

Comprehensive Study Notes

Office Automation Tools (Unit 3)

Class XI — Information Technology

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1 Word Processing (OpenOffice Writer)

1.1 Introduction to Word Processing

Definition: A word processing software is an application program specifically engineered for creating, editing, formatting, viewing, storing, and printing text-based electronic documents. Beyond raw text manipulation, modern word processors support embedded graphics, complex tabular grids, mathematical formulas, hyperlink navigation, and dynamic document indexing to produce professional letters, academic research papers, newsletters, and brochures.

Relevance over Typewriters: Traditional manual typewriting lacked flexibility—errors required complete manual retyping, layout modifications were impossible after typing, and formatting options were extremely constrained. Digital word processing provides real-time text manipulation, dynamic paragraph alignment, automated spell-checking, search and replace capabilities, and electronic archiving for effortless document duplication.

OpenOffice Writer Overview: Apache OpenOffice Writer is a premier free, open-source word processor available across Windows, Linux, and macOS platforms. It natively saves documents using the OpenDocument Text format with the file extension `.odt`. It also provides full import/export compatibility with proprietary formats such as Microsoft Word (`.doc`/`.docx`).

Open Source Software Advantage

OpenOffice Writer is completely free and open-source under the Apache License. It provides enterprise-grade word processing functionality without licensing fees, ensuring accessibility across educational institutions and public organizations.

1.2 Starting OpenOffice Writer & Main Screen Architecture

To launch OpenOffice Writer in Windows:

1. **Start Menu Method:** Click Start → Programs → OpenOffice → OpenOffice Writer.
2. **Desktop Shortcut Method:** Double-click the main **OpenOffice** icon on the desktop and select **Text Document**.

1.2.1 Key Components of Writer Main Screen

- **Title Bar:** Positioned at the very top of the window; displays the active file name (e.g., `Untitled 1.odt` or `Report.odt`) and application title (OpenOffice Writer).
- **Menu Bar / Tabs:** Positioned directly under the title bar, containing primary drop-down menu categories: *File, Edit, View, Insert, Format, Table, Tools, Window, Help*.
- **Ruler Bar:** Includes both Horizontal and Vertical rulers used to interactively configure page margins, paragraph indents, and custom tab stops.
- **Standard Toolbar & Formatting Toolbar:** Provides one-click visual icons for quick operations (New, Open, Save, Print, Cut, Copy, Paste, Font Family, Size, Bold, Alignment, etc.).

- **Work Area / Canvas:** The primary blank editable workspace where document text and graphic objects are entered and positioned.
- **Scroll Bars:** Horizontal and vertical sliders enabling smooth navigation through long multi-page documents.
- **Status Bar:** Located at the bottom of the screen; displays live document metadata including current page number, total page count, zoom slider, and language dictionary settings.

1.3 Detailed Breakdown of Writer Tabs & Operations

1.3.1 File Tab

Controls overall document lifecycle operations including file creation, storage, printing, and format export.

- **New (File → New → Text Document):** Creates a clean, empty text document instance. Shortcut: Ctrl + N.
- **Save vs. Save As:**
 - **Save (Ctrl + S):** Writes current edits to the existing file path silently.
 - **Save As (Ctrl + Shift + S):** Mandatory when saving an untitled file for the first time, saving a copy under a new name, or selecting a new file format (.odt, .doc, .pdf).
- **Page Preview (File → Page Preview):** Renders a full-page layout preview showing exact margins and running headers prior to physical printing.
- **Printer Settings (File → Printer Settings):** Configures active target printers, paper tray selection, and orientation.
- **Print (File → Print):** Opens the Print dialog to choose page ranges (e.g., 1-4, 8), number of copies, and multi-page layout printing. Shortcut: Ctrl + P.

1.3.2 Edit Tab

Provides text manipulation, search, and change-reversal tools.

- **Move Text (Cut & Paste):** Highlight text → Edit → Cut (Ctrl + X) → reposition cursor → Edit → Paste (Ctrl + V). Removes text from source and inserts at target.
- **Copy Text (Copy & Paste):** Highlight text → Edit → Copy (Ctrl + C) → reposition cursor → Edit → Paste (Ctrl + V). Preserves original source text while duplicating at target.
- **Find & Replace (Edit → Find & Replace):** Scans the document for specific words and replaces individual or all occurrences with new text. Shortcut: Ctrl + F.
- **Undo (Ctrl + Z) & Redo (Ctrl + Y):** Reverses the immediate preceding edit or re-applies a reversed edit.

1.3.3 View Tab

Controls workspace screen layout and user interface component visibility.

- **Toolbars** (View → Toolbars): Toggles display of standard, formatting, drawing, table, and find toolbars.
- **Status Bar / Ruler / Sidebar**: Shows or hides the bottom status bar, horizontal/vertical rulers, and contextual property sidebar.
- **Zoom**: Adjusts document display magnification percentage on screen.

