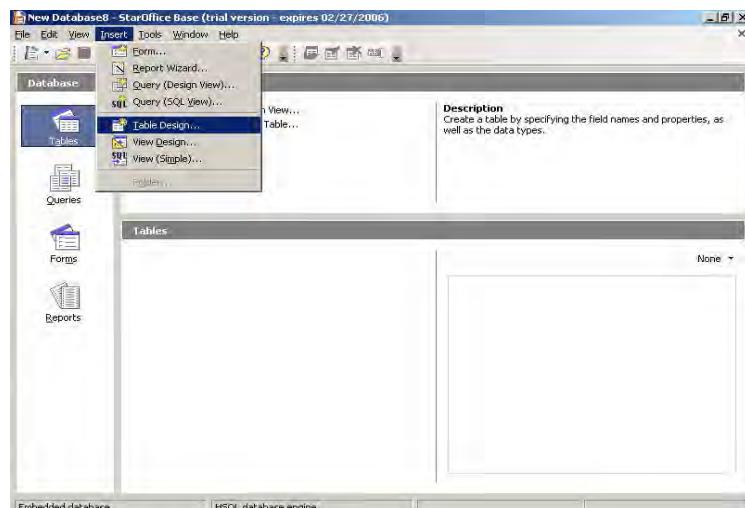


Fig 7.4 Creating a new table

A Table Design window as shown in figure 7.5 appears.

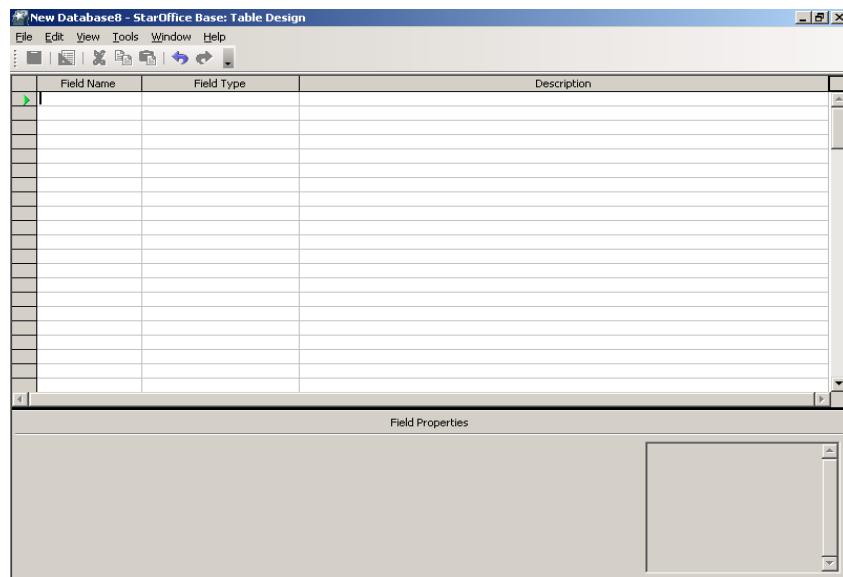


Fig 7.5 Table Design window

The next step would be to design the structure of the table. Designing the table means identifying the different fields that are to be included in the table, assign a field name and type to each of them. You can also give a brief description of the contents of the field. StarOffice Base allows you to use twenty different field types as given below:

1. Text [VARCHAR]
2. Text [VARCHAR_IGNORECASE]
3. Text (fix)
4. Number
5. Date / Time
6. Date
7. Time
8. Yes / No

- 9. Memo
- 10. Image
- 11. Decimal
- 12. Binary Field (Fixed)
- 13. Binary field
- 14. Integer
- 15. Tiny Integer
- 16. small Integer
- 17. Big Int
- 18. Float
- 19. Real
- 20. Double

Integer data type accepts only whole numbers. **Smallint** accepts small integer values up to a few thousands. ‘**Single**’ and ‘**Double**’ means floating point numbers with single and double precision. **Decimal** values are accurate up to a length of 7 places in the case of single precision and 14 places in the case of double precision.

To start with, the cursor is in the first column of the first field, the **Field Name**. Enter the field name. Press the **Tab** key to move to the next column, the **Field Type**. StarOffice Base displays a drop-down list box with the different field types. Select the type you want by clicking on it.

In the lower part of the window, the **Field Properties** pane is displayed. This pane allows you to further customize the field. It is important to note that different field properties are displayed for different field types.

For example, if the field type is **Text**, the following field properties will be displayed.

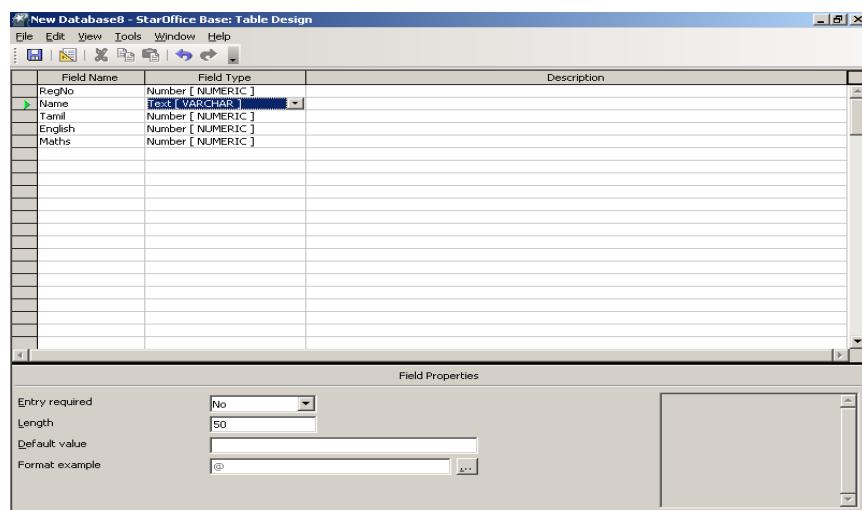


Fig 7.6 Field Properties for a Text field

The first option, **Entry required** is used to specify if the user should always enter a value for that field. The **Length** option is used to specify the maximum characters that can be entered in that field. The next option, **Default value** is used to specify a default value to be assigned to that field. The last option **Format Example** allows you to specify the number format and alignment of the text or number within the column.

If the field type is **Number**, the **Length** option in **Field Properties** determines the length of this field. **Decimal places** option, specify the number of decimal places permitted in this field. Other options Default value and Format Example are same like **Text**.

After specifying the Field Properties, you can press the **Tab** key to move the next column, **Description**. Here a brief description of the field can be entered. Pressing **Tab** will take you to the second field. Enter the details of the remaining fields in the same way.

The next task is to create a Primary key. A Primary Key is a field (or a combination of fields) in a table that uniquely identifies every record in the table. For example, RegNo in the Mark list example. Each RegNo will uniquely identify one student and no two students can have the same Reg.No. The primary key becomes very important when there are multiple tables, with common fields. Every table in StarOffice Base must have a primary key. To assign a primary key, in this case, RegNo, right click on the small triangle to the left of the field RegNo. A shortcut menu appears. Click on **Primary key**. A small yellow key appears to the left of RegNo, to mark it as the primary key.

After creating the structure of the table, you have to save the table with a name. To do so, either press **Ctrl + S** keys or go to the **File** menu and click on **Save**. Enter the name of the table in the dialog box which appears and click on **Save**.

The figure below shows a table design for the Mark list example discussed in Section 7.3 (table 7.1). Let us save it with the name **Marklist**.

The screenshot shows the StarOffice Base table design interface. At the top, there is a table structure with columns for Field Name, Field Type, and Description. The table contains the following data:

Field Name	Field Type	Description
RegNo	Number [NUMERIC]	Register number of the student
Name	Text [VARCHAR]	Name of the student
Tamil	Number [NUMERIC]	Marks in Tamil
English	Number [NUMERIC]	Marks in English
Maths	Number [NUMERIC]	Marks in Maths
Physics	Number [NUMERIC]	Marks in Physics
Chemistry	Number [NUMERIC]	Marks in Chemistry
ComputerScience	Number [NUMERIC]	Marks in Computer Science
Result	Text [VARCHAR]	Pass or Fail Status of the student

Below the table, a 'Field Properties' dialog is open for the 'RegNo' field. The properties are set as follows:

- Entry required: No
- Length: 50
- Decimal places: 0
- Default value: (empty)
- Format example: (empty)

Fig 7.7 Marklist table design

Learn by solving

Design an Employee Table for the data given below to experience the use of other field types such as, Date, Currency along with Text and Number.

Field Name	Type	Description
EmpNo	Number	Employee Number
StaffName	Text	Name
Qualification	Text	Qualification
Designation	Text	Designation
Department	Text	Department
D-of-Join	Date	Data of joining
MonSal	Currency	

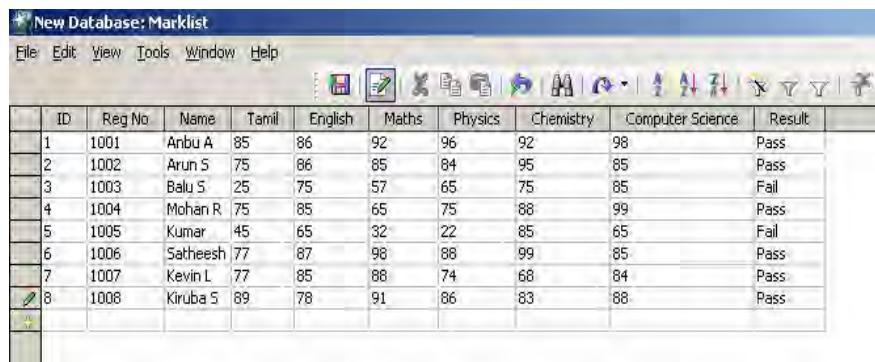
7.6.1.2 Entering the Data

Open the table **Marklist** on the **Table** pane by double clicking it or select the Marklist icon and then selecting the **Open Database Object** from the **Edit** menu. Now you can enter data into the table.

The cursor is on the first field of the first record. Now, simply type the data, pressing the **Tab** key to move from one field to the next.

Each field can only accept data corresponding to the specified field type. For example, it is not possible to enter text in a number field.

The **Marklist** table with some sample data is shown in figure 7.8.



A screenshot of the StarOffice Base application window titled "New Database: Marklist". The menu bar includes File, Edit, View, Tools, Window, and Help. The toolbar contains various icons for database management. The main area displays a table with the following data:

ID	Reg No	Name	Tamil	English	Maths	Physics	Chemistry	Computer Science	Result
1	1001	Anbu A	85	86	92	96	92	98	Pass
2	1002	Arun S	75	86	85	84	95	85	Pass
3	1003	Balu S	25	75	57	65	75	85	Fail
4	1004	Mohan R	75	85	65	75	88	99	Pass
5	1005	Kumar	45	65	32	22	85	65	Fail
6	1006	Satheesh	77	87	98	88	99	85	Pass
7	1007	Kevin L	77	85	88	74	68	84	Pass
8	1008	Kiruba S	89	78	91	86	83	88	Pass

Fig 7.8 Marklist table

7.6.1.3 Editing the Data

Editing may include changing a value of a field in a record, deleting a record or appending a record. In addition StarOffice Base also allows you to change the font type, font size and the height of the rows.

Editing the data that has been entered in a table is very simple. Just click on that field value and retype the new value. For example, to change the marks scored by Mohan R in English from 85 to 75. Click on the field English in the fourth record and type in the new value, 75.

To edit a record, first select the record by clicking on the record pointer. The record pointer is a small triangle on the left most column of the table. Right click on the record pointer of the selected record. A shortcut menu appears as shown in figure 7.9.

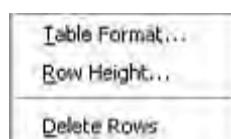


Fig 7.9 Submenu for editing

This menu can be used to delete the selected record, change the height of the selected record and also format the table.

If you click on the **Delete Rows** option, the selected record will be deleted. For example, to delete the record that gives the particulars of 'Abdul Kader D', select the record, right click on the record pointer and click on **Delete Rows**.

If you select the **Row Height** option, a dialogue box as shown below will appear.

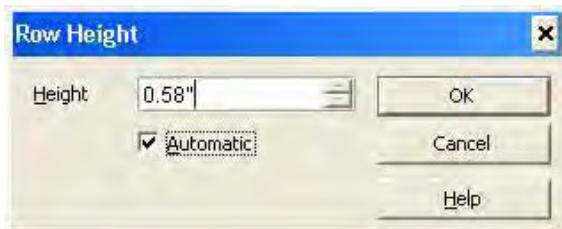


Fig 7.10 Dialogue box for setting height

Specify the height and click on **OK** button. You will see that the change is effected.

If you click on the **Table Format**, a dialog box appears as shown in figure 7.11.

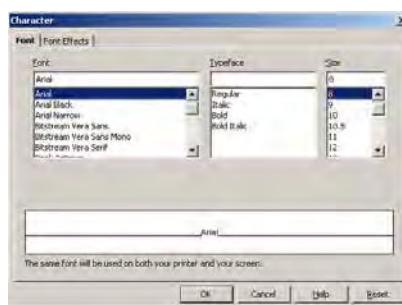


Fig 7.11 Table Format window

Using this dialog box, the font type, style, size, colour can be changed.

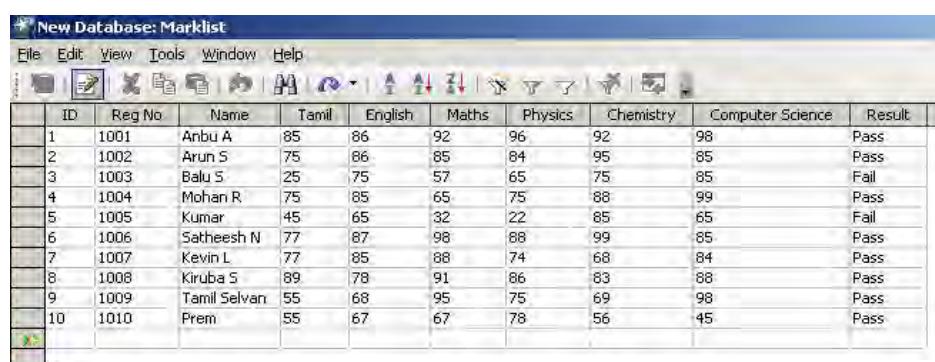
To append a record, enter the new record at the end of the table.
For example, append two records,

- i. Tamil selvan S. with marks in Tamil, English, Maths, Physics, Chemistry, Computer Science and result as 55, 68, 95, 75, 69, 98 and Pass
- ii. Arun S. with marks in the respective subjects 55, 67, 67, 78, 56, 45 and Pass.

To do so, place the cursor at the last row of the table and type in the new values. When you enter data into the last row, a new blank row is automatically appended. You can use this row to enter the data of the second new record.

After you have finished all the editing save the table by pressing **Ctrl + S** keys or by clicking on the **Save** icon.

The edited Marklist table is shown below.



A screenshot of the Microsoft Access application interface. The title bar reads "New Database: Marklist". The menu bar includes File, Edit, View, Tools, Window, and Help. Below the menu is a toolbar with various icons. A table is displayed in the main area, showing student ID, Reg No, Name, and marks for Tamil, English, Maths, Physics, Chemistry, Computer Science, and Result. The table has 11 rows, with the last row being a blank row for entering new data.

ID	Reg No	Name	Tamil	English	Maths	Physics	Chemistry	Computer Science	Result
1	1001	Anbu A	85	86	92	96	92	98	Pass
2	1002	Arun S	75	86	85	84	95	85	Pass
3	1003	Balu S	25	75	57	65	75	85	Fail
4	1004	Mohan R	75	85	65	75	88	99	Pass
5	1005	Kumar	45	65	32	22	85	65	Fail
6	1006	Satheesh N	77	87	98	88	99	85	Pass
7	1007	Kevin L	77	85	88	74	68	84	Pass
8	1008	Kiruba S	89	78	91	86	83	88	Pass
9	1009	Tamil Selvan	55	68	95	75	69	98	Pass
10	1010	Prem	55	67	67	78	56	45	Pass

Fig 7.12 Edited Marklist table

7.6.1.4 Viewing and Modifying the Table Design

To view or modify the design of an existing table, click the **Tables** from the <Database> pane. Select the table to be modified and right-click on it. Select **Edit** from the submenu that appears. A window with the existing table design appears. Here, you can change the field name, type, and properties, add or delete existing fields and so on. After completing the changes in the design, save the modified table to effect the changes.

Learn by solving

Modify the **Marklist** table with the following changes:

1. Change the marks of the subjects Tamil and English into a text field. Replace the existing data with grades according to the grading scheme given below:

Mark Range	Grade
96-100	H
90-95	A+
80-89	A
70-79	B+
60-69	B
50-59	C+
40-49	C
< 40	F

2. Add a new text field called **Comments** and enter comments such as ‘outstanding’, ‘excellent’, ‘good’, ‘fair’, and ‘poor’, for the grades ‘A+ and H’, ‘B+’ and A’, ‘C+ and B’, ‘C’ and ‘F’ respectively.
-

7.6.1.5 Sorting the Records

Once the records have been entered into the table, Star Base allows you to rearrange them by sorting them. You can sort the records in ascending or descending orders based on any field in the table. This can be done as follows.

1. Open the table that you want to sort.
2. Select the field you want to sort by clicking on the field name at the top of the table. Note that the entire column becomes highlighted. Then click on the **Sort Ascending** icon. The records in the table are displayed in the ascending order of the specified field.

3. To sort the records in the descending order, select the field and click on the **Sort Descending** icon.


Multiple sorting means sorting on more than one field of a table at the same time. For example, consider the Marklist table shown in figure 7.12. Let us assume that we would like to sort the records in the ascending order of names. This can be done as follows:

1. Click on the **Sort** icon. The dialog box as shown in figure 7.13 will appear.

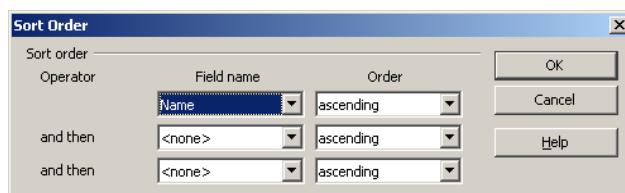



Fig 7.13 Sort Order window

2. Specify the fields you want to sort on by selecting them from the **Field name** drop-down list boxes. For each field specify the order in which you want to sort, in the **Order** drop-down list box. Click **OK** after you finish. The records will be displayed in the sorted order.

To display the records in the original order, click on the **Remove**

Filter/Sort icon.



Learn by solving

Sort the **Marklist** table on the filed **Name** alphabetically and on **Reg No** in the ascending order of the register numbers.

7.6.2 Querying a Database

Every DBMS supports a language that is similar to a programming language. This language, called the **Structured Query Language (SQL)**, is designed specifically for communicating with a database using statements that are closer to English than to programming languages. You can do the following using a query language:

- Search the database to locate records
- Establish relationships or links between tables to update records.
- List a subset of records.
- Perform calculations.
- Delete obsolete records
- Perform other data management tasks.

Queries are special views of the data in a table. Unlike sort, the output from a query does not affect the original table. The result from a query is always stored separately and can be viewed at any time.

