

CBSE CLASS 10

Information Technology

Subject Code: 402

Complete Study Notes

Unit 1 & Unit 2 — Part B (Subject Specific Skills)

Board	Central Board of Secondary Education (CBSE)
Class	X (10th Standard)
Subject	Information Technology (IT) — Code 402
Software	LibreOffice Writer & LibreOffice Calc
Session	2024-25 / 2025-26 (Latest Syllabus)
Units Covered	Unit 1: Digital Documentation Advanced Unit 2: Electronic Spreadsheet Advanced
Exam Marks	Unit 1 — 8 Marks Theory Unit 2 — 10 Marks Theory

These notes are based on the **latest CBSE IT 402 syllabus** using **LibreOffice** tools. Includes all key definitions, important points, shortcut keys, comparison tables, and quick revision material.

TABLE OF CONTENTS

UNIT 1 — Digital Documentation Advanced (LibreOffice Writer)

- ◆ Ch 1: Introduction to Styles
- ◆ Ch 2: Working with Images & Drawing Objects
- ◆ Ch 3: Advanced Features — Templates, Table of Contents, Mail Merge
- ◆ Shortcut Keys — LibreOffice Writer

UNIT 2 — Electronic Spreadsheet Advanced (LibreOffice Calc)

- ◆ Ch 4: Analyse Data — Consolidate, Subtotals, Scenarios, Goal Seek
- ◆ Ch 5: Using Macros in Spreadsheet
- ◆ Ch 6: Linking Spreadsheet Data & Hyperlinks
- ◆ Ch 7: Share and Review a Spreadsheet
- ◆ Shortcut Keys & Quick Revision — LibreOffice Calc

UNIT 1: Digital Documentation (Advanced) LibreOffice Writer

Overview: Covers advanced LibreOffice Writer features — Styles, Images, Templates, Table of Contents, and Mail Merge. **Theory: 8 Marks | Practical: 5 Marks**

Chapter 1: Introduction to Styles

A **Style** is a set of formats that you can apply to selected pages, text, frames, or other elements in a document to quickly change their appearance. Instead of formatting individually, a style applies many formats in one step.

5 Types of Styles in LibreOffice Writer:

Term	Description
Paragraph Style	Controls alignment, tab stops, line spacing, borders of a paragraph.
Character Style	Affects selected text — font, size, bold, italic formatting.
Page Style	Controls margins, headers, footers, borders, backgrounds of a page.
Frame Style	Controls position, size, background and borders of frames.
List Style	Applies numbering or bullet point formatting.

Opening Styles & Formatting Window:

- Press **F11** (shortcut key)
- Click Format → Styles & Formatting
- Click the Styles icon in the Sidebar

Applying a Style:

- Step 1: Select the text/paragraph.
- Step 2: Press F11 to open the Styles window.
- Step 3: Double-click on the desired style to apply it.

Fill Format Mode:

Fill Format is a feature that copies formatting from one text to another quickly, without returning to the Styles window each time. It works like a 'format painter'. Activate it from the Styles window, click source text, then click target text.

Creating a New Custom Style:

- Step 1: Open Styles window (F11).

- Step 2: Right-click an existing style → select New.
- Step 3: Name the style and set formatting options.
- Step 4: Click OK to save.

Note: To update an existing style: Right-click the style → Update Style. Shortcut: F11 opens Styles window.

Chapter 2: Working with Images & Drawing Objects

LibreOffice Writer allows inserting and manipulating images, shapes, charts, and diagrams. A **digital image** is represented in pixels.

Ways to Insert an Image:

Term	Description
Image Dialog Box	Insert → Image → From File. Standard/general procedure.
Drag and Drop	Open file browser, drag the image into the document.
Copy and Paste	Copy image from elsewhere, place cursor in document, press Ctrl+V.
Insert by Linking	Saves only the link (path) of image, not the image itself — saves space.

Image Operations (via Image Toolbar):

Term	Description
Resizing	Use sizing handles (corner squares) to increase/decrease image size.
Cropping	Removes unwanted parts of the image. Available in Image Toolbar.
Rotating	Rotate image using the rotation handle in LibreOffice Writer.
Grouping	Groups multiple objects into one — Format → Group. Does not affect size/position.
Positioning	Controlled by 4 settings: Horizontal, Vertical, Wrap, and Anchor.

Image Filters in LibreOffice Writer (12 filters):

Term	Description
Invert	Negates/inverts colors of the image
Smooth	Softens contrast of the image

Sharpen	Increases/sharpens contrast of the image
Remove Noise	Removes single pixels (noise) from the image
Aging	Produces a gray-scale, aged look
Posterize	Reduces color depth
Pop Art	Changes colors in a pop-art style
Charcoal Sketch	Converts to charcoal-like sketch
Relief	Creates embossed effect
Mosaic	Pixelates the image
Solarization	Partially inverts colors
Watercolor	Gives a watercolor painting effect

Drawing Objects:

- To display the Drawing Toolbar: View → Toolbars → Drawing.
- Click and drag to create shapes, flowcharts, callout boxes, lines, etc.
- Drawing objects are different from images — they are created inside Writer.