1.3.4 Insert Tab

Inserts dynamic content elements into the document at the current active cursor location.

- **Header & Footer** (Insert → Header / Footer → Default): Adds persistent content areas at top/bottom margins across all pages.
- **Fields** (Insert → Fields): Inserts dynamic metadata such as Page Number, Page Count, Date, Time, Title, and Author Name.
- **Hyperlink** (Insert → Hyperlink): Converts selected text into an interactive link pointing to a Web URL, local file, document bookmark, or mail address. Shortcut: Ctrl + K.
- **Table of Contents** (Insert → Indexes & Tables → Indexes & Tables): Automatically compiles an updated document hierarchy based on applied heading styles.
- **Table** (Insert → Table): Inserts a grid specified by rows and columns. Shortcut: Ctrl + F12.
- **Formula** (Insert → Object → Formula): Opens the OpenOffice Math equation editor for constructing complex mathematical expressions.

1.3.5 Format Tab

Applies visual styling to highlighted text, paragraphs, pages, and layout structures.

- **Character** (Format → Character): Configures Font Family, Typeface (Bold/Italic), Size, Font Color, Underline, and Background.
- **Paragraph** (Format → Paragraph): Adjusts Indentation, Line Spacing (Single, 1.5, Double), Paragraph Alignment (Left, Center, Right, Justified), and Borders.
- **Bullets & Numbering** (Format → Bullets & Numbering): Applies ordered numerical/alphabetical lists or unordered graphical symbol lists.
- **Page** (Format → Page): Configures paper orientation (Portrait vs. Landscape), margin sizes, page background colors, and header/footer parameters.

- **Change Case** (Format → Change Case): Converts text between Sentence case, lowercase, UPPERCASE, Title Case, and tOGGLE cASE.
- **Columns** (Format → Columns): Splits selected sections into multi-column layouts (e.g., 2-column or 3-column newspaper layout).

1.3.6 Table Tab

Provides tabular structure creation and grid cell manipulation options.

- **Insert / Delete Rows & Columns**: Adds or deletes rows above/below or columns left/right of active cells.
- **Merge Cells & Split Cells**: Combines adjacent cells into a single unified cell or divides a cell into multiple sub-cells.
- **Convert** (Table → Convert): Converts delimited text into a structured table or extracts table content into plain text.

1.3.7 Tools, Window, and Help Tabs

- **Spelling & Grammar** (Tools → Spelling and Grammar): Runs dictionary-based spell checks with suggestion options. Shortcut: F7.
- **Word Count** (Tools → Word Count): Reports total word count and character count for selected text or the full document.
- **Window Tab**: Manages multi-document window switching and new window creation.
- **Help Tab** (F1): Accesses searchable OpenOffice documentation and feature guides.

Table 1: Writer Quick Keyboard Shortcuts Summary

Shortcut Key	Command / Action Performed
Ctrl + N	Create New Text Document
Ctrl + O	Open Existing Document
Ctrl + S	Save Active Document
Ctrl + Shift + S	Open Save As Dialog Box
Ctrl + P	Open Print Dialog Box
Ctrl + F	Open Find & Replace Dialog Box
Ctrl + Z / Ctrl + Y	Undo / Redo Preceding Operations
Ctrl + X / C / V	Cut / Copy / Paste Operations
Ctrl + K	Insert Hyperlink
Ctrl + F12	Insert New Table Grid
F7	Run Spelling and Grammar Checker

2 Spreadsheet (OpenOffice Calc)

2.1 Introduction to Spreadsheets

Definition: A spreadsheet application is an interactive electronic data grid consisting of horizontal rows and vertical columns used to store, organize, manipulate, analyze, and mathematically process numerical and categorical data.

Relevance: Computerized spreadsheets replace manual paper ledger books. They automate financial calculations, support dynamic re-computation via formulas, generate graphical chart visualizations, and manage extensive databases across banking, accounting, education, and inventory domains.

OpenOffice Calc Overview: Apache OpenOffice Calc is a free, open-source spreadsheet program. Its default file standard is the OpenDocument Spreadsheet format with extension `.ods`. Common alternatives include Microsoft Excel (`.xlsx`) and Google Sheets.

2.2 Installing OpenOffice Calc

Calc is distributed free as part of Apache OpenOffice suite. Installation procedure on Windows:

1. Open official download link: <https://www.openoffice.org/download/index.html>.
2. Select Target Operating System (Windows x86/x64) and preferred language.
3. Click **Download full installation** to acquire executable file (`.exe`).
4. Run setup: Double-click installer executable → Click **Next** → Click **Unpack**.
5. Complete setup wizard: Enter User Name & Organization → Choose **Typical** setup type → Click **Install** → Click **Finish**.
6. Launch OpenOffice from Start Menu / Desktop shortcut and select **Spreadsheet**.