To create a query in StarOffice Base, right click on **Queries** in the <Database> pane.

On the **Tasks** pane ‘**Create Query in Design view**’, ‘**Use wizard to Create Query**’, ‘**Create Query in SQL view**’ options appears.

Click on ‘**Use wizard to Create Query**’ option. The Query wizard appears as shown below.

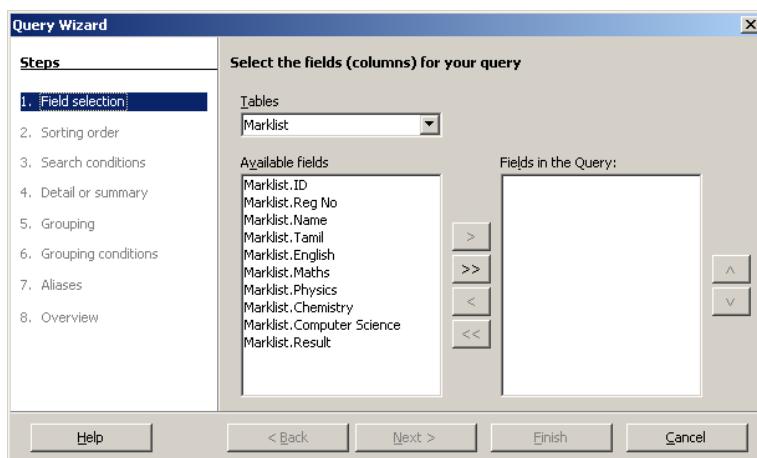


Fig 7.14 Query Wizard

From the **Tables** combo box, which contains the list of available tables, select the table on which you want to create the query. Automatically, the list of fields available in the selected table appears in the **Available fields** text area.

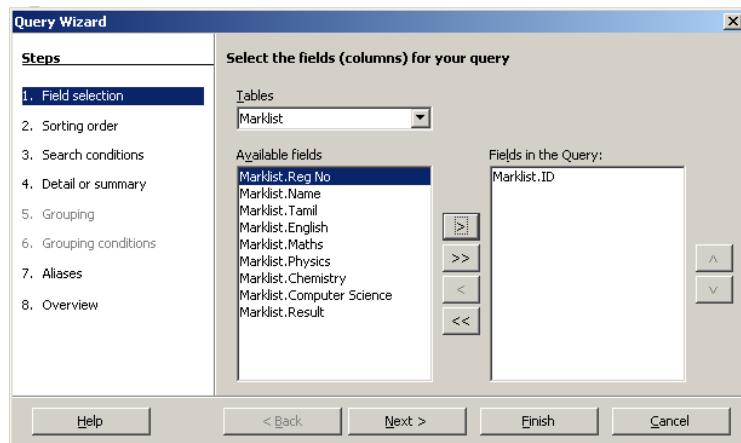


Fig 7.15 Field Selection window

To select the fields to be included in the query, click on the field in the **Available fields** Text area and then click on the **>** button. To select all the fields at the same time, click on the **>>** button and click on the **Next** button. The following screen appears.

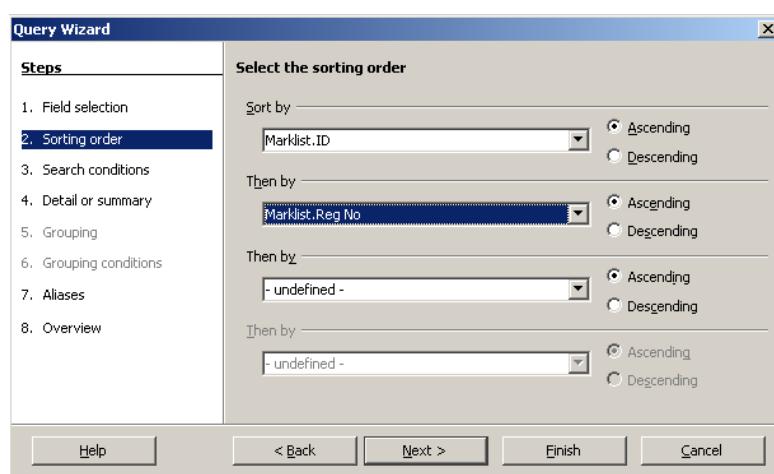


Fig 7.16 Sort Order window

This window allows you to specify four fields on which the results should be sorted. The radio buttons on the right allow you to specify if the sort should be in the ascending order or in the descending order. It is not necessary to specify a sort order; you can simply click on the **Next** button if you do not wish to sort the result of the query, but the '**Ascending**' radio button is selected by default and click on the **Next** button. The following screen appears.

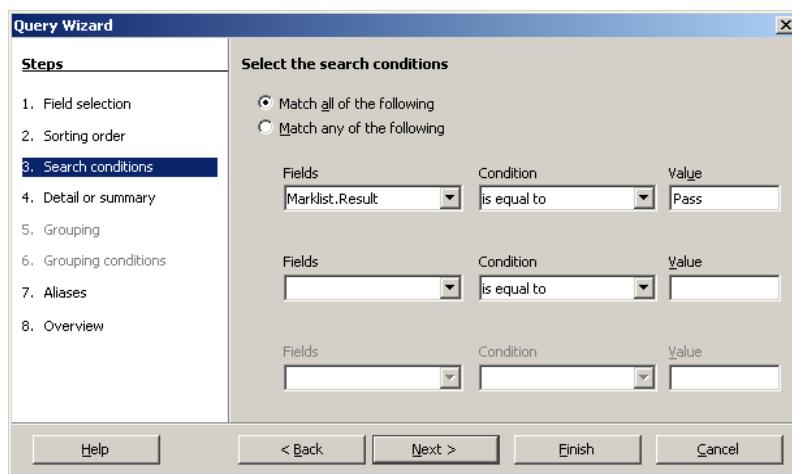


Fig 7.17 Search Conditions window

This window is used to specify the fields and the conditions on which the query should be based.

For example, suppose you want to list the students whose **Result** is 'Pass", you have to select the **Result** field in the first **Fields** combo box, then select '**is equal to**' sign in the **Condition** box and then type **Pass** in the **Value** box. Click **Finish** button. A new window appears with the records in which the field **Result** has the value **pass**.

If you want to display the records that satisfy any one of the search criterion then select '**Match any of the following**' or select '**Match all of the following**' to display records that satisfy all the search criterion.

This is an example with a very simple query. You can also create queries by using other relation operators ($<>$, $<$, \leq , \geq , $=$) in the **Condition** box.

Click on the Next button, **Query wizard - Detail or Summary** appears. This specifies whether to display all records of the query, or only the results of aggregate functions. This screen is only displayed when there are numerical fields in the query that allow the use of aggregate functions.

Click on the Next button, the **Aliases** window of the **Query wizard** appears. This window allows you to provide the alias names for the fields. In the Aliases text boxes fill the alias names for the corresponding field names. Click on the **Next** button, the Overview window of the Query window appears as shown in the figure 7.18

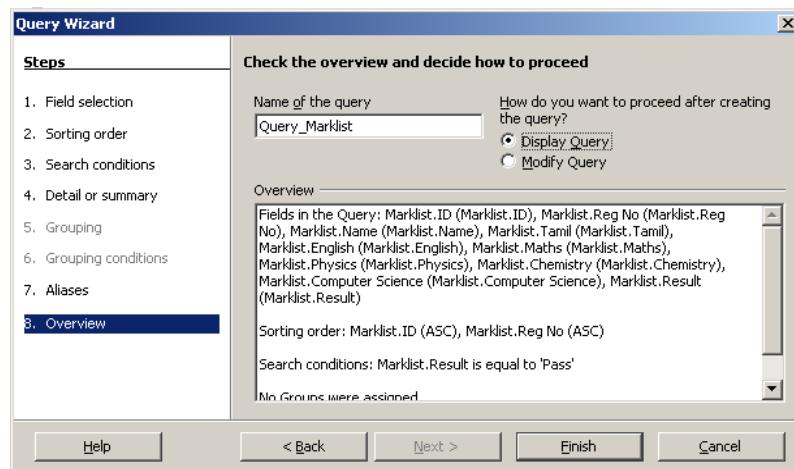


Fig 7.18 Create query window

This window allows you to specify a name for the query. Selecting the **Display Query** radio button will execute the query immediately and the **Modify Query** option will allow you to modify the query, where you can change the sort order, Alias name, etc.

You can create any number of queries for a given table. Once the queries are created and saved, you can execute them whenever you want. To do so, double click one of the **Query** icons from the list of all the stored queries that appears in the **Queries** pane.

7.6.2.1 Filters

A filter is also a type of query. It is also used to select and display records, which match a certain condition. The remaining records are hidden from the user. The difference between query and filters is that queries can be saved for later use. StarOffice Base allows you to use two types of filters. They are **AutoFilter** and **StandardFilter**.

AutoFilter

The **AutoFilter**  icon is available on the toolbar. Click on this icon to display only the records, which match the value of the current field.

StandardFilter

Filter used with a condition called Default Filter. The condition can be specified by clicking on the **StandardFilter**  icon on the toolbar.



Fig 7.19 Filter Window

The **Filter** window is very similar to the one used for specifying conditions in a query.

Here is an example to help you understand better. Suppose you want to list all the records where the marks scored by the students in Maths is greater than 90. To do so, follow the steps given below:

1. Open an existing query form the **Queries** pane by double clicking on it. For example Query_Marklist.
2. Click the **Standard Filter** icon from the main toolbar. A **Filter** window will appear.
3. Select **Maths** in the Field name box.
4. Select **>** operator in the Condition box.
5. Type 90 in the Value box.
6. Click on OK.

The following figure shows the filtered records.

ID	Reg No	Name	Tamil	English	Maths	Physics	Chemistry	Computer Science	Result
1	1001	Anbu A	85	86	92	96	92	98	Pass
8	1008	Kiruba S	89	78	91	86	83	88	Pass
6	1006	Satheesh N	77	87	98	88	99	85	Pass
9	1009	Tamil Selvan	55	68	95	75	69	98	Pass

Fig 7.20 Filtered Records

To remove the filter, click on the **Remove Filter / Sort** icon. The original table, with all the records is displayed.



7.6.3 Form Designing

Although the display of data in columns and rows can be suitable for viewing records and performing small data-editing tasks, it is not as convenient for other data management tasks. For example, consider a table has so many fields that they cannot be displayed in a window. In such cases, while entering data, you have to use the scroll bars to see fields that are not displayed. This can be particularly inconvenient if a large amount of data has to be entered.

Such situations can be handled more conveniently with a customized form. A form in Star Base is just like the forms you fill up at the railway station, to get admission in a college and so on. A form is simply a screen that displays the fields of a record in a well-spaced out manner. The appearance of a form can be customized to your liking. A form can be associated with a single table or with multiple tables. A sample form based on the Marklist table is shown in figure 7.21.

A screenshot of a form in Star Base. The form displays a record from a table. The fields and their values are: Reg No (1001), Name (Anbu A), Tamil (85), English (86), Maths (92), Physics (96), Chemistry (92), Computer Science (98), and Result (Pass). The background of the form is orange. At the bottom, there is a toolbar with various icons for navigation and data manipulation, including an 'AutoFilter' button.

Fig. 7.21 Form based on the Marklist table

Designing a form using the Auto Pilot option is very similar to creating a query using Autopilot. To design a form in Star Base, follow the procedure given below:

1. Select **Form** icon from the <Database> pane and then select '**Use Wizard to Create Form**'. A window, very similar to the one shown in figure 7.15, appears containing a list of the available tables and queries.
2. Select the table or query for which the form is to be designed. The field names of the selected table or query are displayed in the '**Available fields**' text area.
3. Select the field names that you would like to include in the form using the > or >> button and then click the **Next** button.
4. Next, StarOffice Base displays '**Set up a subform**' window. Select the '**Add Subform**' checkbox, if you want to insert another form within this form else click **Next**. The following window appears.

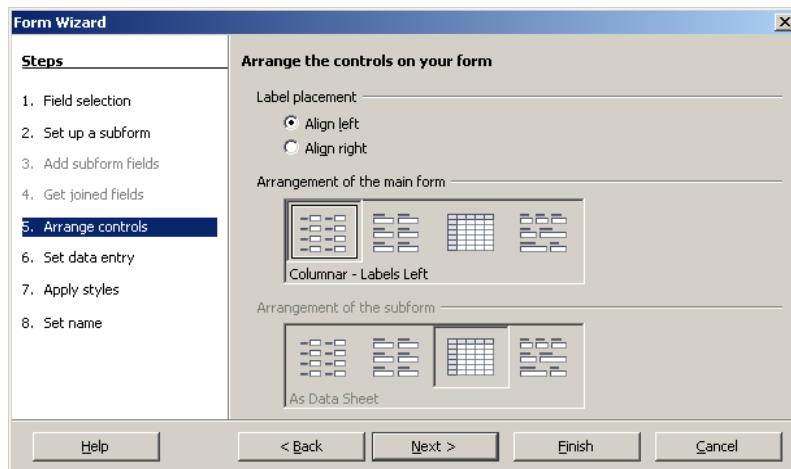


Fig. 7.22 Form Wizard window

Here you can choose a style for displaying the fields in the form. The **Style** icons show you how the form will look if it is selected. Click on the **Style** icon and click on the **Next** button.

5. The next window (figure 7.23) is for selecting the data entry mode. Click on the radio button to choose whether the form is to be used only for entering new data or to be used for displaying all data.

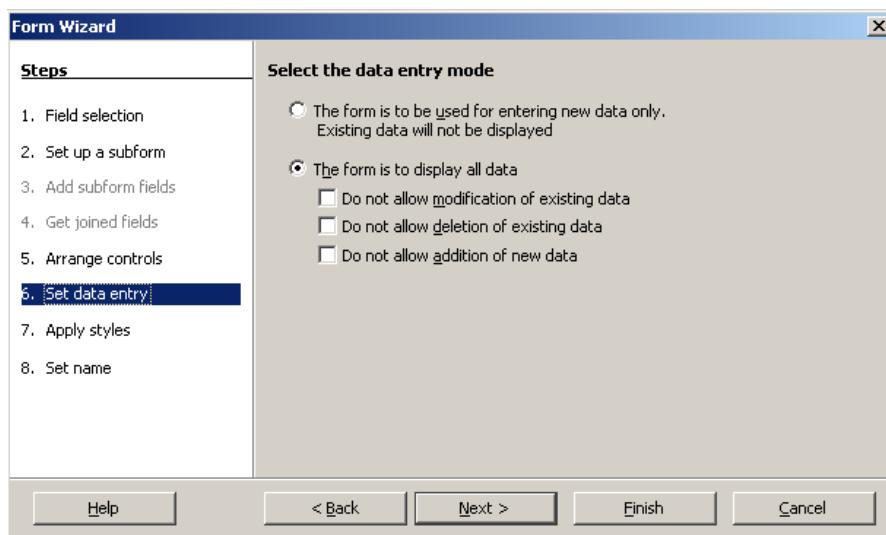


Fig. 7.23 Data Entry Mode window

6. The next window (figure 7.24) **Form Wizard – Apply Styles** specifies the form style. The page style decides the font attributes like font type, size color and background of the text in the form. The **Field border** specifies the field border style for the form.

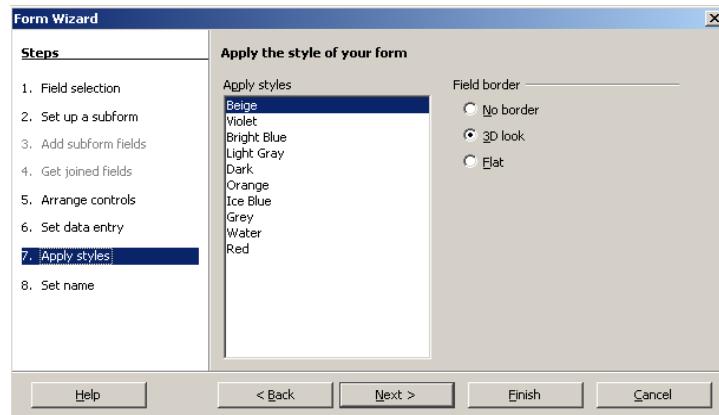


Fig. 7.24 Styles window

7. Next, **Set the name of the form** window appears (figure 7.25) asking for a name for the form. The user can save the form, and open it as a form document to enter and display data using Work with the form option or opens it in edit mode to change the layout using Modify the form option. Type the name of the form and click the Finish button.

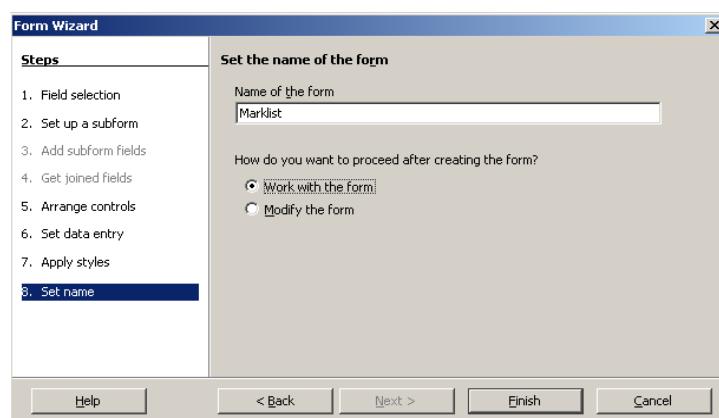


Fig. 7.25 Set the name of the form window

Once a form is created, you can use to view, add, delete, and / or edit the records in the table. You can create any number of forms for a given table or a query. Once the form has been saved, you can use it by clicking on the **Form** icon in the **Forms** tab. Select the form you want to use by double clicking on it.

Learn by solving

Using the Marklist table, design a form to view the marks scored by a student only in the science subjects such as, Maths, Physics and Chemistry.

7.6.4 Generating Reports

A report is printed information that is assembled by gathering data based on user supplied criteria.

Reports can range from simple list of records to customized formats for specific purposes. Report generators can use selected data and criteria to carry out automated mathematical calculations as the output is being printed. In fact, report generators in most DBMSs create reports from queries.

Creating a report in StarOffice Base is very similar to creating a query or a form. To create a report, right click on **Reports** in the <Database> pane. Then click '**Use Wizard to Create Report**'. **Report wizard** appears as shown in figure 7.25.



Fig. 7.26 Report Wizard

As in the case of form, this window displays a list of available tables and queries. Select the table or query you want. A list of fields from the selected table or query appears on the screen (figure 7.26). Select the fields to be included in the report by using the > or >> buttons and click on the **Next** button.

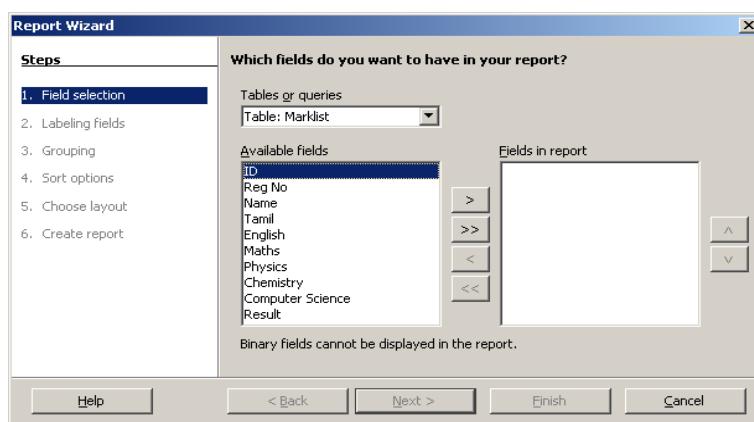


Fig.7.27 Fields Selection Screen

Next, a **Labeling fields** window appears with the field and Label. Modify the labels for the corresponding fields, if you want. Click on the **Next** button.