***Note:** Insert by Linking saves the path of the image, NOT the image itself. If the image file is moved, the link will break. Best used when same image appears multiple times.*

Chapter 3: Advanced Features of Writer

3A. Templates

A **Template** is a predefined layout containing sample content, themes, colours, font styles, and backgrounds. It provides an initial foundation to create a document quickly.

Term	Description
Template extension	.ott (LibreOffice Writer) .dotx or .dot (MS Word)
Use case	Create business letters, reports, invoices without formatting from scratch.

Using a Template:

- Step 1: File → New.
- Step 2: Click on Installed Templates in the dialog.
- Step 3: Select the template → Click Create.

3B. Table of Contents (TOC)

A **Table of Contents** is an organized listing of the document's chapters and sections with page numbers. LibreOffice Writer creates it **automatically** from headings.

- Writer supports **10 heading levels**: Heading 1 to Heading 10.
- Heading 1 = top-level; Heading 2, 3... = sub-levels.
- Path to insert TOC: Insert → Table of Contents & Index → Table of Contents.
- Structure line buttons: E# (chapter number), E (entry text), T (tab stop), # (page number).

3C. Mail Merge

Mail Merge is a feature used to send personalized letters/emails to multiple people by combining a document template with a data source (like a spreadsheet).

Term	Description
Document Area	Template file — holds the message and merge field placeholders.
Data Source	Data file (e.g., Calc spreadsheet) with names, addresses, etc.
F4 Key	Opens the database/datasource window for mail merge in Writer.
Labels	Name & address info printed on envelopes/letters for each recipient.
.ott file	Template file extension used in mail merge as the document area.

Steps for Mail Merge:

- Step 1: Create the main document (letter) in Writer.
- Step 2: Connect to a data source (Calc spreadsheet with recipient data).
- Step 3: Insert merge fields (e.g., <<Name>>, <<Address>>) in the template.
- Step 4: Preview merge results.
- Step 5: Print or save as individual documents.

Note: F4 key opens the database window while implementing Mail Merge in Writer. Mail Merge CANNOT be performed in LibreOffice Calc — only in Writer.

Important Shortcut Keys — LibreOffice Writer

Term	Description
F11	Open Styles & Formatting window
F4	Open database window (for Mail Merge)
Ctrl + S	Save the document

Ctrl + Z / Y	Undo / Redo
Ctrl + C / V	Copy / Paste
Ctrl + P	Print document
Ctrl + F	Find & Replace
Insert → Image	Insert an image
Insert → TOC	Insert Table of Contents
Format → Group	Group selected drawing objects

UNIT 2: Electronic Spreadsheet (Advanced) LibreOffice Calc

Overview: Covers advanced LibreOffice Calc — Consolidate, Subtotals, Scenarios, Goal Seek, Macros, Linking Data, Sharing and Reviewing Spreadsheets. **Theory: 10 Marks | Practical: 5 Marks**

File Extension: .ods | **Calc can:** Store data, perform calculations, create charts, analyse data, link data, share & review.

Chapter 4: Analyse Data — Consolidate, Subtotals, Scenarios & Goal Seek

4A. Consolidate

Consolidate combines data from multiple sheets/ranges into one master sheet to summarize information. Supports SUM, AVERAGE, COUNT, MAX, MIN, etc. Default function is **SUM**.

- Path: Data → Consolidate
- 'Link to source data' — if checked, target sheet updates when source changes.
- Can consolidate by row/column labels (category-wise).
- Useful for merging data from multiple branches/departments.

4B. Subtotals

Subtotal automatically groups data and applies summary functions on categories. It creates a hierarchical outline of the data.

- Path: Data → Subtotals
- Creates groups automatically (no manual grouping needed).
- Can sort data in Ascending or Descending order.
- Handles up to **3 arrays** in labelled columns.
- Click – (**minus**) to collapse (hide); + (**plus**) to expand data.
- Remove outline: Data → Group and Outline → Remove Outline.

4C. Scenarios (What-If Analysis)

A **Scenario** is a set of values that Calc substitutes in cells to perform what-if analysis. Create multiple scenarios (e.g., Best Case, Worst Case) and switch between them to compare results.

- Path: Tools → Scenarios
- Each scenario stores different values for a set of input cells.
- Multiple scenarios can exist in one spreadsheet.
- Used to compare different possible outcomes for the same formula.

4D. Goal Seek

Goal Seek works backwards — you set a **desired result** for a formula and it finds the **input value** needed to achieve that result.

- Path: Tools → Goal Seek

- Example: Profit = Revenue - Cost. Set desired Profit = 50,000 → Goal Seek finds Revenue needed.
- Changes only **ONE** variable (input cell) at a time.
- Goal Seek is part of the What-If Analysis toolkit.