2.3 Main Screen Architecture & Data Types

2.3.1 Calc Screen Components

- **Title Bar:** Shows workbook name (e.g., Untitled 1.ods), extension, and application title.
- **Row & Column Headers:** Columns are lettered alphabetically (A, B, ..., AMJ up to 1,024 columns); Rows are numbered sequentially (1, 2, ..., 1,048,576).
- **Active Cell & Cell Reference:** The highlighted grid box bounded by a heavy black border. A cell's unique address is formed by its Column Letter followed by Row Number (e.g., C4 represents Column C, Row 4).
- **Formula Bar:** Contains the **Name Box** (displays active address C4), **Function Wizard** ($f(x)$), **Sum** (Σ), **Function** ($=$), and the long **Input Line** for editing text or formulas.

- **Sheet Tabs:** Located at the bottom left; allows navigation between multiple worksheets (Sheet1, Sheet2) within a single workbook file.
- **Status Bar:** Displays summary aggregations (e.g., Sum, Average, Count of selected cells) and Zoom controls.
- **Sidebar:** Contextual panel on the right providing rapid access to Properties, Styles, Gallery, and Navigator decks.

2.3.2 Three Core Data Types in Calc

1. **Labels (Text):** Alphabetic or alphanumeric text entries (e.g., "Student Name", "COMP123"). Labels are automatically **left-justified** in cells and cannot be used in mathematical calculations.
2. **Values / Numbers:** Pure numerical entries (e.g., 45, 98.6, -12). Values are automatically **right-justified** in cells.
3. **Formulas:** Expression strings starting strictly with an equals sign (=) used to compute mathematical or logical output (e.g., =A1+B1).

Formatting Numbers as Text

To force Calc to treat a numerical string (such as Phone Numbers, Aadhar IDs, or ZIP codes) as a Label rather than a calculated Value, prefix the entry with a single quotation mark ('). For example, entering '012345 preserves leading zeros and aligns text to the left without treating it as an integer.

2.4 AutoFill Feature & Series Generation

The **AutoFill** feature automatically generates sequential series or copies cell data without typing each entry manually.

Execution Method: Type initial value in a cell → hover over the bottom-right corner of the active cell highlight box until cursor turns into a solid black cross (**Fill Handle**) → drag the handle across adjacent target cells.

- **Sequential Number Series:** Type 1 in cell A1 and 2 in cell A2 → select both cells → drag fill handle downwards. Calc detects step +1 and fills 3, 4, 5, ...
- **Custom Step Series:** Type 2 in cell A1 and 4 in cell A2 → drag handle → generates even series 6, 8, 10, ...
- **Date/Day Series:** Type Monday → drag handle → fills Tuesday, Wednesday, ...
- **Custom Sort Lists:** Defined via Tools → Options → OpenOffice Calc → Sort Lists to populate custom lists (e.g., Month names, regional lists).
- **Constant Duplication:** Holding the Ctrl key while dragging the fill handle duplicates the exact initial value across cells.

2.5 Cell Referencing Modes

Cell referencing defines how cell addresses behave when formulas are copied across rows or columns using AutoFill or Copy-Paste.

Table 2: Comparative Analysis of Cell Referencing Types in Calc

Referencing Type	Syntax Example	Behavior Upon Copying / AutoFill
Relative Referencing	A1 or B5+C5	Addresses change dynamically relative to target destination position (Default mode in Calc).
Absolute Referencing	\$A\$1 or \$B\$5	Dollar signs (\$) freeze both column and row addresses. Addresses remain 100% fixed regardless of destination.
Mixed Referencing	\$A1 or A\$1	Freezes only the prefixed coordinate (\$A1 keeps column A fixed while row changes; A\$1 keeps row 1 fixed while column changes).

2.6 Formulas & Precedence of Operators

Formulas combine cell references, numbers, and arithmetic operators. **Order of Evaluation (Operator Precedence):**

1. Operations enclosed inside Parentheses ()
2. Exponentiation ^ or POWER()
3. Multiplication * and Division / (evaluated left to right)
4. Addition + and Subtraction - (evaluated left to right)

2.7 Built-in Predefined Functions

Functions are predefined formulas in Calc that accept parameters (arguments) and return a calculated result. All functions must begin with an = sign.

Table 3: Essential Predefined Calc Functions

Function Name	Syntax	Description & Output
SUM	=SUM(A1:A10)	Adds all numerical values within the specified cell range.
AVERAGE	=AVERAGE(B1:B10)	Calculates the arithmetic mean of numbers in the range.
MAX	=MAX(C1:C20)	Returns the maximum numerical value in the range.
MIN	=MIN(C1:C20)	Returns the minimum numerical value in the range.
COUNT	=COUNT(D1:D15)	Counts the total number of cells containing numerical values.
PRODUCT	=PRODUCT(A1:A5)	Multiplies all numbers supplied in arguments.
SQRT	=SQRT(16)	Computes positive square root of a number (Output: 4).
POWER	=POWER(2, 3)	Raises base to exponent power ($2^3 = 8$).
ROUND	=ROUND(45.678, 2)	Rounds a number to specified decimal places (Output: 45.68).
ABS	=ABS(-15)	Returns absolute positive value (Output: 15).