The **Grouping** window is displayed as shown in the figure 7.27. This window is used to specify the fields based on which the records can be grouped together.

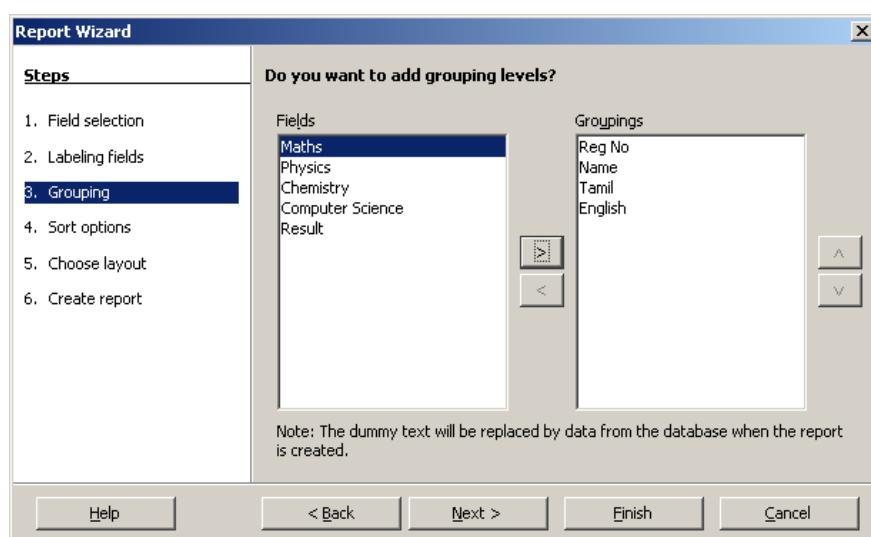


Fig. 7.28 Report Wizard - Grouping window

Note: It is not essential to specify a group field.

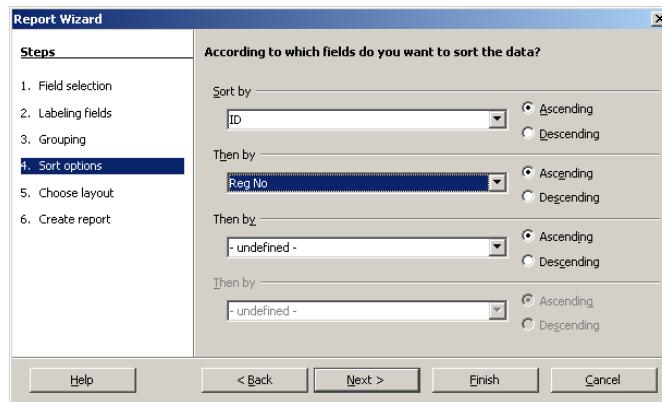


Fig. 7.29 Sort Options windows

The **Grouping** window is followed by the **Sort Options** window (figure 7.29). Here the sort criteria, if any, can be specified.

The **Choose Layout** window as shown in figure 7.30 is displayed, here you can customize the report by selecting the **Layout of Data**, **Layout of Headers and Footers** and **Orientation** options for the report.

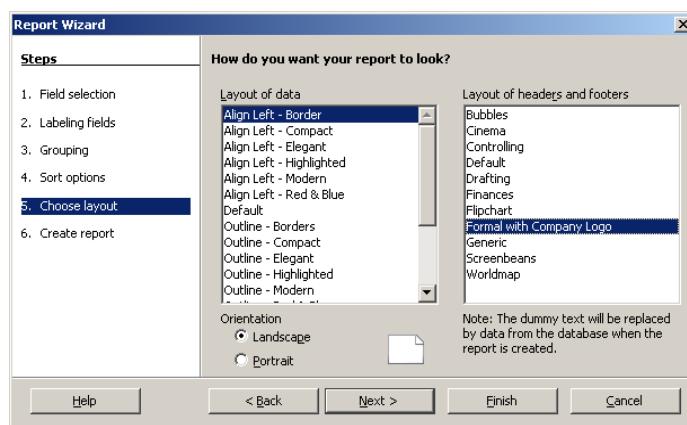


Fig. 7.30 Choose Layout window

The **Report Wizard** window (figure 7.30), which is displayed, next, allows you to choose **Static** or **Dynamic** Report.

The user also has the choice of either using the Report immediately or Modifying the Report Layout. Enter the title for the report and click the **Finish** button to view the report.

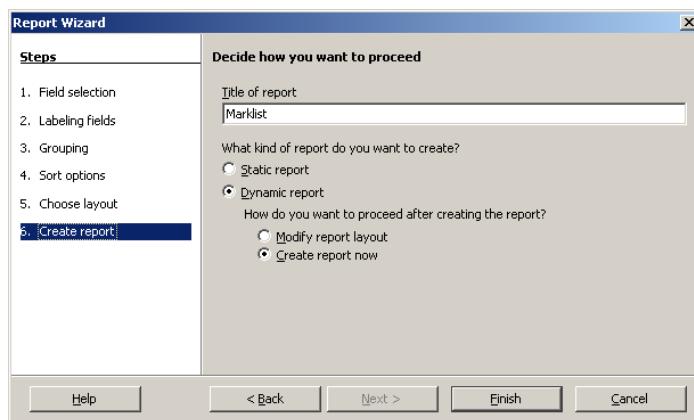


Fig. 7.31 Create Report Window

You can create and store multiple reports for a table or a query. You can use a stored report in the same way as you used in stored form or query. Click on the **Reports** in the **Database Pane** and double click on the **Report Name** in the **Reports pane** of your choice.

Learn by solving

1. Create a report showing all the records of the Marklist table.
 2. Generates a report showing all those students who have scored grades A and above in Tamil. (Create a query first and then create the report)
-

7.7 Integrating with Office Automation Applications

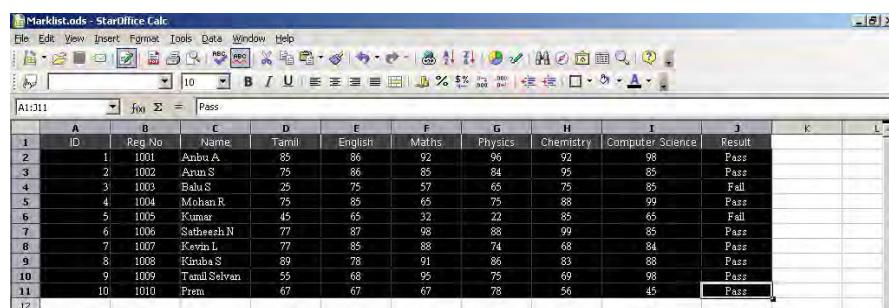
StarOffice applications are tightly integrated so that you can easily use the contents of one application in another application. The following sections provide a few examples of how you can take advantage of this integration.

7.7.1 Insert a Calc Cell Range into a Text Document

You can insert a range of Calc cells into a Writer document so that the data automatically updates when you modify the spreadsheet.

1. Open a StarOffice Writer (text) document
2. Open a StarOffice Calc (spreadsheet) that contains the data.
3. In the spreadsheet, select the cell range that you want to display as a table in the text document.

The selected cell range of spreadsheet is shown in figure 7.32



A screenshot of the StarOffice Calc application window titled "Marklist.ods - StarOffice Calc". The menu bar includes File, Edit, View, Insert, Format, Tools, Data, Window, and Help. The toolbar has various icons for file operations, cell selection, and data manipulation. The spreadsheet area shows a table with 11 rows and 11 columns, labeled A through K and 1 through 11. The range A1:J11 is selected, indicated by a light blue background. The table contains student marks for subjects like Tamil, English, Maths, Physics, Chemistry, and Computer Science, along with a Result column indicating Pass or Fail.

ID	Reg No	Name	Tamil	English	Maths	Physics	Chemistry	Computer Science	Result	
1	1001	Anbu A	85	86	92	96	92	98	Pass	
2	1002	Annu S	75	86	85	84	95	85	Pass	
3	1003	Balu S	25	75	57	65	75	85	Fail	
4	1004	Mohan R	75	85	65	75	88	99	Pass	
5	1005	Kumar	45	65	32	22	85	65	Fail	
6	1006	Sethreesh N	77	87	98	88	99	85	Pass	
7	1007	Kevin L	77	85	88	74	68	84	Pass	
8	1008	Kindra S	89	78	91	86	83	88	Pass	
9	1009	TamilSelvan	55	68	95	75	69	98	Pass	
10	1010	Prem	67	67	67	78	56	45	Pass	
11										
12										

Fig 7.32 Selected cell range in spreadsheet

4. Choose **Edit → Copy**.
5. In the text document, choose **Edit → Paste special**.
6. In the Paste Special dialog, select **DDE link**, and then click **OK**.

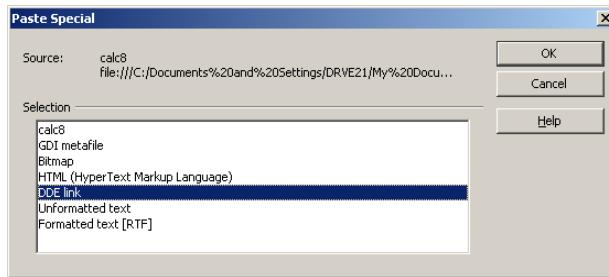


Fig 7.33 Paste Special dialog box

7. Click Ok. The copied cell range will now be displayed in the text document as shown below.

A screenshot of a Microsoft Word document titled 'Untitled - StarOffice Writer'. The document contains a table with 10 rows of student data. The columns are labeled: ID, Reg No, Name, Tamil, English, Maths, Physics, Chemistry, Computer Science, and Result. The data is as follows:

ID	Reg No	Name	Tamil	English	Maths	Physics	Chemistry	Computer Science	Result
1	1001	Anbu A	85	86	92	96	92	98	Pass
2	1002	Arun S	75	86	85	84	95	85	Pass
3	1003	Balu S	25	75	57	65	75	85	Fail
4	1004	Mohan R	75	85	65	75	88	99	Pass
5	1005	Kumar	45	65	32	22	85	65	Fail
6	1006	Saheesh N	77	87	98	88	99	85	Pass
7	1007	Kevin L	77	85	88	74	68	84	Pass
8	1008	Kimba S	89	78	91	86	83	88	Pass
9	1009	Tamil Selvan	55	68	95	75	69	98	Pass
10	1010	Frem	67	67	67	78	56	45	Pass

Fig 7.34 Text document with data copied from spreadsheet

8. Now, modify the data in the spreadsheet. You will see the data automatically changes in the text document.

Marklist.ods - StarOffice Calc

	A	B	C	D	E	F	G	H	I	J	K	L
1	ID	Reg No	Name	Tamil	English	Maths	Physics	Chemistry	Computer Science	Result		
2	1	1001	Anbu A	85	86	92	96	92	98	Pass		
3	2	1002	Anu S	75	86	85	84	95	85	Pass		
4	3	1003	Balu S	25	75	57	65	75	85	Fail		
5	4	1004	Mohan R	75	85	65	75	88	99	Pass		
6	5	1005	Vijay	45	65	32	22	85	65	Fail		
7	6	1006	Sathesh N	77	87	98	88	99	85	Pass		
8	7	1007	Kevin L	77	85	88	74	68	84	Pass		
9	8	1008	Kiruba S	89	78	91	86	83	88	Pass		
10	9	1009	Tamil Selvan	55	68	95	75	69	98	Pass		
11	10	1010	Prem	67	67	67	78	56	45	Pass		
12												

Fig 7.35 Data Modified in Spreadsheet

Untitled - StarOffice Writer

ID	Reg No	Name	Tamil	English	Maths	Physics	Chemistry	Computer Science	Result
1	1001	Anbu A	85	86	92	96	92	98	Pass
2	1002	Anu S	75	86	85	84	95	85	Pass
3	1003	Balu S	25	75	57	65	75	85	Fail
4	1004	Mohan R	75	85	65	75	88	99	Pass
5	1005	Vijay	45	65	32	22	85	65	Fail
6	1006	Sathesh N	77	87	98	88	99	85	Pass
7	1007	Kevin L	77	85	88	74	68	84	Pass
8	1008	Kiruba S	89	78	91	86	83	88	Pass
9	1009	Tamil Selvan	55	68	95	75	69	98	Pass
10	1010	Prem	67	67	67	78	56	45	Pass

Fig 7.36 Data Automatically updates in Text document

7.7.2 Insert a Text Outline into a Presentation

Create an outline in a text document. An outline is text that uses one or more of the default heading paragraph styles, Heading 1, Heading 2, and so on. The text document with outline is shown in figure 7.37



Fig 7.37 Text document with outline

1. In the text document that contains the outline, choose **File → Send → Outline to presentation**.

A new presentation document is created which has the outline applied as shown in figure 7.38. Each Heading 1 paragraph style corresponds to a new slide. The heading styles that occur following Heading 1 in the heading hierarchy are displayed as bullets on the slide.

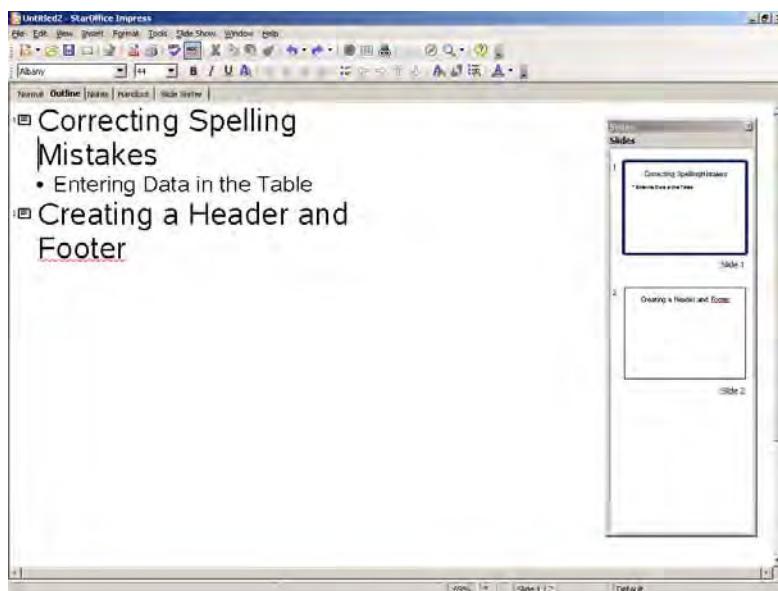


Fig 7.38 Presentation document with outline applied

2. Add more text to the outline or switch to Normal view to add objects.

If you want to transfer each heading together with its accompanying paragraphs, select the File → Send → AutoAbstract to Presentation command. You must have formatted the headings with a corresponding Paragraph Style to be able to see this command.

7.7.3 Copy Data by Drag-and-drop

You can use drag-and-drop to copy text and objects between StarOffice applications. For example, if you want to copy a cell range from a Calc sheet inside a presentation slide, proceed as follows:

1. Open StarOffice Impress presentation.

2. Open the Calc spreadsheet that contains the data that you want to copy.
2. In the spreadsheet, select the cell range that you want to copy.
3. Just drag-and-drop the selected range into the presentation (use Alt + Tab to open the presentation window).

The cell range is copied as a plug-in which is shown in figure 7.41.

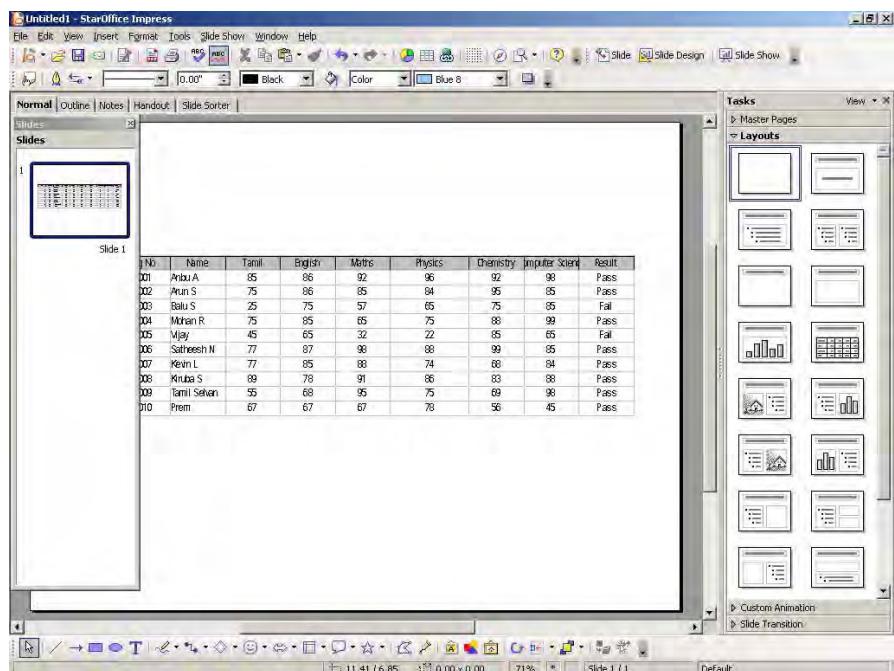


Fig 7.39 Cell range inserted as a plug-in in presentation

If you want to edit the contents of a copied cell in the presentation, double-click the cell. The Calc menus and toolbars are displayed when you are in this mode, even though you are in Impress presentation. To exit the edit mode, click outside the plug-in. The edit mode of the copied cell in the presentation is shown in figure 7.40.

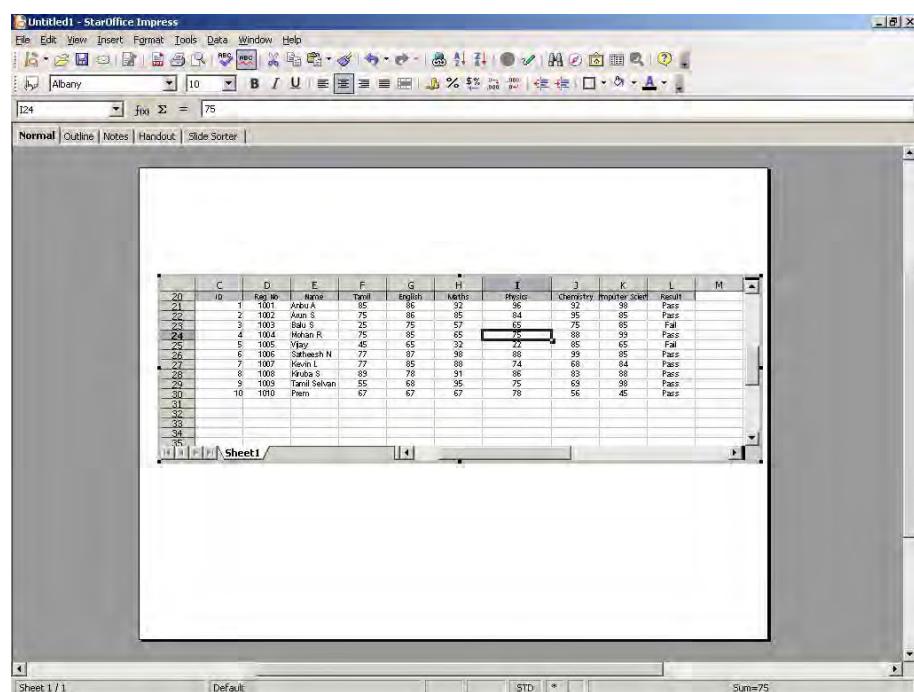


Fig 7.40 Edit mode of the copied cell in the presentation

The same procedure is followed to copy a cell range from a Calc sheet inside a Writer text document. By double clicking the cell, you can edit the contents of the copied cell in the text document. The edit mode of the copied cell in the text document is shown in figure 7.41.