Scenarios vs Goal Seek — Comparison:

Feature	Scenarios	Goal Seek
Purpose	Compare multiple sets of values	Find input for a desired output
Variables	Multiple input cells	Single input cell only
Direction	Forward (input → output)	Backward (output → input)
Path	Tools → Scenarios	Tools → Goal Seek

Chapter 5: Using Macros in Spreadsheet

A **Macro** is a **sequence of recorded actions** (keystrokes, clicks, commands) that can be replayed automatically. Macros save time by automating repetitive tasks. LibreOffice uses **LibreOffice Basic** as its macro programming language.

Enabling Macro Recording:

- Path: Tools → Options → LibreOffice → Advanced
- Check 'Enable Macro Recording' option.
- Check 'Enable Basic IDE' option.
- Both must be enabled before recording.

Recording a Macro:

- Step 1: Tools → Macros → Record Macro.
- Step 2: Perform the actions you want to automate.
- Step 3: Click Stop Recording.
- Step 4: Name and save the macro in the dialog.

Running a Macro:

Path: **Tools** → **Macros** → **Run Macro** → Select macro → Click Run.

Actions that **CANNOT** be recorded in a Macro:

- Transferring actions between two different windows.
- Mouse-based selections (only keyboard selections are recorded).
- Drag-and-drop actions.

Macro as a Custom Function:

A macro written in **LibreOffice Basic** can be used as a custom function in Calc cells, just like built-in functions (SUM, AVERAGE). This lets you define new functions beyond the defaults.

Where Macros are Stored:

- In the current document only
- In a user-defined macro library
- Globally (shared across all LibreOffice documents)

Note: Macros work in Calc, Writer, and can read Excel files. Always be cautious of security risks when running macros from unknown sources. LibreOffice Basic is the programming language for Macros.

Chapter 6: Linking Spreadsheet Data

LibreOffice Calc allows creating links between cells across different sheets (within same file) or across different files/documents.

Types of Hyperlinks:

Term	Description
Internet Hyperlink	Links to a website URL. e.g., https://www.cbse.nic.in
Mail Hyperlink	Links to an email address (mailto:example@mail.com).
Document Hyperlink	Links to another document or a specific location within a document.
New Document Link	Creates a new document and links to it.
Absolute Hyperlink	Contains full path/URL — works regardless of file location.
Relative Hyperlink	Contains path relative to current file — may break if file is moved.

Inserting a Hyperlink:

- Path: Insert → Hyperlink
- Dialog opens with: Internet, Mail & News, Document, New Document options.
- Use Absolute hyperlinks when file location may change.
- Use Relative hyperlinks when files are always kept together.

Sheet Reference Formula (Linking Across Sheets):

Syntax: **SheetName.CellAddress**

Example: **=Sheet2.B5** refers to cell B5 in Sheet2 of the same file.

Chapter 7: Share and Review a Spreadsheet

7A. Sharing a Spreadsheet:

LibreOffice Calc allows multiple users to work on the same spreadsheet simultaneously.

- Path: Tools → Share Document

- A dialog appears to activate or disable sharing.
- Multiple users can edit the file at the same time when sharing is ON.
- File must be saved in a shared/network location for others to access.

7B. Record Changes (Track Changes):

The **Record Changes** feature tracks and highlights all edits made by any user in the spreadsheet.

- Path: Edit → Track Changes → Record Changes
- All changes are highlighted/marked in the document.
- You can Accept or Reject each tracked change.
- Useful in collaborative/multi-user editing.

7C. Merging and Comparing Spreadsheets:

To compare two workbooks and track differences line by line, use the **Spreadsheet Compare** feature.

LibreOffice Calc allows merging changes from multiple copies of the same spreadsheet.

- Used when the same spreadsheet was sent to multiple reviewers.
- Merging combines all their changes into one file.
- Comparing shows differences between two versions side by side.

Important Shortcut Keys & Quick Reference — LibreOffice Calc

Term	Description
Ctrl + S	Save the spreadsheet
Ctrl + Z / Y	Undo / Redo
Ctrl + Home	Go to cell A1
Ctrl + End	Go to last used cell
F4	Toggle absolute/relative cell reference
Ctrl + Shift + Enter	Enter an array formula
Data → Consolidate	Combine data from multiple sheets
Data → Subtotals	Create automatic subtotals/grouping
Tools → Scenarios	Create/manage What-If scenarios
Tools → Goal Seek	Find input value for desired result
Tools → Macros → Record	Start recording a macro
Tools → Share Document	Enable multi-user sharing
Edit → Track Changes	Enable record changes feature

Insert → Hyperlink	Insert a hyperlink in the cell
.ods	File extension for LibreOffice Calc spreadsheet

Quick Revision — Important File Extensions

Term	Description
.odt	LibreOffice Writer document
.ott	LibreOffice Writer template
.ods	LibreOffice Calc spreadsheet
.odb	LibreOffice Base database
.odg	LibreOffice Draw document
.odp	LibreOffice Impress presentation

Note: Mail merge operation — CANNOT be performed in Calc (.ods). It is done in Writer (.odt). Macro language used in LibreOffice is LibreOffice Basic. Default Consolidate function is SUM.