2.8 Data Manipulation: Sorting, Filtering, Charts, and Macros

2.8.1 Data Sorting

Arranges rows in ascending (A-Z, 0-9) or descending (Z-A, 9-0) order based on selected column criteria. Access via Data → Sort or Standard Toolbar icons. Supports multi-column sorting (up to 3 levels: *Sort by*, *Then by*, *Then by*).

2.8.2 Data Filtering

Temporarily hides rows that do not meet specific criteria while displaying matching records.

- **AutoFilter** (Data → Filter → AutoFilter): Adds drop-down menu arrows to header cells for quick selection filtering.
- **Standard Filter** (Data → Filter → Standard Filter): Allows complex conditional logic combining multiple criteria using logical **AND** (all conditions must be true) and **OR** (at least one condition must be true) operators.

2.8.3 Creating Charts and Graphs

Calc offers 10 primary chart categories (Column, Bar, Pie, Line, Scatter, Area, Bubble, Net, Stock, Column&Line).

Chart Wizard Workflow (Insert → Chart):

1. **Step 1: Chart Type:** Choose visual chart format (e.g., Column Chart for comparisons, Pie Chart for proportions, Line Chart for trends).

2. **Step 2: Data Range:** Confirm range coordinates and toggle series by rows or columns.
3. **Step 3: Data Series:** Customize individual data series labels and range sources.
4. **Step 4: Chart Elements:** Add Chart Title, Subtitle, X-axis label, Y-axis label, and configure Legend placement.

2.8.4 Macros in Calc

A **Macro** is a saved sequence of recorded user keystrokes, menu choices, and mouse actions that can be executed repeatedly to automate redundant tasks.

- **Record Macro:** Select Tools → Macros → Record Macro → perform tasks → click **Stop Recording** → save macro under **My Macros** in OpenOffice Basic.
- **Run Macro:** Select Tools → Macros → Run Macro → select macro name → click **Run**.

2.9 Printing Spreadsheets

Open File → Print (Ctrl + P). Options include printing *All Sheets*, *Selected Sheets*, or *Selected Cells*, specifying custom page ranges, and choosing copy quantities.

3 Presentation (OpenOffice Impress)

3.1 Introduction to Presentation Software

Definition: Presentation software provides tools to design, sequence, and display multimedia slide shows containing text, structural bullet lists, images, audio clips, video clips, tables, and graphic diagrams for group communication.

Relevance: Effective oral presentations require structured visual support. Presentation software enhances audience engagement through clear typography, multimedia integration, and controlled visual animation flow during lectures, seminars, and business meetings.

OpenOffice Impress Overview: Apache OpenOffice Impress is an open-source presentation tool. It saves presentations under the OpenDocument Presentation format with extension .odp.

3.2 Starting Impress & Screen Architecture

To start Impress: Start → Programs → OpenOffice → OpenOffice Impress.

3.2.1 Key Components of Impress Interface

- **Slide Pane:** Located on the left side; displays vertical thumbnail previews of all slides in the presentation. Enables slide reordering, duplicating, hiding, and deletion.
- **Work Area / Workspace:** Central area where individual slide content is authored.
- **Tasks Pane / Sidebar:** Positioned on the right side; provides direct access to Slide Layouts, Master Slides, Custom Animation, and Slide Transition settings.
- **Status Bar:** Shows current slide number, total slide count, applied slide design name, and zoom slider.

3.3 Six Primary Presentation Workspace Views

Impress provides six distinct viewing modes optimized for different design and presentation tasks:

Table 4: OpenOffice Impress Viewing Modes

View Name	Access Command	Primary Purpose & Functional Characteristics
Normal View	View → Normal	Main editing view used for typing text, adding images, and designing individual slides.
Outline View	View → Outline	Displays slide topic titles and bulleted text in a pure outline format for structural editing.
Notes View	View → Notes Page	Allows the presenter to type private speaker notes for each slide (invisible to audience during slideshow).
Handout View	View → Handout Page	Formats multiple slide thumbnails per printed sheet (e.g., 2, 4, or 6 slides per page) for printed audience handouts.
Slide Sorter View	View → Slide Sorter	Displays all slides in a grid of miniature thumbnails for easy drag-and-drop slide reordering.
Slide Show View	View → Slide Show (F5)	Displays the full-screen interactive slideshow presentation as seen by the audience.

3.4 Slide Master & Slide Layouts

- **Slide Master** (View → Master → Slide Master): The master template slide that defines baseline formatting rules (background color, logo placement, font styles, footer date/time, and page numbering) across **all slides** in the presentation simultaneously.
- **Slide Layouts** (Format → Slide Layout): Predefined content container templates (e.g., Title Slide, Title and Content, Two Content Comparison, Blank Slide).