A screenshot of the StarOffice Writer application window. The title bar reads "Untitled - StarOffice Writer". The menu bar includes File, Edit, View, Insert, Format, Tools, Data, Window, Help. The toolbar below has icons for Undo, Redo, Cut, Copy, Paste, Find, Replace, and others. The main area displays a table with 20 rows and 11 columns. The columns are labeled: ID, Reg No., Name, Tamil, English, Maths, Physics, Chemistry, Computer Science, and Result. The data includes student names like Anbu A, Arun S, Mani S, Mohan R, Vilay, Satheesh N, Kevin L, Kirthi S, and Premi, along with their marks and results (Pass/Fail). The table is currently in edit mode, with the cell at row 10, column 11 (Result) highlighted in yellow. The bottom status bar shows "Sheet1.1" and "Default".

ID	Reg No.	Name	Tamil	English	Maths	Physics	Chemistry	Computer Science	Result
21	1	Anbu A	95	86	92	96	90	98	Pass
22	2	Arun S	75	86	85	84	75	85	Pass
23	3	Mani S	75	75	57	57	75	55	Fail
4	1004	Mohan R	75	85	85	79	85	85	Pass
5	1005	Vilay	45	65	32	22	35	35	Fail
6	1006	Satheesh N	77	97	98	90	99	95	Pass
7	1007	Kevin L	77	85	88	74	68	84	Pass
8	1008	Kirthi S	85	76	91	96	83	88	Pass
9	1009	Arum Selvan	95	69	75	79	69	76	Pass
10	1010	Premi	67	67	67	70	55	45	Pass

Fig 7.41 Edit mode of the copied cell in the text document

7.7.4 Inserting a Database table into a Text document

You can insert a Database table into a Writer document.

1. Open StarOffice Base, in the Database pane select Tables and in the Tables pane select the table which contains data.
2. Choose Edit → Copy or press Ctrl + C .
3. Open StarOffice Writer, select Edit → Paste.

The Insert Database Columns dialog box appears as shown in figure 7.42.

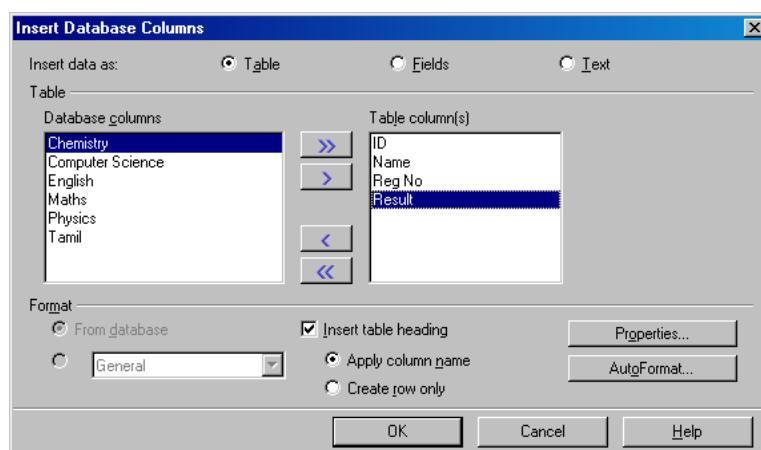


Fig 7.42 Insert Database Columns dialog box

4. Select whether the data should be inserted as a table, as fields or as text.

The preferences you set in the Insert Database Columns dialog are saved and will be active the next time the dialog is called. This save process is independent of the database and can record the preferences for a maximum of 5 databases.

If data is inserted into the document as a table, the table properties are not saved along with the data in the document. If you select the AutoFormat function for formatting the table, StarOffice will note the name of the format template. This template will then be used automatically if you insert data as a table again, unless the preferences have been changed.

5. Move the listed database fields into the table column(s) list box using > or >>
 - >> - Moves all listed database fields into the Table column(s) list box. All fields listed in the Table column(s) list box are inserted into the document.
 - > - Moves the selected database field into the Table column(s) list box. You can also double click an entry to move it to the Table column(s) list box. All fields listed in the Table column(s) list box are inserted into the document.
6. In the Table area, use the arrow keys to select the columns of the database table that you want to apply to the text table.
7. Insert table heading specifies whether to insert a heading line for the columns in the text table.

Apply column name

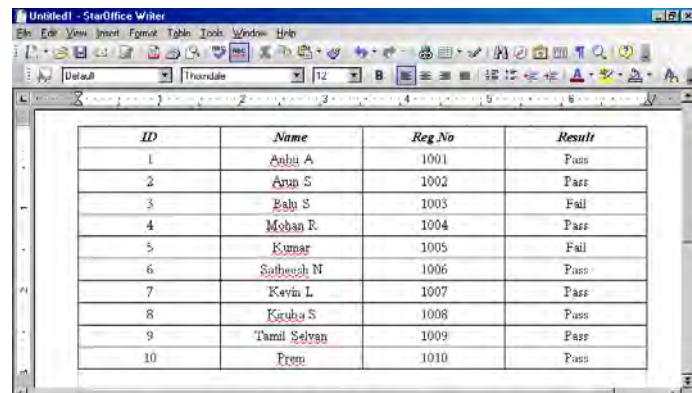
Uses the field names of the database table as headings for each of the text table columns.

Create row only

Inserts an empty heading line into the text table. Using the Create row only option, you can define headings in the document, which do not correspond to the names of the database field.

8. Click Ok to view the inserted table in the text document.

Figure 7.43 displays a database table which is inserted into a text document.

A screenshot of the StarOffice Writer application window. The title bar reads "Untitled1 - StarOffice Writer". The menu bar includes File, Edit, View, Insert, Format, Table, Tools, Window, Help. The toolbar has various icons for document operations. A table is inserted into the main editing area. The table has four columns: ID, Name, Reg No, and Result. The data is as follows:

ID	Name	Reg No	Result
1	Anbu A	1001	Pass
2	App S	1002	Pass
3	Babu S	1003	Fail
4	Mohan R.	1004	Pass
5	Kumar	1005	Fail
6	Sathheesh N	1006	Pass
7	Kevin L	1007	Pass
8	Krosha S	1008	Pass
9	Tamil Selvan	1009	Pass
10	Frem	1010	Pass

Fig 7.43 Database table inserted in text document

Summary:

- Data and information
 - Data are raw facts collected, such as those collected by an organization to record transactions.
 - Information consists of usable sets of data.
 - A DBMS is used to assemble information from data.
- Database
 - A database is repository for collections of related items or facts.
 - A DBMS is a software tool that allows users to create database tables and that provides access to multiple users.
 - A database table arranges data in columns representing fields and rows representing records.

- Field types include text, numeric and logical
 - Flat-file databases cannot form relationships with other tables and are best suited for home or small business users.
 - Relational database are very powerful because they have the ability to form relationships between tables.
 - Hierarchical and Network Structures are conceptual model for older systems that define databases used on Main Frame Systems.
 - Object Oriented Databases define data, data characteristics, attributes, and procedures as complex objects that can combine with other objects through messages
-
- Working with StarOffice Base
 - Table or Datasheet view is used to create a table's structure, view lists of records, enter and edit data.
 - Filters let you browse through selected records that meet a set of criteria.
 - Sorting arranges records in a table according to specific criteria.
 - Queries are user-constructed statements that set conditions for selecting and manipulating data in one or more tables and assembling the criteria-matching data into information.
 - SQL is a special query language for communicating with a database by describing data and sometimes instructing the DBMS to do something with the data.
 - Forms are user defined screens that are used to make it easier to enter, view and edit the data in a table or a query.
 - A report is printed information based on a query that gathers criteria-matching data and, in some cases, performs mathematical calculations.

Exercises

1. Fill in the blanks

1. A table column represents a(n)_____
2. Data such as names, addresses, and phone numbers are stored in a (n)_____
3. A row in a table represents a (n)_____
4. A screen that displays data for a single record is called a (n)_____
5. You can arrange records in alphabetical or numerical order by_____
6. _____ key field uniquely identifies every record in the table
7. _____ key combinations is used to save a table
8. The two types of filters are _____ and _____
9. _____ is used to insert a form into another form
10. The two types of reports are _____ and _____.

II. Answer the following

1. What is a Database?
2. What is a Database Management System?
3. What distinguishes information from data?
4. List and define the three components that make up a database
5. What primary characteristics distinguish a Flat-files database from a relational database?
6. Which database structure is characterized by parent-child relationships among record types?

7. List and describe the elements that makeup an object in the object oriented database model.
8. List the various field types that can exist in a database.
9. What does it means to 'filter' database records?
10. Describe what a query is and what it is used for?
11. Explain form designing and describe how it is used?
12. Explain the process of report generation using a table or query?
13. How will you integrate a spreadsheet cell range into a text document?

CHAPTER 8

INTRODUCTION TO MULTIMEDIA

8.1 What is Multimedia?

Multimedia is a computer-based presentation technique that incorporates text, graphics, sound, animations, and video elements. A combination of these elements grabs the viewers' attention and retains it. The multi-sensory inputs address the different learning needs and styles of different users and enhance the entire experience for the user.

8.2 Multimedia Applications

Multimedia applications are being used in a variety of different fields. Some fields where multimedia is commonly used include entertainment, education, research, and business communications.

In the field of entertainment, multimedia is widely used to add special effects to movies. It is also used to create animated films and cartoon strips. Animated films such as Finding Nemo, Polar Express, Ice Age, Sindbad, Pandavas, Hanuman are popular with both adults and children. High-end graphics and animations are frequently used to make computer games thrilling and realistic. Such games are very popular and are found in most home and game arcades. A high-end extension of these games is the flight simulator that is used to train pilots.

The Multimedia Messaging System, or MMS, is an application that allows you to send and receive messages over cell phones. These are popularly being used to send and receive jokes, music, ringtones, pictures and sometimes even videos.

Multimedia also has an enormous impact on education. With the growing popularity of multimedia, sophisticated elearning packages are used to train and educate people world over. The most common version of such packages are the Computer Based and Web Based Tutorials (CBT/WBT). These are self-paced learning aids that are either available on CD-ROMs or on the Internet. As mentioned, these tutorials are self-paced. So, the learner can learn by himself, at a pace and time that he is comfortable with. Plus there is no instructor; the learner does not have to travel to a location to attend the class. This eliminates the logistical problems of getting together people from different parts of the world. Such trainings are also cost-effective when the same training has to be imparted over and over again. CBTs/WBTs today are used to cover a wide range of topics including orienting new employees joining an organization, training employees on new software applications and systems used in an organization.

Multimedia based training is also being extensively used to train and educate children in schools and colleges. For example, a physics student can use an interactive multimedia presentation to learn the basics of electronics and actually create and test a circuit board. Similarly, multimedia simulations are very effective in explaining difficult concepts and facts. Such media make learning more fun and effective.

The impact of information presented in a multimedia encyclopedia is several times greater than the same information presented in the printed version. For example, a video of Neil Armstrong landing on the moon with a sound recording of his first words has a much greater impact than anything that can be written in a printed book. The use of hyperlinks in such material makes it easier to search for and view related content. Such non-linear access to information definitely speeds-up the learning process and makes it more rewarding.

Multimedia is heavily used in the entertainment industry, especially to develop special effects in movies and animation for cartoon characters. Multimedia games are a popular pastime and these are software programs available either as CD-ROMs or online. Some video games also use multimedia features.

Multimedia applications that allow users to actively participate instead of just sitting by as passive recipients of information are called Interactive Multimedia. An example are interactive multimedia games. For instance, users can play a simulated multimedia soccer match without actually being on the field. The simulation is just an illusion, but it makes the users think that they are playing a real match. The environment is created by using input devices like joysticks and sensors and by using output devices like headphones and goggles. The various multimedia components are coordinated with a technique called virtual reality. They provide an environment which is experienced by users as similar to reality. This technique is used in some arcade games and also in flight simulators, to impart training to pilots, without having to go for a real flight.

Multimedia is also used for corporate communications and presentations. Context-relevant animations, images and charts help in grabbing the viewers attention and highlighting critical pieces of information in corporate presentations. Multimedia elements are also used in advertisements, product catalogs, and online magazines.

Multimedia applications are also widely used in the fields of engineering, medicine, and scientific research. For example, in engineering, multimedia tools are used for designing and testing new components and products. In medicine, doctors can get trained by viewing at a virtual surgery or by simulating a surgical procedure without endangering the life of a human being. Similarly, a scientist can look at the molecular model of a compound and manipulate it.

8.3 Multimedia Elements – Sound, Animation, and Video

It is true that there are many image formats. Some of them are GIF files, JPG files, Animated GIF files, MPEG files, Shockwave files and NxView files.

The two most common by far are GIF and JPG files. Both of these formats compress static (as opposed to animated) bitmap images. Photographs are typical examples of static images. Both the GIF and JPG formats compress the image in different ways. A JPG file uses a much more complex technique than GIF to compress images, like photographs, where the color of every pixel is different. A GIF file creates a perfect reproduction of the original, while a JPG does not.

GIF (Graphic Interchange Format) is limited to an 8-bit palette. GIF is best suited for storing simple graphic images with relatively few colors. However, it is not well fitted for photographic works. JPG scores over GIF in this area. Despite this GIF is still used extensively on the Internet and Multimedia applications because of the great reservoir of GIF images available and support for animation.

The JPEG (Joint Photographic Experts Group) image files are a lossy format. Nearly all digital cameras have the option to save images in JPEG format. The JPEG format supports full color and produces relatively small file sizes. The two categories of image file compression are: lossy and lossless. The lossy compression algorithm takes advantage of the limitations of the human visual senses and discards information that would not be sensed by the eye. The loss of information is tolerable, and in many cases goes unnoticed. JPG is a lossy compression of the image.

Vector graphics help in rendering the image effectively on the screen. Many vendors provide special hardware called vector graphics cards to improve the efficiency in the display of images.

Sound

The sounds that you hear are analog wave patterns. Two attributes control the characteristics of sound - amplitude and frequency. The volume is the height of each crest in the wave. The frequency, also called as the pitch, is the distance between the crests of the wave. The greater the distance, the lower is the sound.

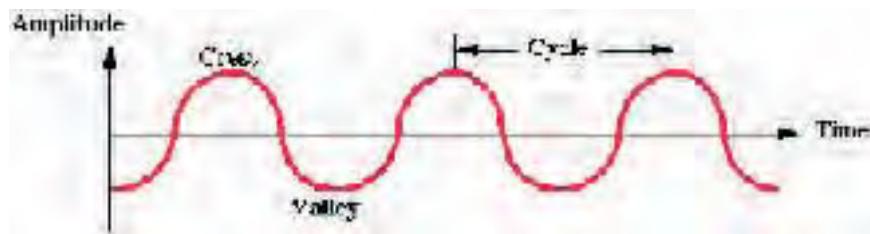


Fig 8.1 An Analog wave pattern

Before including sounds in an application, you have to convert the analog sound waves into a digital format. This conversion of analog sound waves to a digital format is called Sampling. You can further enhance the quality of the converted sound waves and add special effects, such as echo, fade in, and fade out effects, by using sound editing programs such as Sound Forge.

Sound can be stored in several different formats. You will learn more about these formats a little later in the chapter.

Animations

Animations are primarily used to illustrate or demonstrate an idea or a concept. Unlike videos that are usually taken from life, animations are based on drawings.

Animations can be two- or three-dimensional. Based on how 2-D animations are created, they can be broadly classified into the following two categories:

- Cel-based animations
- Object-based animations

Cel-based animations consist of multiple drawings, each one a little different from the others. When displayed in rapid sequence, these drawings appear to move.

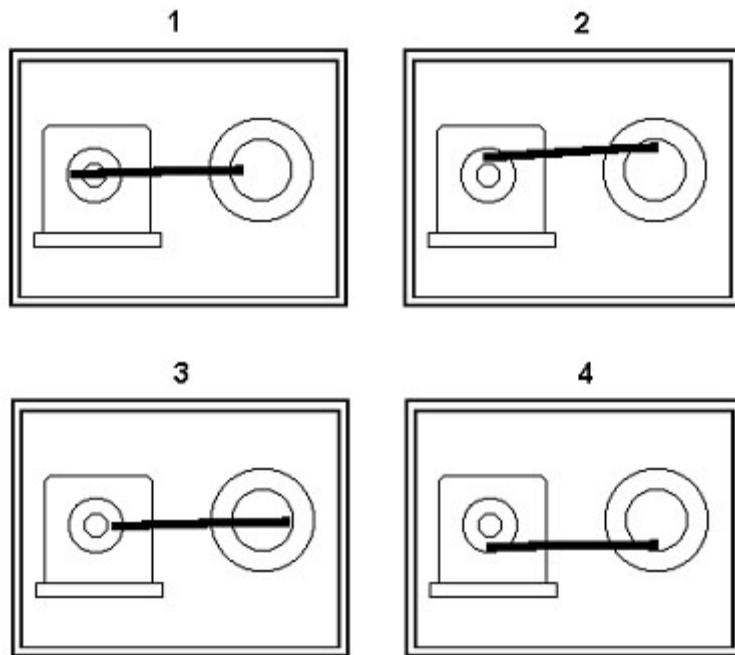


Fig 8.2 Cel-based Animations

Object-based animations, also referred to as slide or path animations, are created by moving an object across a screen. This type of animations are usually seen in computer games. For example, a ball moving across the screen.

Creating a 3-D animation is a 3-step process:

1. Modeling
2. Animating
3. Rendering

To create a 3-D animation, you have to first create the broad shapes and structures of the 3-D objects to be included in the animation. Then, you have to animate these models to define their motion. Finally, you have to render them by giving attributes, such as colors, and textures, to the objects.