💡 Slide Master Efficiency

Always configure the Slide Master before populating individual slides. Any design change made to the Slide Master automatically updates the global visual theme of the entire presentation instantly.

3.5 Slide Transitions vs. Custom Animations

A critical distinction in presentation software exists between transitions and animations:

Table 5: Comparison: Slide Transition vs. Custom Animation

Feature	Slide Transition	Custom Animation
Scope	Applied to the entire slide .	Applied to individual elements inside a single slide (text box, image, chart).
Trigger Point	Occurs when navigating from one slide to the next.	Occurs sequentially while viewing a single slide.
Examples	Wipe, Wheel, Dissolve, Fade, Box.	Entrance Fly-in, Emphasis spin, Exit disappear, Motion Path.
Menu Location	Slide Show → Slide Transition	Slide Show → Custom Animation

3.6 Detailed Breakdown of Impress Tabs

- **File Tab:** Creation, opening, saving (.odp), printing, and exporting presentations.
- **Edit Tab:** Cut, copy, paste, delete slide, find and replace text.
- **View Tab:** Switch between Normal, Outline, Slide Sorter, Notes, Handout, and Slide Master views.
- **Insert Tab:** Insert new slide (Ctrl + M), page number, date/time, graphics, audio/video clips, hyperlinks.
- **Format Tab:** Format character, paragraph, line styles, slide layout, and slide design.
- **Tools Tab:** Spell check, gallery, configuration options.
- **Slide Show Tab:** Configure Slide Show settings, Custom Animation, Slide Transition, and Rehearse Timings.
- **Window & Help Tabs:** Manage window instances and access help documentation.

4 Comprehensive Question Bank

4.1 Multiple Choice Questions (MCQs)

1. What is the native file extension of documents created in OpenOffice Writer?

- (A) .docx
- (B) .odt
- (C) .ods
- (D) .pdf

Answer: (B) .odt

Explanation: OpenOffice Writer saves text files using the OpenDocument Text standard with the extension .odt.

2. Which Writer tab contains the *Spelling and Grammar* tool?

- (A) Edit Tab
- (B) Format Tab
- (C) Tools Tab
- (D) Insert Tab

Answer: (C) Tools Tab

Explanation: The *Spelling and Grammar* checker (shortcut F7) is located under the Tools menu tab.

3. How are numerical entries aligned by default inside an OpenOffice Calc cell?

- (A) Left-aligned
- (B) Right-aligned
- (C) Center-aligned
- (D) Justified

Answer: (B) Right-aligned

Explanation: Values/numbers align to the right by default, while Labels (text) align to the left.

4. What character must precede all formulas and functions in OpenOffice Calc?

- (A) #
- (B) \$
- (C) =
- (D) @

Answer: (C) =

Explanation: Calc requires an equals sign (=) at the beginning of any cell entry to interpret it as a mathematical formula or function.

5. Which symbol is used to lock row or column coordinates to establish absolute cell referencing in Calc?

- (A) %
- (B) \$
- (C) &
- (D) *

Answer: (B) \$

Explanation: Prefixing coordinates with a dollar sign (\$A\$1) freezes cell references during formula copying.

6. What is the native file extension of presentations created in OpenOffice Impress?

- (A) .pptx
- (B) .odp
- (C) .ods
- (D) .txt

Answer: (B) .odp

Explanation: OpenOffice Impress uses the OpenDocument Presentation extension .odp.

7. Which Impress workspace view is specifically used to view and edit presenter notes hidden from the audience?

- (A) Outline View
- (B) Slide Sorter View
- (C) Notes View
- (D) Handout View

Answer: (C) Notes View

Explanation: Notes View displays the Notes pane where speaker prompts are written for presenter viewing only.

8. Which command is used to save an existing document under a new file name or location?

- (A) Save
- (B) Save As
- (C) Export
- (D) Rename

Answer: (B) Save As

Explanation: Save As opens a dialog box allowing users to save files under different file names, paths, or formats.

9. What single character prefix forces Calc to treat numeric data (like phone numbers) as text labels?

- (A) Double quote (")
- (B) Single quote (')
- (C) Semicolon (;)
- (D) Backslash (\)

Answer: (B) Single quote (')

Explanation: Placing a single quote before digits (e.g., '9876543210) instructs Calc to treat the string as a left-aligned text label.

10. Which feature in Impress controls global baseline formatting (such as background and logo) for all slides?

- (A) Custom Animation
- (B) Slide Transition
- (C) Slide Master
- (D) Slide Layout

Answer: (C) Slide Master

Explanation: Slide Master sets global baseline formatting that automatically propagates across all slides in a presentation.

11. What is the shortcut key to launch a full-screen presentation in OpenOffice Impress?

- (A) F1 (C) F7
(B) F5 (D) F12

Answer: (B) F5

Explanation: Pressing F5 starts the Slide Show view from the first slide.

12. In OpenOffice Calc, which function calculates the total number of numerical cells in a given range?

- (A) SUM() (C) COUNTA()
(B) COUNT() (D) TOTAL()

Answer: (B) COUNT()

Explanation: The COUNT() function returns the number of cells containing numerical values in a specified range.

13. Which tab in OpenOffice Writer is used to insert Headers and Footers?

- (A) Format Tab (C) Insert Tab
(B) View Tab (D) File Tab

Answer: (C) Insert Tab

Explanation: Headers and footers are added via Insert → Header / Footer.

14. What is the maximum number of columns available in an OpenOffice Calc worksheet?

- (A) 256 (C) 65,536
(B) 1,024 (D) 1,048,576

Answer: (B) 1,024

Explanation: OpenOffice Calc supports 1,024 columns (from Column A to AMJ).

15. Which view in Impress displays all slides as miniature thumbnails in a grid layout for easy reordering?

- (A) Normal View (C) Slide Sorter View
(B) Outline View (D) Handout View

Answer: (C) Slide Sorter View

Explanation: Slide Sorter View shows miniature thumbnails ideal for drag-and-drop slide reordering.

4.2 Assertion-Reasoning Questions

1. **Assertion (A):** In OpenOffice Calc, copying the relative formula =A1+B1 from cell C1 to C2 automatically updates the formula to =A2+B2.

Reason (R): By default, cell references in Calc formulas use relative addressing, which adjusts row and column references based on the relative position of the target cell.

Answer: Both (A) and (R) are true and (R) is the correct explanation of (A).

Explanation: Relative referencing automatically adjusts formula coordinates when copied to new rows or columns.

2. **Assertion (A):** Speaker notes added in the Notes Page view of Impress appear on the main screen during a full-screen slide show presentation.
Reason (R): Notes Page view is designed strictly for printed audience handouts.
Answer: Both (A) and (R) are false.
Explanation: Speaker notes are visible only to the presenter during design mode and are hidden from the audience slide show. Handout view is used for printed student handouts.
3. **Assertion (A):** Using the *Save As* option allows a user to create a duplicate copy of a file with a different name.
Reason (R): The *Save* command overwrites the existing file without opening a location selection dialog box.
Answer: Both (A) and (R) are true, but (R) is not the complete explanation of (A).
Explanation: Both statements are individually true statements regarding file operations, but (R) describes *Save* behavior rather than explaining why *Save As* creates duplicates.
4. **Assertion (A):** In OpenOffice Calc, the formula =SUM(10, 20, 30) will return an error because cell ranges are mandatory.
Reason (R): Calc functions accept both direct constant values and cell range parameters as valid arguments.
Answer: (A) is false but (R) is true.
Explanation: The function =SUM(10, 20, 30) executes cleanly and outputs 60 because functions accept direct numbers as well as cell references.
5. **Assertion (A):** Slide Transition and Custom Animation perform identical functions in OpenOffice Impress.
Reason (R): Slide Transition controls movement between slides, whereas Custom Animation animates elements inside a single slide.
Answer: (A) is false but (R) is true.
Explanation: Slide transition and custom animation are distinct concepts—transitions apply between slides while animations apply to internal slide elements.

4.3 One-Word / Brief Answer Questions

1. **Question:** Name the open-source software suite that includes Writer, Calc, and Impress.
Answer: Apache OpenOffice (or LibreOffice).
2. **Question:** What is the standard keyboard shortcut for opening the Spelling and Grammar checker in OpenOffice?
Answer: F7.
3. **Question:** What term describes the intersection of a single row and a single column in a spreadsheet?
Answer: Cell.
4. **Question:** Which toolbar box in Calc displays the address of the currently selected active cell (e.g., D5)?
Answer: Name Box.
5. **Question:** What term describes the dynamic fill handle feature used to generate automatic series in Calc?
Answer: AutoFill.

6. **Question:** Name the view in Impress that displays all slides as a grid of small thumbnail images.
Answer: Slide Sorter View.
7. **Question:** Which menu tab in Writer contains commands for inserting Headers, Footers, and Hyperlinks?
Answer: Insert Tab.
8. **Question:** What is the default file extension of a spreadsheet saved in OpenOffice Calc?
Answer: .ods.
9. **Question:** Which Calc function calculates the arithmetic average of a given range of numbers?
Answer: AVERAGE().
10. **Question:** What shortcut key inserts a new blank table in OpenOffice Writer?
Answer: Ctrl + F12.

4.4 Differentiate Between Questions

1. Differentiate between Save and Save As in OpenOffice Writer.

Feature	Save Command (Ctrl+S)	Save As Command (Ctrl+Shift+S)
Primary Purpose	Updates and saves edits to the currently open file path.	Saves a file under a new name, new file format, or new directory path.
Dialog Prompt	Executes silently without opening a prompt (unless saving a new untitled file).	Always opens the file browser dialog box.
File Duplication	Overwrites the active file.	Preserves original file and creates a new modified copy.