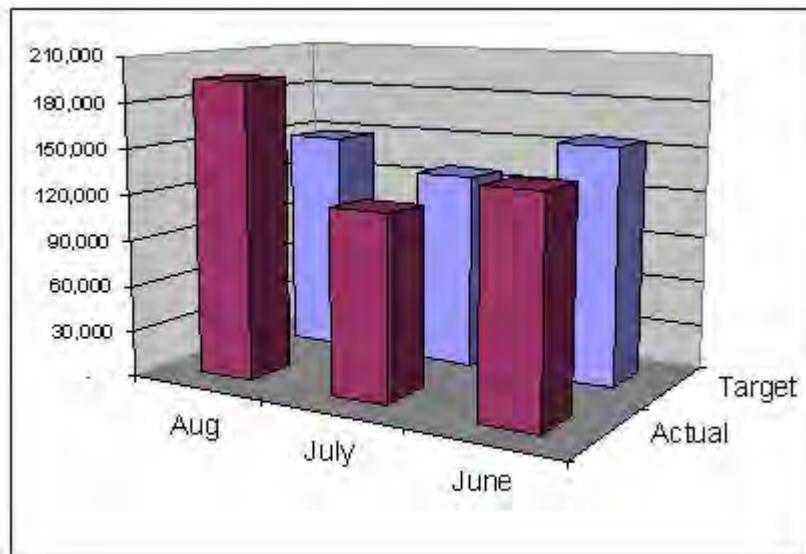


Fig 8.3 A 3-D Image

Once the animation is created, you can further enhance it by adding special effects such as morphing and warping. Morphing is a technique by which you can blend two or more images to form a new image. Warping is the technique of distorting a single image to

represent something else. Most modern multimedia applications, particularly games, combine these techniques with virtual reality to create an environment in which gives the viewer the feeling that he is part of that environment.

Video

Like sound, video is also recorded and played back as an analog signal. So, you have to convert the video signal into a digital format before including it in a multimedia application.

Video files tend to be very heavy. Several elements such as frame rate, image size, and color depth determine the size of these files. You can vary these elements to reduce the file size to acceptable levels. However, reducing the color depth to less than 256 colours results in the image looking murky. Similarly, reducing the frame count to less than 15 frames per second causes the video to look jerky.

You can also reduce the size of videos by compressing them. Compression is a technique by which a recurring set of information is identified and replaced by a single piece of information. There are two types of video compressions:

- Lossless compression – Retains the exact image throughout the compression.
- Lossy compression – Provides a comparatively higher ratio of compression but results in some loss of quality.

Popular Multimedia Formats

Some popular multimedia formats are as follows:

The MIDI Format

The Musical Instrument Digital Interface or the MIDI format is one that is commonly used for transferring music information between electronic music devices like synthesizers and sound cards in computers.

It was developed in 1982 and is a very flexible format that can be used for a wide range of musical applications. The MIDI format cannot contain sounds- it contains only digital notes. As a result, these files are relatively light. For example, a MIDI file that plays for approximately 5 minutes may be only 25 KB. This format is supported by most of the popular softwares in the market including all popular browsers.

Sound files in the MIDI format have the extension .mid or .midi.
The RealAudio/RealVideo Format The RealAudio format was developed by RealNetworks in 1995 and supports both sound and videos. This format is more popular for transfer of data over the Internet and allows you to stream files even over Internet connections with low bandwidths. However, the quality of these transmissions is often poor.

Files in this format have the extension .rm or .ram. **The AU Format** The AU format is another sound format that is supported by most of the popular softwares in the market across different platforms. Files in the AU format have the extension .au.

The AIFF Format

The Audio Interchange File Format or AIFF format was developed by Apple. This is not a very popular format as it is neither cross-platform nor is it supported by all web browsers. Files in the AIFF format have the extension .aif or .aiff.

The SND Format

The Sound or SND format was also developed by Apple. Like the AIFF format, the SND files neither cross-platform nor supported by popular web browsers. Files in the SND format have the extension .snd.

The WAVE Format

The WAVE format was developed by IBM and Microsoft. It is one of the more popular formats as it is not only supported by all computers running the Windows operating system, but also by all popular web browsers. Files in the WAVE format have the extension .wav.

The MP3/MPEG Format

The MPEG format was developed by the Moving Pictures Experts Group. This MPEG format developed for video files while the MP3 format is used to store sounds (music). However, these formats have become one of the most popular format on the Internet in recent years. The main reason for the popularity of these formats is that they offer good compression and high quality. They are also cross-platform and supported by most popular web browsers.

Sound files stored in the MP3 format have the extension .mp3, or. mpga (for MPG Audio). Video files stored in the MPEG format have the extension .mpg or .mpeg.

The AVI Format

The Audio Video Interleave or AVI format was developed by Microsoft in 1992. It is supported by all computers running the Windows operating systems and by most of the popular browsers. It is a very common format on the Internet. Videos files stored in the AVI format have the extension .avi.

The Windows Media Format

The Windows Media format was developed by Microsoft. It is also one of the very popular formats on the Internet and on computers with the Windows operating system. It should be noted that this format requires the installation of an additional component in non-Windows computers. Files in the Windows Media format have the extension .wmv.

The QuickTime Format

The QuickTime format was developed by Apple primarily to store videos. It is a popular format on the Internet but requires the installation of an additional component in non-Windows computers. Files in the QuickTime format have the extension .mov.

The Shockwave Format

The Shockwave format was developed by Macromedia and is used to store multimedia components created using Flash. This format requires an extra component to play. However, this additional component comes preinstalled with the latest versions of Netscape and Internet Explorer. Files in the Shockwave format have the extension .swf.

Multimedia Hardware and Software

Most common personal computers are adequate to work with multimedia. However, some additional hardware and high resolution monitors would greatly enhance the effectiveness of using multimedia. Also special software such as Windows Media Player would help in viewing the multimedia presentations.

Creating multimedia content requires special software. Some commercial multimedia content development software are Flash,

Dreamweaver and Maya. More advanced multimedia hardware and software are available.

Inline Sound and Video

Sounds and video in multimedia applications can be played “inline” or by using a “helper”. How the sound or video is played depends on the HTML tags that you use. When sound or video is included as part of a web page, then it is called inline sound or video. The disadvantage of using inline sound or video is that it plays automatically whenever the web page loads without giving the viewer any control. You can add inline sound to a web page by using the `<bgsound>` and the `` tags. A helper application, also called as a Plug-in, is a program that can be launched by the browser to “help” play sound or video. The advantage of using helper applications is that you can allow the viewer control some or all of the player settings. For example, the viewer can control the volume settings, in addition to letting him rewind, play, pause, and stop the sound or the video.

Helper applications can be launched using the `<embed>`, `<applet>`, or the `<object>` tags.

Note: These tags are not standard HTML or XHTML tags. Some are supported by both Netscape and Internet Explorer while others are supported only by Internet Explorer. You can also include a hyperlink to a media file. When you do so, the browser will load a helper application, such as Window Media Player, to play the file.

8.4 Using Multimedia Elements in Content

Indisputably, including multimedia elements in content adds immense appeal to it. However, before deciding to include multimedia elements, it is essential to consider one major factor. This factor is the file size. Files with multimedia elements tend to be very heavy. For example, a 5-second audio file can be as heavy as 1MB. This, combined with the limitations of the medium of presentation can limit,

if not totally nullify the impact of the presentation. For example, a heavy video or animation file in a WBT may not load because of poor bandwidth. Or it may take so long to load that the learner loses interest and decides to move on to something else.

Here are a few tips that you can keep in mind while making such decisions.

Consider the appropriateness of using the element. Ensure that there is a justifiable need for every element that you include in your content and do not include any element without a compelling benefit from it.

Consider using alternate multimedia elements to provide the same impact. For example, consider replacing a heavy video file with a sound file and a static image.

Streaming the heavy audio and video files. During a regular HTTP transfer, the entire file is downloaded to the user's computer. When you stream the file, the user's computer is in constant contact with the server with the file.

Provide the viewer control over the multimedia element. For example, it is a good idea to include a skip button that allows the viewer to skip the introductory animation. Such a feature would be very popular with viewers viewing the content for a second time or third time.

Provide the view feedback about the status of download. Including a status bar that displays the percentage of download completed and the approximate time required to complete the task, will help in keeping the viewer engaged.

Display the multimedia element, particularly videos, in smaller windows.

Summary

- Multimedia applications are now becoming very popular
- These applications include text, sound and video to produce high quality products
- Popular uses of multimedia are in the areas of education, entertainment and presentations
- Special hardware and software for multimedia are now available in the market
- There are a number of formats in which audio and video are used in multimedia applications.
- These formats are useful in including audio, video and other special effects in creating attractive web pages applications.
- Developing multimedia content is very challenging.

Exercises

1. Create a HTML page with text, audio, images and video.
2. Note the formats of the audio, images and video files provided in the accompanying CD.

CHAPTER 9

PRESENTATION

9.1 Introduction

Among the many tools that are used to communicate to an audience, presentations are among the most powerful and effective ones. In a presentation, you can include a variety of items such as text, audio, hand-drawn images and videos. You can further enhance the appearance of the presentation by inserting charts and tables, adding background images, slide animation and transition effects.

StarOffice Impress is the StarOffice application that allows you create attractive and professional-looking presentations. The application provides various tools that allow you to save and modify presentations, print them as handouts, and view presentations as slide shows or HTML pages. It also allows you to import and modify Microsoft PowerPoint presentations.

9.2 A Basic Presentation

You can create a presentation in StarOffice using any of the following several different ways.

You can create a new Impress presentation from within any StarOffice application, by choosing **File → New → Presentations as shown in figure 9.1.**

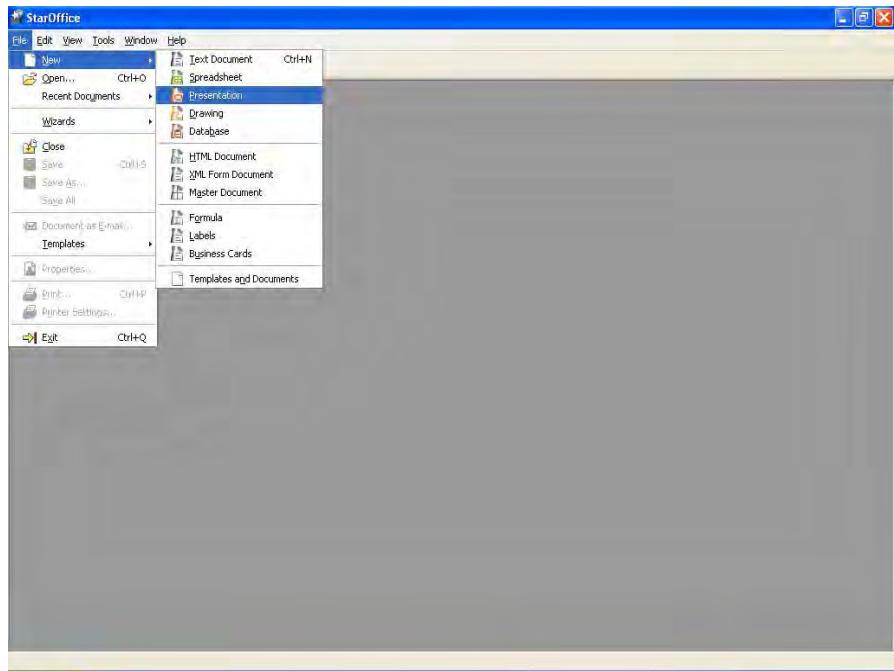


Fig 9.1 Creating a Presentation from any StarOffice Application

You can also create a new presentation by launching StarOffice Impress. You can do so by choosing **Start → All Programs → StarOffice 8 → StarOffice Impress**.

9.2.1 Creating a Presentation using the Presentation Wizard

When you create a new presentation, the Presentation Wizard automatically starts as shown in figure. 9.2. This wizard will guide you through the steps of creating a presentation.



Fig 9.2 Choosing the Type of the Presentation

The first page of the Presentation Wizard displays three options that allow you to create an empty presentation, use a pre-created template to create the presentation, or open an existing presentation. For the purpose of this activity, let's select **Empty presentation** and click **Next** to proceed to the second page of the wizard.

The second page of the Presentation wizard appears as shown in figure. 9.3.

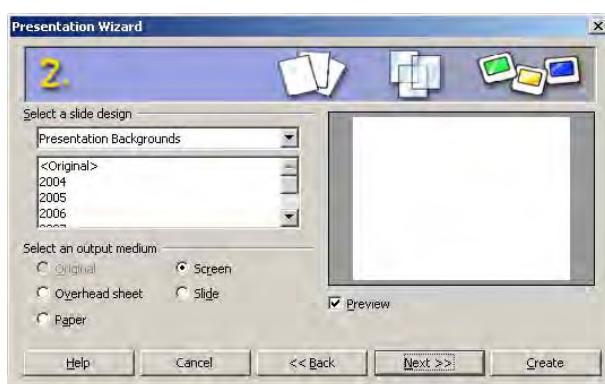


Fig 9.3 Choosing the Background and Output Medium of the Presentation

This page allows you to select a background for all the slides in the presentation. A drop-down list on the left provides three categories of presentation backgrounds for you to choose from. A list box below the background category displays different backgrounds in that category. A Preview box on the right allows you to view a preview of the slide with the selected background. If you do not see a preview, make sure the **Preview** check box is checked.

As the name indicates, the **Select an output medium** section in the lower half of the page allows you to specify the final output medium for the presentation.

Choose a suitable background for the presentation and click the **Next** button to proceed. Note that the background chosen can be changed later if necessary.

The third page of the Presentation wizard appears as shown in figure. 9.4.



Fig 9.4 Choosing the Slide Transition and Type

This page of the wizard allows you to specify the transition effects to be used in the presentation. The **Select a slide transition** section at the top of the page allows you to choose the transition effect and speed in the slides.

The **Select the presentation type** section of the page allows you to specify if the slide transition should be manual or automatic. The **Default** option allows you to manually control the transition of slides using options such as mouse clicks. The **Automatic** option allows you to specify the duration for each slide and will automatically flip through the slides at the specified speed.

The **Duration of page** spin box allows you to specify the duration for the slides and the **Duration of pause** spin box allows you to specify the duration for which the presentation will pause before it starts again.

Checking the **Show Logo** check box will display the message, “Created with StarOffice” during the pause between each presentation.

As on the previous page of the presentation, the preview box on the right allows you to view a preview of the selected options.

Now, click **Create** to create the presentation. The StarOffice 8 Impress environment with one slide appears as shown in figure.9.5.

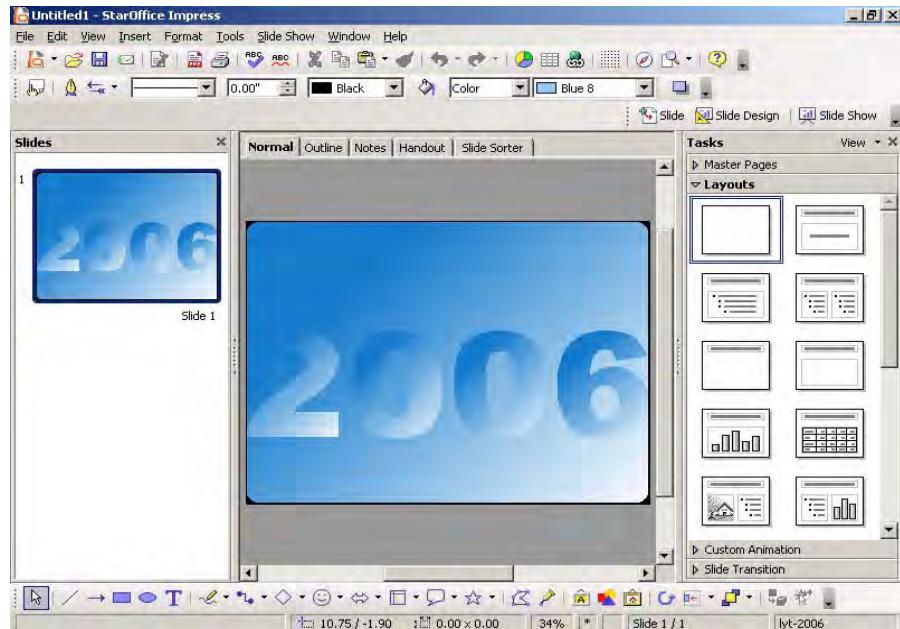


Fig: 9.5 StarOffice Impress Presentation Window

9.2.2 Creating a Presentation without using Presentation Wizard

StarOffice Impress provides several default presentation formats. The easiest way of creating a presentation is to use one of these formats and then modify it to suit your requirements. The advantage of using these formats is that they already contain slides with content outlines that you can populate to quickly build presentations.

To create a new presentation using a template, choose **File → New → Templates and Documents**, or press **Shift+Ctrl+N**. The window appears as shown in the figure. 9.6.

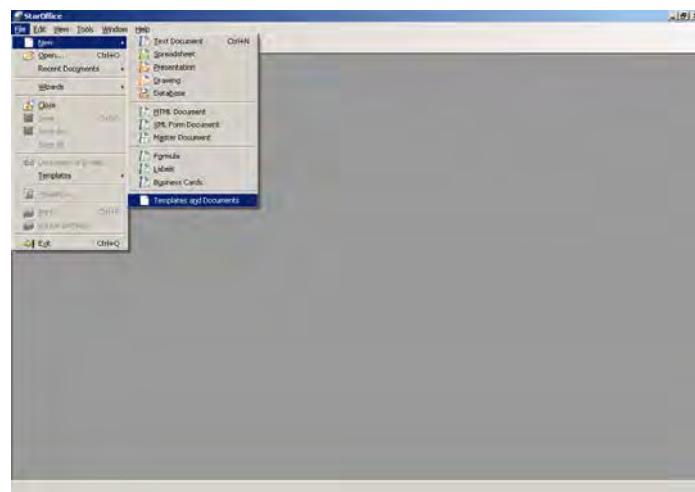


Fig 9.6 Choosing Templates and Documents Window

- In the **Templates and Documents** dialog that now appears, click the **Templates** icon on the left and then double-click **Education**. Double-click one of the templates, such as **Academic Presentation**. This is shown in figure 9.7.

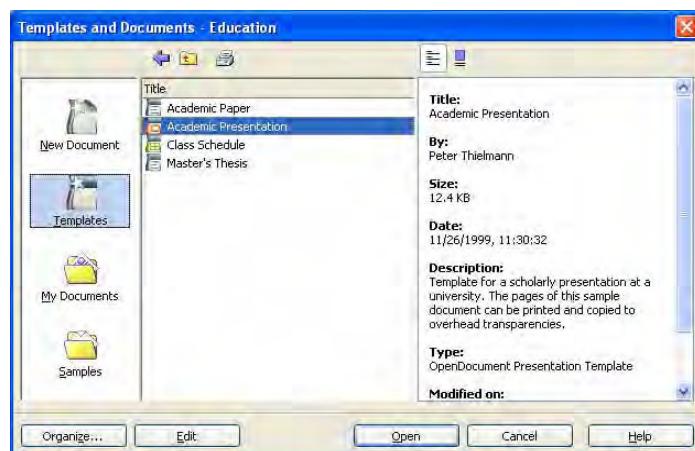


Fig 9.7 Choosing Academic Presentation from Templates Pane

Click **Open** to open the presentation. The selected presentation format will open in the Impress window as shown in figure. 9.8.