2. Differentiate between Move Text (Cut and Paste) and Copy Text (Copy and Paste).

Feature	Move Text (Cut and Paste)	Copy Text (Copy and Paste)
Shortcut Keys	Ctrl + X followed by Ctrl + V.	Ctrl + C followed by Ctrl + V.
Original Location	Text is completely removed from the original location.	Text remains intact at its original location.
Resulting Copies	Single instance moved to target.	Two identical instances exist at source and target.

3. Differentiate between Relative Cell Referencing and Absolute Cell Referencing in Calc.

Feature	Relative Referencing	Absolute Referencing
Syntax Standard	Standard address (e.g., B2).	Prefixed with dollar signs (e.g., \$A\$1).
Behavior on Copy	Cell reference shifts dynamically relative to destination.	Cell reference remains completely locked and constant.
Use Case	Calculating row totals across multiple items.	Referencing a fixed tax percentage or conversion factor cell.

4. Differentiate between Labels and Values in OpenOffice Calc.

Feature	Labels (Text)	Values (Numbers)
Content Type	Text, titles, product codes, or alphanumeric strings.	Numeric integers, decimals, currency, or dates.
Default Alignment	Left-aligned inside the cell.	Right-aligned inside the cell.
Mathematical Usage	Cannot be used in mathematical operations.	Directly computable via formulas and functions.

5. Differentiate between Slide Transition and Custom Animation in OpenOffice Impress.

Feature	Slide Transition	Custom Animation
Applied Object	Applied to the entire slide frame.	Applied to individual objects (text, image, chart).
Execution Trigger	Triggers during slide change progression.	Triggers during internal slide presentation sequence.
Menu Command	Slide Show → Slide Transition	Slide Show → Custom Animation

4.5 Short Answer Questions

- Question:** What is OpenOffice Writer? State its primary uses and default file extension.

Answer: OpenOffice Writer is a free and open-source word processing application used to write, edit, format, and print text documents such as letters, reports, and books. It supports tables, embedded images, and formulas, saving files natively with the .odt file extension.
- Question:** Explain the purpose of the AutoFill feature in OpenOffice Calc with an example.

Answer: AutoFill automates the entry of sequential data series across adjacent cells without manual typing. By typing initial values (e.g., 1 and 2) and dragging the fill handle across rows or columns, Calc automatically calculates the progression and fills subsequent numbers (3, 4, 5, ...).
- Question:** Describe the function of the Slide Master in OpenOffice Impress.

Answer: The Slide Master serves as a global visual design template for a presentation. Formatting applied on the Slide Master—such as background graphics, font color, header/footer dates, and logo placement—is automatically enforced across every slide in the presentation.
- Question:** What is a Macro in Calc? How is it recorded and executed?

Answer: A Macro is a recorded sequence of mouse clicks and keyboard actions saved to automate repetitive spreadsheet tasks. It is created via Tools → Macros → Record Macro, stopped upon task completion, and re-executed via Tools → Macros → Run Macro.
- Question:** Explain the difference between Standard Filter and AutoFilter in Calc.

Answer: AutoFilter attaches quick drop-down selection menus directly to column headers for simple value matching. Standard Filter provides advanced multi-criteria filtering using logical operators (**AND** / **OR**) to extract records matching complex conditions across multiple columns.

4.6 Long Answer Questions

1. **Question:** Detail the complete procedure for creating, editing, and formatting a multi-column table in OpenOffice Writer. Include commands for inserting rows/columns and merging cells.

Answer:

Step 1: Table Insertion: Place cursor at desired position → click Insert → Table (or press Ctrl + F12) → specify table name, number of columns (e.g., 4), and rows (e.g., 5) → click **OK**.

Step 2: Inserting Rows and Columns: Right-click inside a cell or use the Table toolbar:

- To insert a row: Table → Insert → Rows (choose Above or Below).
- To insert a column: Table → Insert → Columns (choose Before or After).

Step 3: Merging Cells: Highlight adjacent cells → right-click and select Cell → Merge (or click **Merge Cells** on the Table toolbar).

Step 4: Table Formatting: Use Table → Table Properties to adjust cell alignment, background shading colors, and table borders.

2. **Question:** Explain Cell Referencing in Calc in detail. Compare Relative, Absolute, and Mixed cell referencing with syntax and real-world formula examples.

Answer:

Cell referencing identifies cell locations inside a spreadsheet. Calc supports three referencing modes:

- (a) **Relative Referencing (Default):** References adjust dynamically relative to the target cell position when copied.

Example: If cell C1 contains =A1+B1, copying it to C2 automatically adjusts the formula to =A2+B2.

- (b) **Absolute Referencing:** Locks both row and column addresses using dollar signs (\$). Addresses remain completely fixed regardless of where the formula is copied.

Example: If cell C1 contains =A1*\$D\$1 (where D1 holds a fixed 18% GST rate), copying to C2 yields =A2*\$D\$1, keeping the GST rate reference fixed.

- (c) **Mixed Referencing:** Freezes either the column or row coordinate while leaving the other relative.

Example: =\$A1*B\$1 freezes Column A and Row 1 while allowing other coordinates to adjust dynamically across a multiplication grid.

3. **Question:** Discuss the 6 primary viewing modes available in OpenOffice Impress. Describe the structural setup and presentation workflow for creating a professional 5-slide presentation.

Answer:

Part A: Impress Viewing Modes:

- (1) **Normal View:** Main interactive editor for adding text, graphics, and layouts.
- (2) **Outline View:** Structural view displaying slide titles and text in outline hierarchy.
- (3) **Notes Page View:** Presenter workspace for drafting private speaker notes.
- (4) **Handout Page View:** Formats miniature slides for printed student/audience reference sheets.
- (5) **Slide Sorter View:** Thumbnail grid view for slide reordering and deletion.
- (6) **Slide Show View (F5):** Full-screen audience presentation view.

Part B: 5-Slide Presentation Workflow:

- Step 1:** Launch Impress → select File → New → Presentation.
- Step 2:** Open View → Master → Slide Master to select unified background colors, header/footer text, and font styles.
- Step 3:** Insert 5 slides via Insert → Slide. Choose layouts via Format → Slide Layout (Title slide, 2 Content slides, 1 Chart slide, 1 Conclusion slide).
- Step 4:** Apply visual transitions between slides using Slide Show → Slide Transition (e.g., Fade).
- Step 5:** Apply custom entrance animations to title text boxes via Slide Show → Custom Animation (e.g., Fly In). Press F5 to test the presentation.

4.7 Case-Study / Competency-Based Questions

1. Case Study 1: Academic Report Formatting in OpenOffice Writer

Scenario: Ananya is preparing a 15-page research report on "Renewable Energy Solutions" using OpenOffice Writer. Her guide requested the following layout rules:

- The document header must show the document title, and the footer must display dynamic page numbers.
- Section headings must appear automatically in a hyperlinked Table of Contents.
- Specific statistical data must be presented in a 4-column table, converted into plain text for a summary section.

Sub-Questions & Answers:

- (a) Which tab and menu command should Ananya use to insert automatic page numbers in the footer?

Answer: She should navigate to Insert → Footer → Default, place the cursor inside the footer box, and then choose Insert → Fields → Page Number.

- (b) How can Ananya generate an automatic Table of Contents based on her section headings?

Answer: She must apply Heading styles (Heading 1, Heading 2) to section titles, place the cursor on page 2, and select Insert → Indexes & Tables → Indexes & Tables.

- (c) State the step-by-step menu command to convert her 4-column statistical table into plain text.

Answer: Select the entire table → navigate to Table → Convert → Table to Text.

2. Case Study 2: Sales Analysis and Budgeting in OpenOffice Calc

Scenario: Rajesh, an inventory manager at GreenTech Retail, is analyzing annual sales data in OpenOffice Calc. Cell E1 contains a fixed Discount Rate of 15%. The gross sales amounts for 50 products are listed in cells C2:C51.

Sub-Questions & Answers:

- (a) Write the exact formula Rajesh should enter in cell D2 to compute the discount amount for the first product, ensuring the formula can be safely copied down to cell D51 using AutoFill.

Answer: =C2*\$E\$1 (Absolute referencing \$E\$1 locks the discount rate cell).

- (b) Which Calc function should Rajesh use in cell C52 to find the total sales amount across all 50 products?

Answer: =SUM(C2:C51).

- (c) Describe how Rajesh can apply a filter to display only products with sales exceeding Rs 50,000 AND belonging to the "Electronics" category.

Answer: Select data range → click Data → Filter → Standard Filter → set Field 1 to Category = "Electronics" → set Operator to **AND** → set Field 2 to Sales > 50000 → click **OK**.

3. Case Study 3: Interactive Seminar Presentation in OpenOffice Impress

Scenario: Priya is designing a 10-slide interactive seminar presentation in OpenOffice Impress for a national cybersecurity workshop.

Sub-Questions & Answers:

- (a) Priya wants the school logo and event title to appear automatically at the top right corner of all 10 slides. Which feature should she use and how?

Answer: She should use the **Slide Master** (View → Master → Slide Master), insert the logo and event title onto the master slide, and then close Master View.

- (b) What is the difference between applying a *Wipe* effect as a Slide Transition versus as a Custom Animation on a slide image?

Answer: Applying *Wipe* as a Slide Transition animates the entry of the entire slide when moving from the previous slide. Applying *Wipe* as a Custom Animation animates the appearance of the specific image inside the active slide.

- (c) How can Priya insert an interactive link on Slide 3 that opens a demonstration video file during her presentation?

Answer: Highlight text/button on Slide 3 → select Insert → Hyperlink → choose **Document** → browse and select the video file path → click **Apply**.