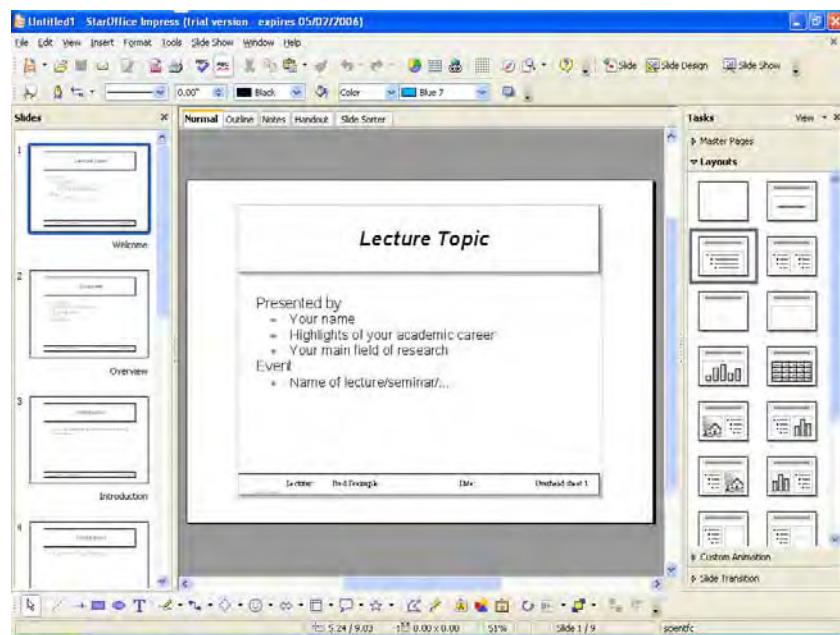


Fig 9.8 Selecting Academic Presentation from Templates Pane

9.2.3 The StarOffice Impress Presentation Window

Let's now take a closer look at the StarOffice Impress presentation window displayed in figure. This window is very similar to the other application windows of StarOffice. It has a menu bar at the top of the window. Below the menu bar, one or more toolbars display shortcut icons for most of the frequently used options of StarOffice Impress. The status bar at the bottom of the screen displays status information such as the number of slides.

The middle pane displays the slides in the presentation. As you can see, this section contains three panes:

The Slides pane on the left displays a thumbnail image of the slide and allows you to rename, delete, or rearrange them.

The pane in the center allows you to view the slides in the presentation. This pane displays five tabs at the top that allow you to view the presentation in different formats.

Normal view: Allows you to create and edit slides

Outline view: Allows you to reorder slides, edit slide titles and heading.

Notes view: Allows you to add notes to the slides or view any existing notes for the slide. Notes are typically used by a presenter to add additional information to a slide.

Handouts view: Allows you to scale the slides so that several slides can fit into a page. This view is typically used when the presentation is to be printed and distributed as a handout.

Slide Sorter view: Allows you to view miniature images of all the slides in the presentation. This view is also used to rearrange slides.

The Tasks pane on the right displays four pages that allow you to specify the master slide, layout, transitions, and animation effects for the objects on your slides.

Master Page: This page can be used to specify basic background information that needs to be included in all the slides. For example, you can insert a company logo to the master slide and it will appear in all the slides.

Layouts: This page displays the various layouts provided by StarOffice Impress. You can choose a layout while creating a new slide.

Custom Animation: This page displays various options that allow you to add or modify animation effects to elements of a slide.

Slide Transition: This page displays various transition effects that can be attached to a slide along with other options that allow you to control the transition of the slides. Note that you can have a different transition for each slide in the presentation.

9.2.4 Saving a Presentation

To Save a Presentation choose **File → Save** or click  icon. If you have not saved the presentation before, the **Save As** dialog box opens as shown in the figure 9.9. In the File name text box, enter the name of the presentation. Click **Save**.

Tip: You can also press **Ctrl + S** to save your work.

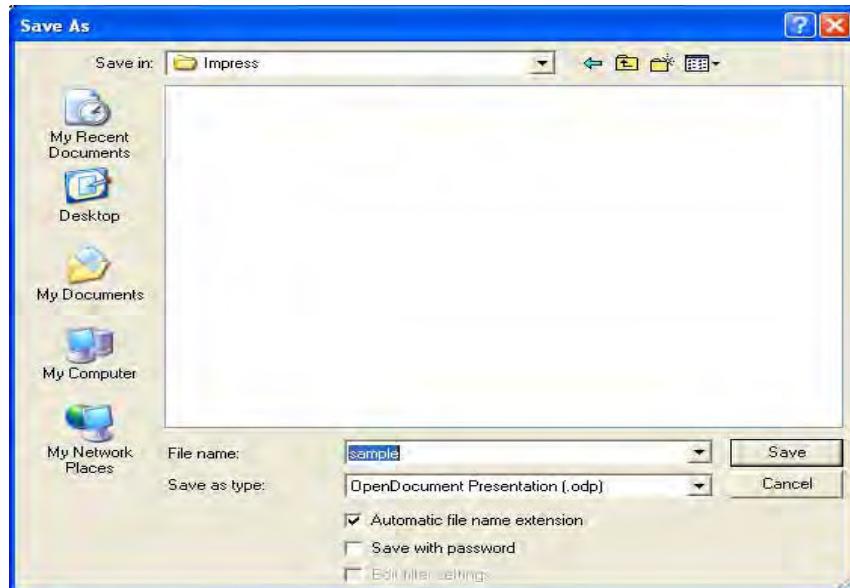


Fig 9.9 Save as dialog box

9.3 Managing a Presentation

9.3.1 Starting Presentation

To start a presentation, click the **Slide Show** icon  on the **Presentation Toolbar** or choose **Slide Show → Slide Show** or press **F5**. The on-screen presentation starts automatically in the full-screen mode. If you click once, the second slide will be displayed (preceded by the defined transition effect). After the last slide, you will see a black slide. End the presentation by pressing the Escape key (also used to stop the presentation before the end).

Presentation settings can be adjusted under **Slide Show → Slide Show Settings**. A dialog box appears as shown in the Fig 9.10.

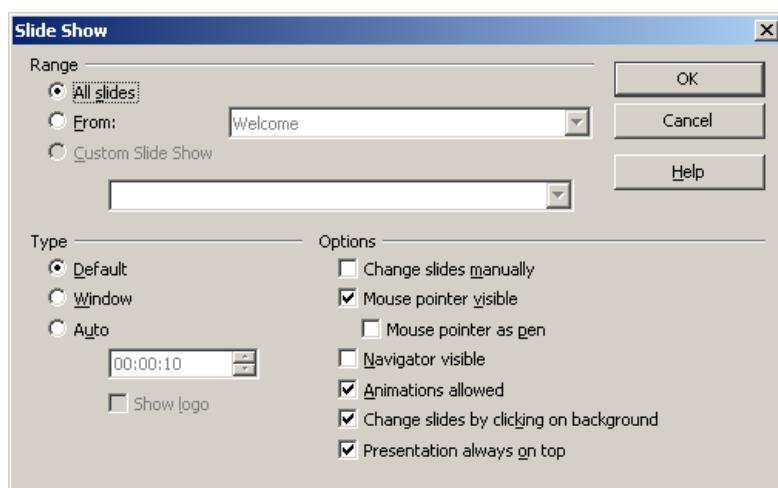


Fig 9.10 Slide Show Settings

Select **All slides**, if you want to display all the slides else select **From** option and select the page from which you want to display.

Select **Custom Slide Show**, to run a custom slide show in the order that you defined in **Slide show → Custom Slide show**.

9.3.2 Inserting, Deleting and Renaming Slides

To insert a slide, click the **Slide** button in the Presentation toolbar or choose **Insert → Slide** from the menu bar. The new slide uses the page layout of the previous slide.

If you want to delete a slide, select the slide, which you want to delete in the Slides Pane and press **Delete** key or right click on the slide, and choose **Delete Slide**.

To rename a slide, select the slide, which you want to rename and choose **Slide → Rename Slide** or right click on the slide and choose **Rename Slide**. A dialog box appears as shown in the figure 9.11.



Fig 9.11 Renaming a Slide

9.3.3 Changing Slide Order

To change the Slide order, click the **Slide Sorter** in the **Switching Presentation view** tab. A slide sorter window opens as shown in figure 9.12. In this mode, all slides in the presentation document are displayed in reduced size. Click the slide you want to move and drag it with the mouse to the desired position. A vertical black bar indicates the position where the slide will be inserted.

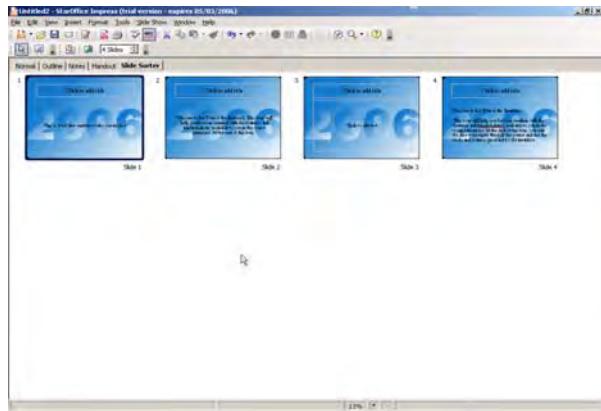


Fig 9.12 Slide Sorter window

Inserting Pictures, Objects, Sound and Video Inserting Pictures

To Insert a Picture in a slide, choose **Insert → Picture → From File** or click the Insert Picture icon from the Insert toolbar. An open dialog box appears. Choose the desired picture to be inserted from the open dialog box. figure.9.13 shows a picture of a flower that has been inserted in a slide.



Fig 9.13 Inserting a Picture

9.3.4 Sound and Video

To Insert a Movie in a slide, choose **Insert → Movie and Sound** or else click the Insert Movie and Sound icon  from the Insert toolbar.

The Insert Movie and Sound dialog box appears as shown in figure.9.14

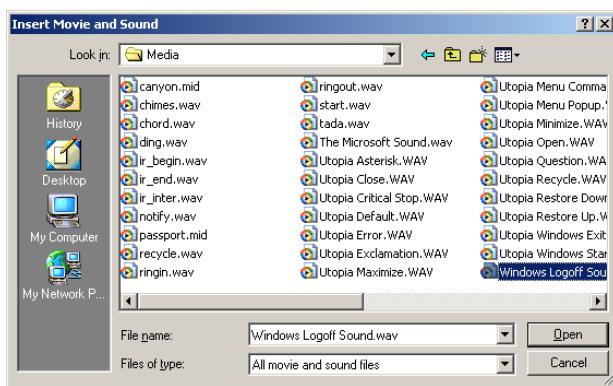


Fig 9.14 Insert Movie and Sound dialog box

The Inserted sound file will be displayed in your slide as shown in figure 9.15

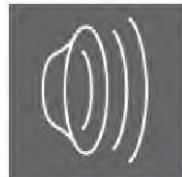


Fig 9.15 Sound file display in slide

To play a movie or sound file in an Impress presentation

1. Open the slide that contains the movie or sound file.
2. Click the object icon for the movie or sound file on the slide.
3. Click **Play** on the **Media Playback** toolbar.

The Media Playback toolbar is shown in figure 9.16.



Fig 9.16 Media Playback Toolbar

You can also use the Media Playback Bar to pause, stop, loop, as well as to adjust the volume or to mute the playback of the file. The current playback position in the file is indicated on the left slider. Use the right slider to adjust the playback volume. For movie files, the bar also contains a list box where you can select the zoom factor for the playback.

- Play icon - Plays the current file.
- Pause icon - Pauses or resumes the playback of the current file.
- Stop icon - Stops the playback of the current file.
- Repeat icon - Plays the file repeatedly.
- Position slider - Moves to a different position in the file.
- Mute icon - Turns sound off and on.
- Volume slider - Adjusts the volume.
- Zoom - Adjusts the size of the movie playback.

StarOffice Impress enables Media Player where you can preview movie and sound files as well as insert these files into the current presentation slide. The Media Player supports many different media formats.

To open Media Player window

Choose **Tools → Media Player**

The Media Player window is now displayed as shown in figure 9.17.

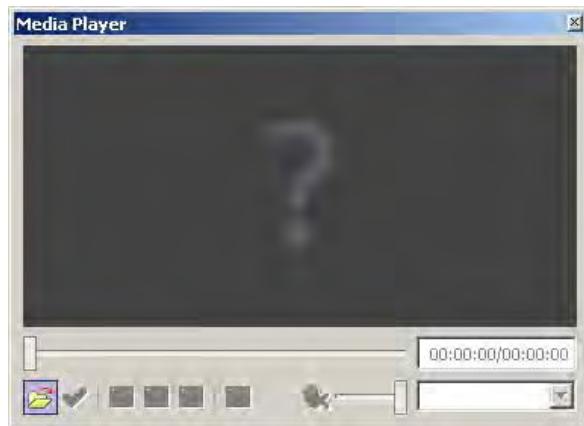


Fig 9.17 Media Player

Click **Open** icon which is displayed at the lower left corner of the media player window. The Open Movie and Sound dialog box appears as shown in figure 9.18



Fig 9.18 Open Movie and Sound dialog box

Select a video or sound file and view the preview.

Click the **Apply** icon  to apply the selected movie or video file into your presentation.

Close the media player window

Start slide show by choosing **Slide Show → Slide Show** or press the F5 key.

Figure 9.19 displays a sample movie file played during a slide show.



Fig 9.19 Movie file played during slide show

Inserting Objects

StarOffice Impress provides tools for inserting objects like charts, formula, etc. in a presentation. To insert an object in a slide, choose an object from **Insert → Object**.

Insert Formula

This is used for inserting a formula into the presentation for performing calculations.

Insert OLE Object

This is used to import objects from other application into a presentation. For example, StarOffice spreadsheet, formulae, text and even Microsoft application objects can be inserted. Figures 9.20 and 9.21 show how to insert a Microsoft Word Document.

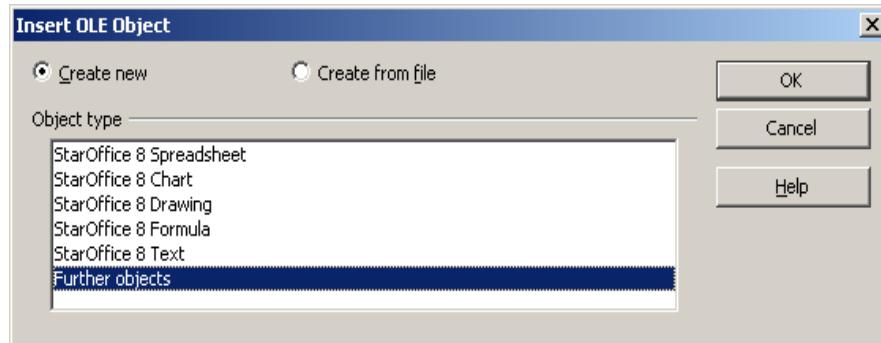


Fig 9.20 Inserting OLE Object

If you want to insert a Microsoft Word Document, choose **Further objects** and **Create New** option in the **Insert OLE Object** dialog box and click **OK**. In the **Insert Object** dialog box, select **Microsoft Word Document** as object type and click **Ok**.

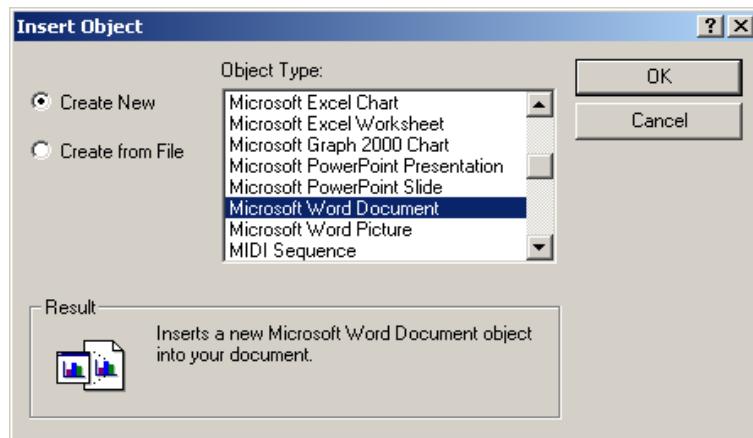


Fig 9.21 Object Type Selection window

Microsoft Word Application is opened automatically. Type your information in MS Word and close it. StarOffice Impress automatically saves the document and inserts it into the slide. figure.9.22 shows the inserted MS Word document.

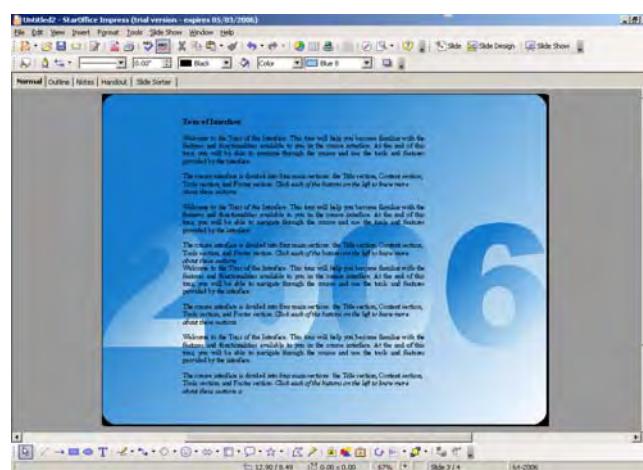


Fig 9.22 OLE Object in Presentation

- **Insert Applet**

This is used to import Applets into the presentation.

9.3.5 Slide Transitions, Effects and Animation

9.3.5.1 Automatic Slide Transition

The easiest way to assign slide transition effects to slides is in **Slide View**. Choose **View → Toolbars → Slide View**. Select the number of slides to be listed in the **Slides Per Row** spin box. The number of slides in the Slides view changes according to the number specified in the **Slides Per Row** spin box as shown in the figure.9.23. The **Slides** view displays the slides in certain numbers specified in the **Slides Per Row** spin box as shown in the figure.9.24.

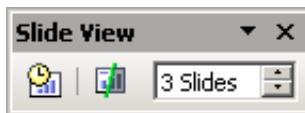


Fig 9.23 Slide View Floating window

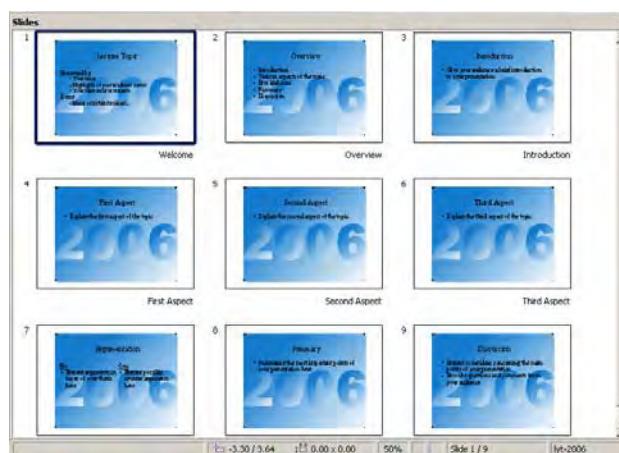


Fig 9.24 Slide View window

9.3.5.2 Effects for Objects

The objects in your slide can have various effects, for example, they can roll into your presentation from the left side, the text can be slowly drawn onscreen, and so on.

All these effects can be assigned using the **Normal View (View → Normal View)**.

Choose **Custom Animation** from **Slide Show → Custom Animation**. First you must select the object to which you want to apply the effect.

Click **Add** in **Modify Effect**. The Custom Animation window as shown in the figure.9.25 appears.

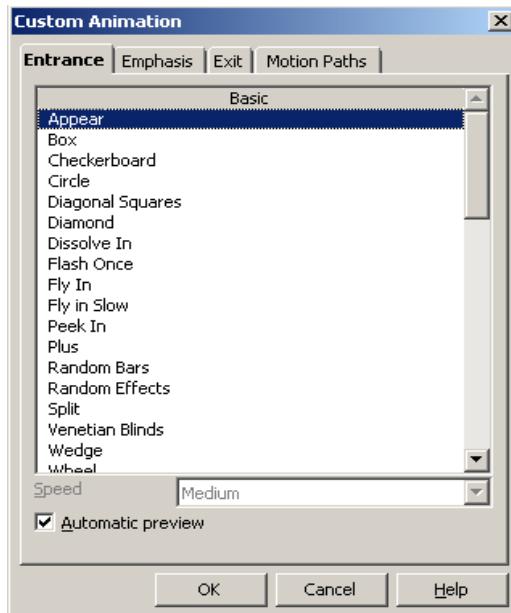


Fig 9.25 Custom Animation window

Then select the desired effect. Click the **Ok** button. You can also have your object **fade in** (in the **Custom Animation** window, on the **Entrance** tab under **Special** category) and additionally, fade out (in the **Custom Animation** window, on the **Exit** tab under **Special** category) per mouse-click.

9.3.5.3 Changing Slide Background

You can change the background color or the background fill of the current slide or all of the slides in your document. For a background fill, you can use hatching, gradient, or bitmap image as shown in the figure 9.26.

Choose **Format → Page → Background**. Select the background fill from the following options.

Color
Gradient
Hatching
Bitmap Image.

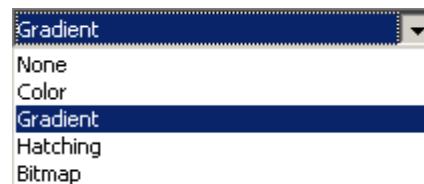


Fig. 9.26 Background Fill combo box

In this example, Colour is selected as the **Fill** type. Note that the list box below the **Fill** combo box changes to a list of different colours as shown in the figure 9.27.

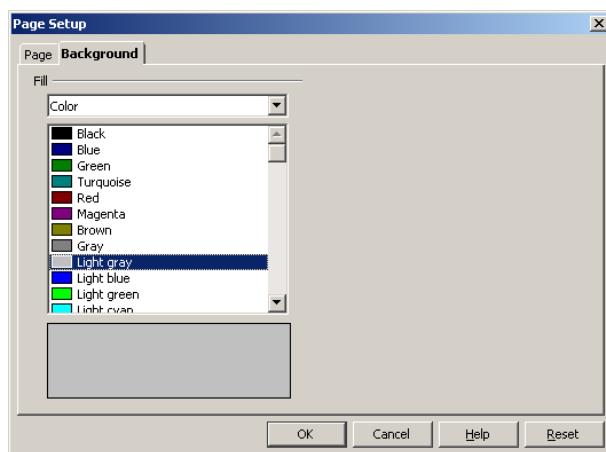


Fig 9.27 Selecting Background Color

In the Fill area, do one of the following:

- Select **Color**, and then click a color in the list.
- Select **Gradient**, and then click a gradient style in the list.
- Select **Hatching**, and then click a hatching style in the list.
- Select **Bitmap**, and then click bitmap image in the list.

Then, Click **Ok**. **Page Settings** dialog box appears as shown in figure 9.28. If you want to change the background fill for all of the slides, click **YES** when the ‘Background setting for all pages’ dialog box appears else click **NO** to change the background fill for a single slide.



Fig 9.28 Background Fill Dialog Box

9.3.5.4 Applying a Slide Design to a Master Slide

A master slide determines the text formatting style for title, outline and the background design for individual slides, or for all of the slides in a presentation. You can change the appearance of a master slide by applying a new slide design.

To apply a new slide design:

Select **Format → Slide Design**. A dialog box appears as shown in the figure 9.29.

Do one of the following:

To apply the slide design to all of the slides in your presentation, select the **Exchange background page** check box.

To apply the slide design to the current slide only, clear the **Exchange background page** check box.

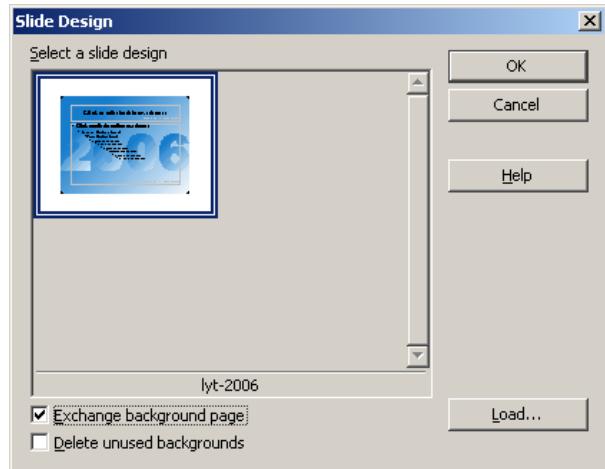


Fig 9.29 Slide Design window

Click **Load**. A window as shown in the figure.9.30 appears.

Under **Categories**, select a slide design.

Under **Templates**, select a template with the design that you want to apply. To preview the template, click **More**, and then select the **Preview** check box.

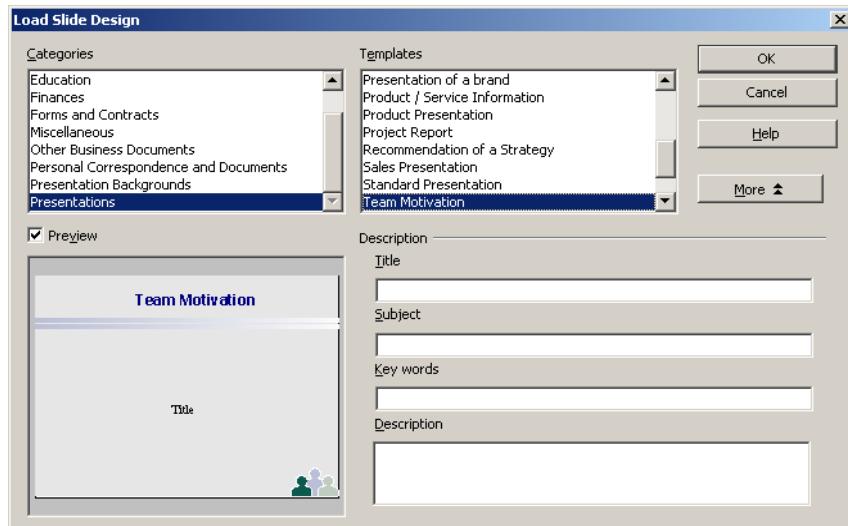


Fig 9.30Load Style Design window

Click **OK** to see the changes in the master slide.

9.3.5.5 Presentation Styles

Along with the slide design you can also assign a whole set of Presentation Styles to your slides. Open the Style list to see a list of the pre-defined Styles. You can modify the existing Styles and you can create new Styles. The Styles Outline 1 through Outline 9 enables you to give the outlined headings and topics on your slides a uniform look.

Open a new, empty presentation with a slide layout that allows outline levels. The slide layout called “Title, Text” is suitable for this purpose.

Note: The slide layout you choose determines the number of outline levels. If you choose a slide layout, which does not enable any outline, you will have no access to outlines.

Activate the outline view mode by choosing menu **View → Outline View**.

Open the Stylist either by choosing **Format → Styles and Formatting** or with the **F11** key.

A window appears as shown in the figure 9.31.

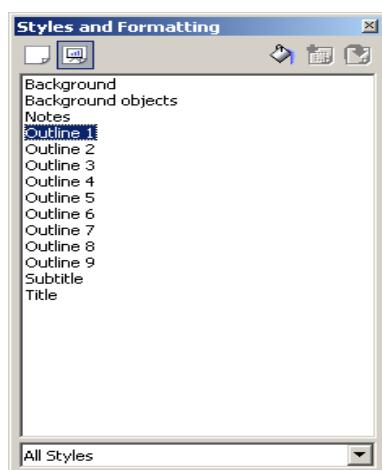


Fig 9.31 Styles and Formatting window

- The cursor is now blinking next to the small icon for slide 1. Enter the desired text, for example First Page. This will be the title for slide 1.
- If you press the **Enter** key, a small icon for slide 2 appears in the next line of the Outline view. Enter a title for the second slide, for example, **Second Page**.
- Press the **Enter** key again. Now press the Tab key before you enter any text. By doing that, you ensure that the text you then enter here will be a subtitle on slide 2.
- You can also first start entering the text for the subtitle and then press the Tab key. In case, if you have already entered text in

the line, you will see a message, which warns you that with this action, you will delete the existing text. To delete click Ok.

- Continue to enter more subtitles of the first level on page two. By pressing the Tab key, you move the line down one level and with Shift + Tab one level up. This enables you to even make a new slide out of a sub-topic.

The levels you create with these steps automatically contain the Presentation Styles title, outline 1, outline 2, and so forth. These Styles can be modified by having a new slide design assigned to them, for example, a new font, font size and font color. You can, of course, edit these designs (for example, with the Stylist's context menu). The outline view is shown in figure 9.32.

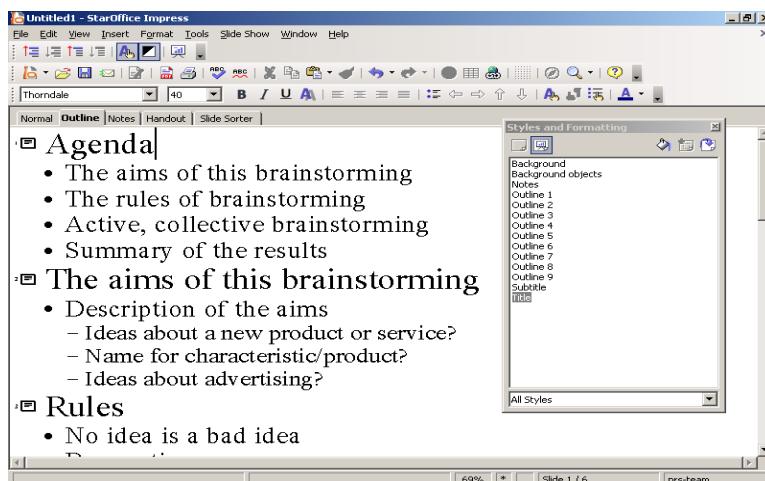


Fig 9.32 Outline View of Presentation

9.4 Customizing a Presentation

You can create as many custom slides shows as you want. StarOffice Impress also allows you to start slide shows from the current slide as well as hide slides during a slide show.

To create a custom slide show:

- Choose **Slide Show → Custom Slide Shows**, and then click **New**.
- Figures 9.33 and 9.34 show the **Custom Slide shows** dialog box.
- Enter a name for your slide show in the **Name** box.
- Under **Existing Slides**, select the slides you want to add to your slide show, and click the **>>** button. Hold down Shift to select a range of slides, or Ctrl to select multiple slides.
- You can change the order of the slides in your custom slide show, by dragging and dropping the slides under **Selected Slides**.
- Click **Ok**.



Fig 9.33 Creating New Custom Slide show

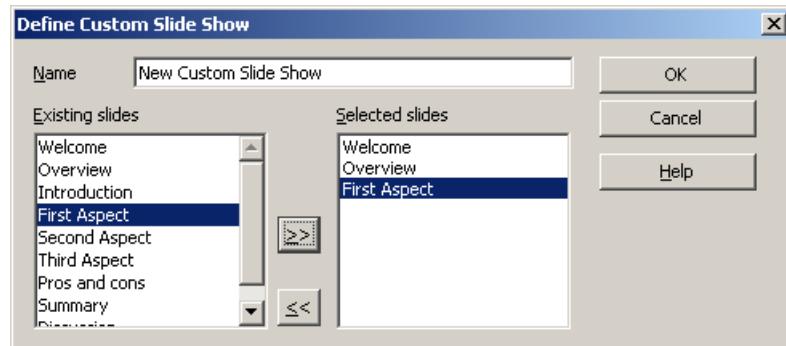


Fig 9.34 Define Custom Slide show

To start a custom slide show:

- Choose **Slide Show → Custom Slide Show**.
- Select the slide show you want to start from the list.
- Click **Start**.

Note: To start the selected custom slide show when you click the **Start** button check whether the **Use Custom Slide Show** check box is selected. This is clearly shown in figure.9.35.

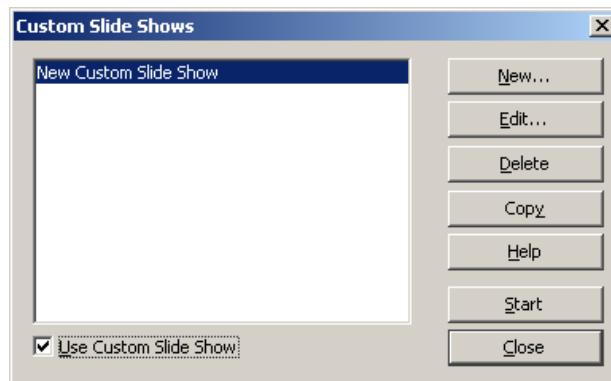


Fig 9.35 Custom Slide show

9.4.1 Options for Running a Slide Show

To start a slide show from the current slide:

1. Choose **Tools → Options → StarOffice Impress → General**.
A window as shown in the figure 9.36 appears.
2. In the Start presentation area, select **Always with current page** check box.

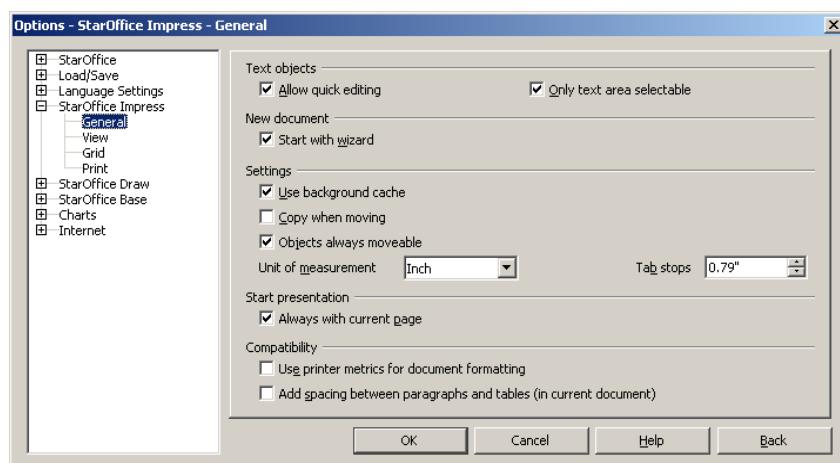


Fig 9.36 General Settings in StarOffice Impress

Note: Do not select this option if you want to run a custom slide show.

9.4.2 To hide a slide

- Select the slide(s) that you want to hide in the slide show.
- Choose **Slide Show → Show/Hide Slide**.

The Slide number is struck out, as shown in the figure 9.37 but it is not removed from your presentation.

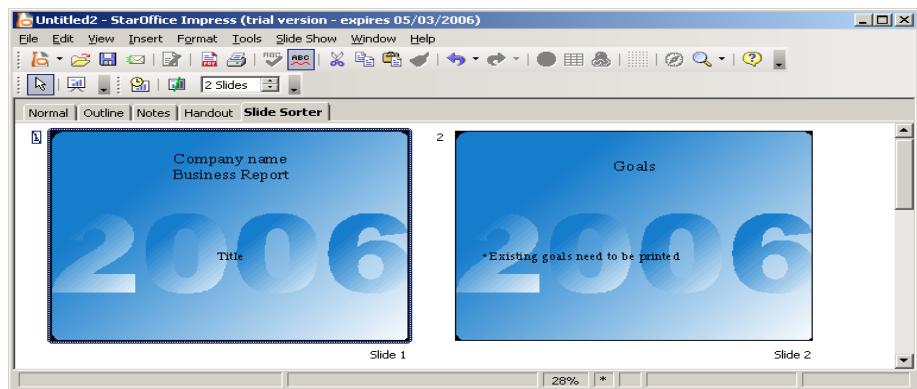


Fig 9.37 Hidden Slide in Slide View

9.4.3 To show a hidden slide

Select the slide(s) that you want to hide form the **Slides Pane**. Choose **Slide Show → Show/Hide Slide** to show the slide in the slide show. This is shown in figure 9.38.

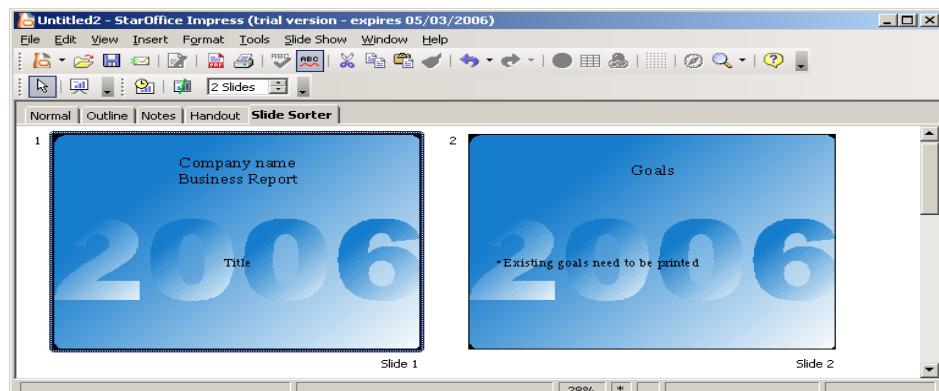


Fig 9.38 Shown Slide in Slide view

9.4.4 Rehearse Timings of Slide Changes

StarOffice assists you in defining the right rehearse timings for automatic slide changes. StarOffice records the display time for each slide, so the next time you play the show with automatic slide changes, the timing will be as recorded.

To record a show with rehearse timings:

- Open a presentation, and switch to **Normal View**.
- Start the show with the **Rehearse Timings** from **Slide Show** menu. You see the first slide and a timer in the bottom left corner as shown in the figure 9.39.
- When it is time to advance to the next slide, click the timer. Continue for all slides in your presentation.
- StarOffice has recorded the display time for each slide.
- If you want the whole presentation to auto-repeat, open the menu **Slide Show → Slide Show Settings**. A window appears as shown in the figure 9.40.
- Select **Auto** and then click **OK**.

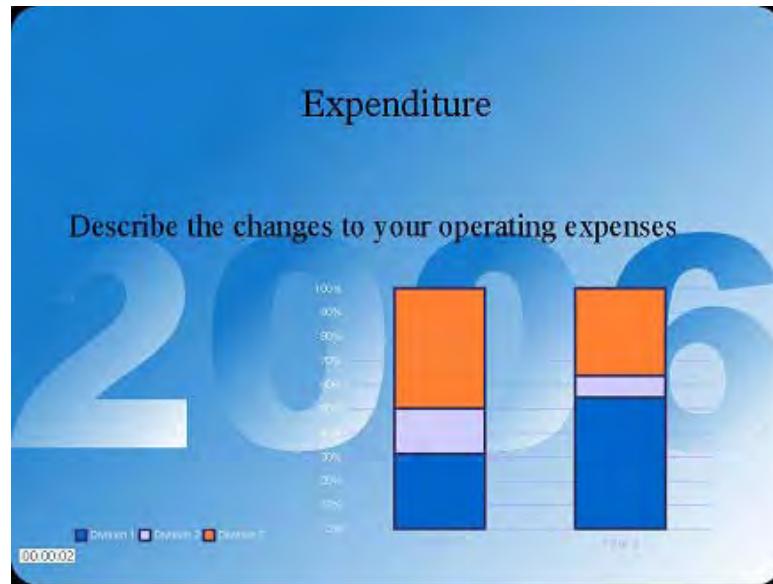


Fig 9.39 Rehearse Timings in Slide Show

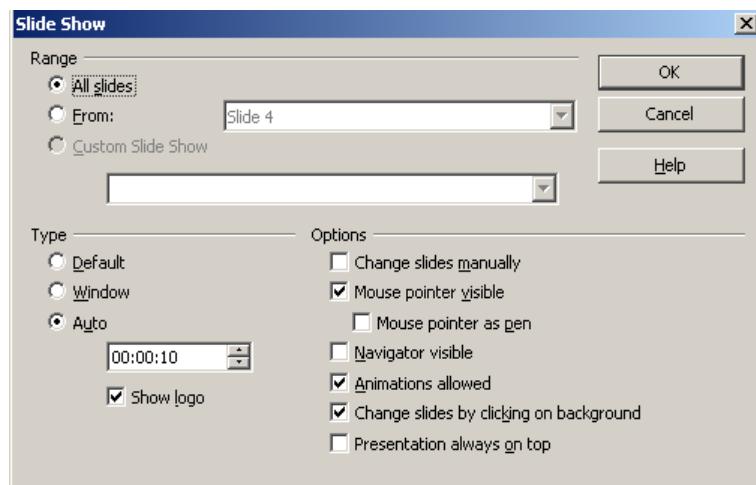


Fig 9.40 Slide Show Type

9.5 Printing Presentations

9.5.1 Default Printer Settings

To set the default printing options for StarOffice Impress, choose **Tools → Options → StarOffice Impress → Print**. A window as shown in the figure 9.41 appears. Any change made in this window is set as the default setting for the printer.

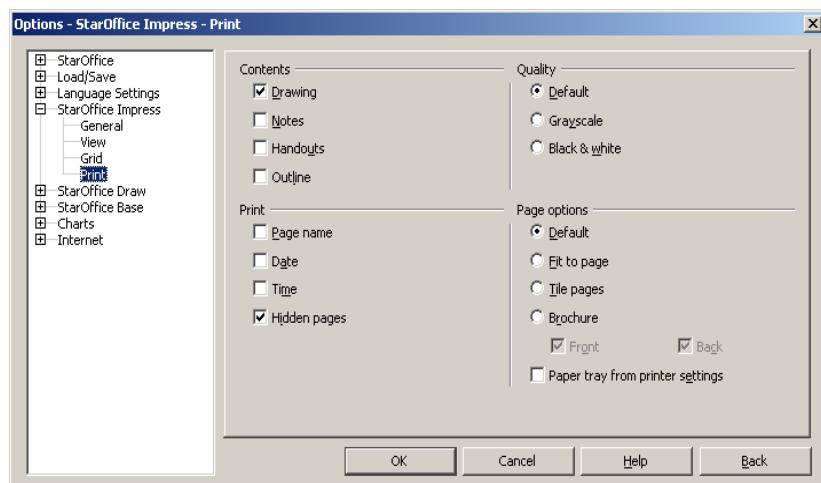


Fig 9.41 Printer Options window

9.5.1.1 Setting printer options for the current presentation

Choose **File → Print**. (A window as shown in the figure 9.42 appears.)

Click **Options**, and then select the printer options.

These settings override the default printer options in **Tools → Options → StarOffice Impress → Print** for the current print job only.

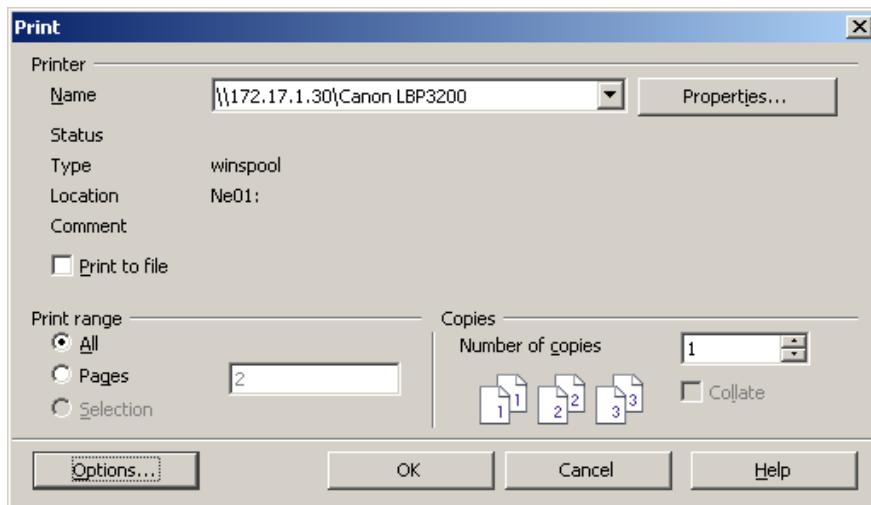


Fig 9.42 Printer Options window for Current Presentation

9.5.1.2 Printing a range of slides

Choose **File → Print**.

In the **Print range** area, click **Pages**.

Enter the numbers of slides to print in the **Pages** box, and then click **OK**.

For example to print the 3rd, 4th and 5th slide enter 3, 4, 5 or 3-5 in the pages box as shown in the figure 9.43.

In StarOffice, you can print the current document by clicking the **Print File Directly** icon in the **Function Bar**. The document will be printed immediately according to the printer default settings, without a dialog appearing.

To print in StarOffice, choose **File → Print** or press **Ctrl + P**. The Print dialog opens. Use this to set your printing options, for example, whether to print a selected range of pages, individual pages or all of the pages in the document.

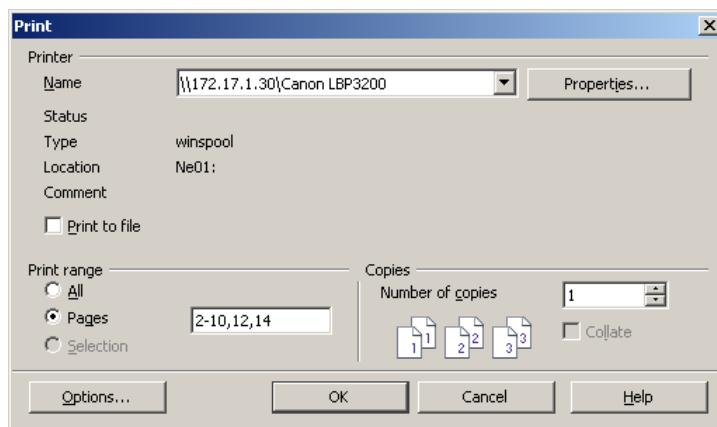


Fig 9.43 Printing Options for printing a range of slides

9.5.1.3 Printing a Slide to Fit a Paper Size

You can reduce the size of a slide when you print, so that the slide can fit on a printed page.

Open the document that you want to print.

In Normal View, choose **Format → Page**, and then **Page** tab. (figure 9.44)

In **Layout settings** area, select the **Fit object to paper format** check box.

In the **Paper format** area, select a Format.

Click **OK**.

The slide is resized to fit the printed page, while maintaining the relative positions of the objects on the slide.

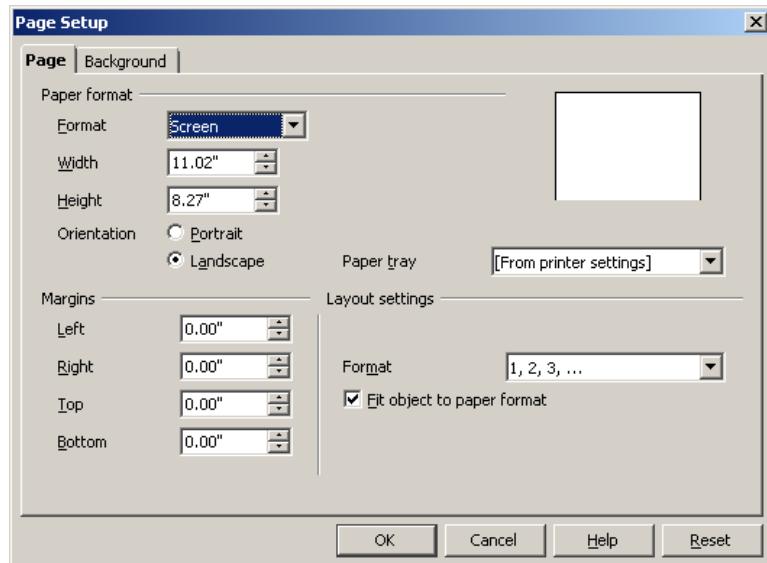


Fig 9.44 Page Setup for Printing a Slide to fit paper size

9.5.2 Creating and Printing Handouts

If you want to provide handouts you can use the **Handout View** mode. Since the handouts contain both the individual slides and space for notes, they can be a very helpful presentation aid.

Click the **Handout View** tab in the view bar. Open the **Layout Pane** in **Tasks Pane**. Choose a layout to specify how many slides are printed on a single sheet of paper as shown in the figure 9.45.

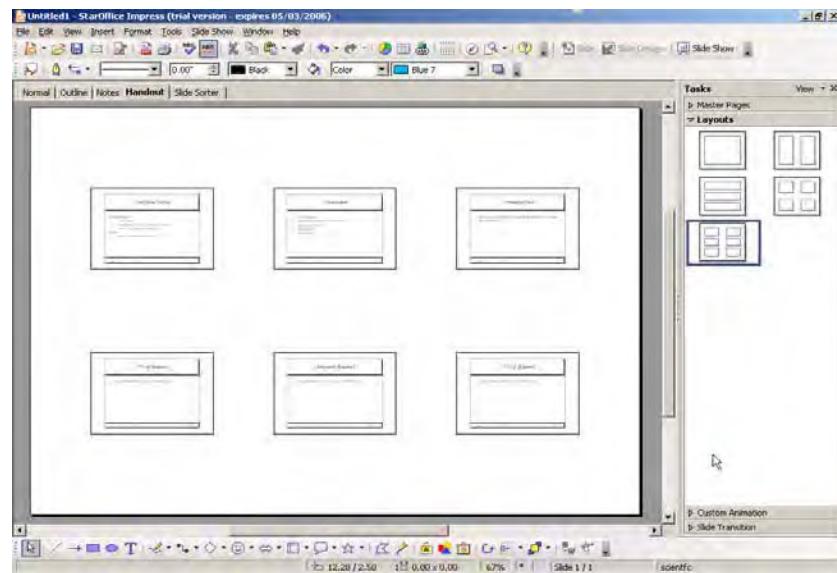


Fig 9.45 Printing Handouts

To print them, choose **File → Print** and click **Options** to define the print settings.

9.5.3 Organizing and Printing Notes

Enter notes for individual slides in the **Notes** view. The notes view is shown in the figure 9.46.

You can access the **Notes** view in the view bar.

To print slide notes:

1. Choose **File → Print** and click **Options**.
2. In the **Printer Options** dialog, select **Notes** in the **Contents** area and click **OK**.
3. In the **Print** dialog, select the slides that you want to print and click **OK**.

Remember to clear the **Notes** check box in the **Printer Options** dialog if you do not want to include notes in the print out. The settings in Printer Options apply only to the current document. If you want specific settings for all presentations, choose **Tools → options → StarOffice Impress → Print**.

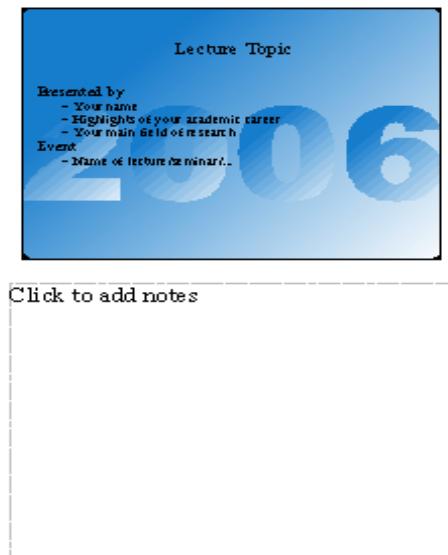


Fig 9.46 Entering Notes for Printing

Using the Navigator, you can move from slide to slide quickly. Open Navigator by choosing **Edit → Navigator** or by clicking the navigator icon  in the function bar. The Navigator window as shown in figure 9.47 appears. Double-click a slide title to jump to that slide.



Fig 9.47 Navigator window

9.5.4 Exporting Presentations

StarOffice Impress automatically starts a wizard to help you to produce an attractive HTML presentation. A number of **HTML** pages are created that are connected to one another by hyperlinks and in which the graphics are saved as GIF or JPEG images. You can work on these HTML pages in the text module of StarOffice to give them headings and additional hyperlinks, for example.

Choose **File → Export**.

Select the file format as **HTML Document (StarOffice Impress)**.

Enter a file name and click **Save**.

This opens the **HTML Export** wizard. Figure 9.48 shows the opening screen of the HTML Export wizard.

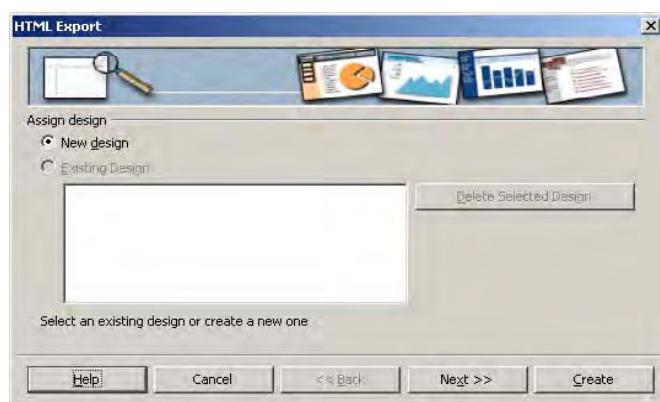


Fig 9.48 HTML Export Wizard

Select the **New Design** option, and click Next to see the screen as shown in the figure 9.49.

In the **Publication Type option**, select **Standard HTML format** to create html pages without frames. Check **Options** checkbox to have a title page.



Fig 9.49 Choosing Publication Type

The next screen (figure 9.50) allows you to set the size of the display. Select GIF or JPEG format to save the pictures in your presentation. The medium resolution setting is the standard resolution, so select it and click the **Next** button.

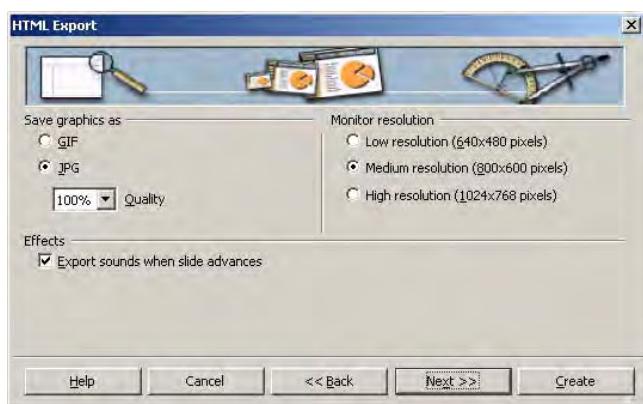


Fig 9.50 Setting Display Size

Your next screen choice allows you to enter contact information. Enter it if you wish. Click the **Next** button to see the screen as shown in the figure 9.51.



Fig 9.51 Entering Contact Information

Now, the screen allows you to pick the graphics to be used in the Web site navigation bar. Pick the buttons that best match your presentation's background. Click **Next** to see the screen as shown in the figure 9.52.



Fig 9.52 Selecting Button Style

Select **Use browser colors**, to apply the colours supported by browsers (figure 9.53) to the html pages and click **Create** button. You will be prompted to save all of your answers in the wizard as an HTML design. Name the design and click **Save** button. Html pages will be created in the specified directory. You can open the starting page and navigate to other pages.



Fig 9.53 Selecting Color Scheme

Summary

- A slide show is a series of slides, or pages, that present information on a specific topic.
- A presentation is used while speaking to a group, with a presentation to support and organize your information.
- Some presentations, or slide shows, can be used without a speaker, like a collection of photographs.
- Creating a Presentation.
- A presentation can be created using a template or can be created from scratch.
- An automatic presentation flips through the slides at a defined duration until the Escape key is pressed.
- Normal, Outline, Notes, Handout, Slide Sorter views helps us to work with slides in ease to different needs.
- A presentation can contain different type of objects like Picture, Movies, Sound, Chart, Spreadsheet and other OLE objects.
- A presentation can be exported in different format like Web page, PDF, SWF, JPEG and so on.
- Slides in Impress can be designed according to different needs, by using Color, Gradient, Hatching and Bitmap Image styles.
- A master slide determines the text formatting style for the title and outline and the background design for individual slides.

- Like slides, Objects in your slide can have various effects, like rolling into your presentation from the left side, the text can be slowly drawn onscreen, and so on using Custom Animation Effects.
- Custom Slide Show allows you to display important slides during a presentation.
- StarOffice Impress allows you to start slide shows from the current slide as well as hide slides during a slide show.
- Slides in a presentation can be printed as a handout, so that several slides can be printed on a single page of paper.
- StarOffice Impress enables Media Player where you can preview movie and sound files as well as insert these files into the current presentation slide
- The Media Player embedded in StarOffice Impress supports different audio and video file formats.

Exercises

Fill in the blanks

1. A ‘slide show’ is a series of pages that are _____
2. A presentation can be created from scratch or from _____
3. Five types of views are Normal, Outline, Notes, _____ and _____
4. _____ gives effect to an object in a slide.
5. In _____ view mode, all the slide titles will appear in a list along with the headings and sub-topics.
6. By pressing _____ key in the keyboard the view of the slide can be enlarged.
7. To select an object that is covered by another object, hold down _____ key and click the object.
8. _____ slide determines the text formatting style for the title and outline.
9. _____ window allows us to quickly jump from one slide to other slide or move between open files.
10. _____ is used preview movie or sound files in a slide

Answer the following

1. Define briefly about Impress and describe how to create a presentation.
2. List and describe the features of Impress.
3. Explain the steps of Incorporating Slide Show Effects.
4. Explain the steps of exporting a presentation as web pages.
5. What is custom Animation? Explain the process of animating objects in a slide.
6. What is slide transition? Explain the process of applying transition to slides.
7. How to include pictures, movies and other OLE objects in a presentation?
8. What is 'Rehearse Timings'? Explain in detail.
9. Explain about 'Custom Slide Show' in detail.
10. Explain how to print a range of slides and also explain how to print a slide to fit a paper size?

APPENDIX

FURTHER READING

StarOffice

The **docs.sun.com** Web site enables you to access Sun technical documentation online. You can browse the docs.sun.com archive or search for StarOffice specific book title.

The URL is <http://docs.sun.com>.