

SS2 FIRST TERM SCHEME OF WORK AND NOTE FOR 2026/2027 SESSION
SUBJECT: DIGITAL TECHNOLOGY

WEEK 1: REVISION OD SS1 WORK
WEEK 2: Advanced Word Processing: Mail Merge, Macros, Template
WEEK 3: Advanced Spreadsheet I: Pivot table, advanced formulas
WEEK 4: Advanced Spreadsheet II: Financial model, Scenarion analysis
WEEK 5: Spreadsheet Data Modeling: Scenarion Analysis, Pivot Tables and Dashboard
WEEK 6: Advanced Presentation Tool: Multimedia integration, Professional designs
WEEK 7: Web Design I: CSS And Java Scripts Basics, Styling With CSS; Introduction to Interactivity with Js
WEEK 8: Web Design II: Introduction to HTML,
WEEK 9: Web Publishing and Hosting: Domain, Hosting, Publishing process
WEEK 10-11: REVISION AND EXAMINATION

SS2 DIGITAL TECHNOLOGY FIRST TERM NOTE

WEEK 1

TOPIC: ADVANCED WORD PROCESSING: MAIL MERGE, MACROS, TEMPLATE

Learning Objectives: At the end of the lesson, students should be able to:

1. Explain the concept of advanced word processing.
2. Define Mail Merge, Macros, and Templates.
3. State the components and uses of Mail Merge.
4. Explain how to create and use a Macro.
5. Differentiate between Mail Merge, Macros, and Templates.

Introduction to Advanced Word Processing

Advanced word processing refers to the use of specialized features in word processing software (such as Microsoft Word) to create, edit, format, and manage documents more efficiently. These features help users automate repetitive tasks, create professional documents, and save time.

Examples of advanced word processing features include:

- Mail Merge
- Macros
- Templates
- Styles
- Table of Contents
- Track Changes
- Forms

1. DEFINITION MAIL MERGE

Mail Merge is a feature in Microsoft Word that combines a main document with a data source to produce multiple personalized copies of the same document for different recipients.

For example, a school can use Mail Merge to prepare admission letters or report letters for all students without typing each letter separately.

COMPONENTS OF MAIL MERGE

1. **Main Document**

- The document containing the fixed information (text that is the same for everyone).

2. **Data Source**

- A file containing recipient information such as names, addresses, phone numbers, or email addresses.

3. **Merge Fields**

- Placeholders inserted into the main document to indicate where information from the data source should appear.

4. **Merged Document**

- The final personalized documents produced after combining the main document with the data source.

TYPES OF MAIL MERGE DOCUMENTS

- Letters
- Email Messages
- Envelopes
- Labels
- Directory (Catalog)

STEPS FOR CREATING A MAIL MERGE

1. Open Microsoft Word.
2. Click the **Mailings** tab.
3. Select **Start Mail Merge**.
4. Choose the type of document.
5. Click **Select Recipients**.
6. Create or choose an existing data source.
7. Insert Merge Fields.
8. Preview the merged documents.
9. Click **Finish & Merge**.
10. Print or save the merged documents.

ADVANTAGES OF MAIL MERGE

- Saves time.
- Eliminates repetitive typing.
- Produces personalized documents.
- Reduces errors.
- Improves efficiency.
- Suitable for large numbers of recipients.

DISADVANTAGES OF MAIL MERGE

- Requires accurate data.
- Errors in the data source affect all documents.
- May be difficult for beginners.
- Incorrect merge fields produce wrong results.

APPLICATIONS OF MAIL MERGE

- School admission letters
- Report cards
- Salary slips
- Invitation letters
- Certificates
- Mailing labels
- Customer notices

2. DEFINITION OF MACROS

A Macro is a recorded sequence of commands or actions that can be replayed whenever needed to perform repetitive tasks automatically.

Instead of repeating the same formatting steps several times, users can record those steps once and run the Macro whenever required.

EXAMPLES OF TASKS PERFORMED USING MACROS

- Applying document formatting
- Inserting a company logo
- Creating standard reports
- Printing documents
- Adding headers and footers
- Formatting tables

STEPS FOR CREATING A MACRO

1. Open Microsoft Word.
2. Click the **View** tab.
3. Select **Macros**.
4. Click **Record Macro**.
5. Enter a Macro name.
6. Assign a keyboard shortcut or toolbar button (optional).
7. Perform the desired actions.
8. Click **Stop Recording**.

RUNNING A MACRO

1. Click **View**.
2. Select **Macros**.
3. Choose the desired Macro.
4. Click **Run**.

ADVANTAGES OF MACROS

- Saves time.
- Increases productivity.
- Reduces repetitive work.
- Ensures consistency.
- Minimizes typing errors.

DISADVANTAGES OF MACROS

- Incorrect recording repeats mistakes.
- Some macros may contain harmful code if downloaded from untrusted sources.
- Beginners may find them difficult to create.
- Editing macros may require additional knowledge.

3. DEFINITION OF TEMPLATES

A Template is a pre-designed document containing preset formatting, styles, fonts, layouts, and placeholders that can be used to create new documents quickly.

Templates provide a consistent appearance for documents.

EXAMPLES OF TEMPLATES

- Business Letters
- Reports
- Curriculum Vitae (CV)
- Certificates
- Calendars
- Brochures
- Newsletters
- Flyers
- Invoices
- Meeting Agendas

STEPS FOR USING A TEMPLATE

1. Open Microsoft Word.
2. Click **File**.
3. Select **New**.
4. Choose a template.
5. Replace the sample text with your own information.
6. Save the document with a new name.

ADVANTAGES OF TEMPLATES

- Saves time.
- Produces professional-looking documents.
- Ensures consistency.
- Easy to customize.
- Reduces formatting errors.
- Improves productivity.

DIFFERENCES BETWEEN MAIL MERGE, MACROS, AND TEMPLATES

Mail Merge	Macros	Templates
Creates personalized documents for many recipients.	Automates repetitive tasks.	Provides ready-made document designs.
Uses a data source.	Uses recorded commands.	Uses predefined formatting and layouts.
Commonly used for letters, labels, and envelopes.	Used to speed up repeated operations.	Used to create professional documents quickly.
Produces multiple customized copies.	Performs repeated actions automatically.	Serves as a starting point for new documents.

Assignment

1. Explain the term **Mail Merge** and describe its components.
2. Outline the steps involved in creating a Mail Merge document.
3. Define a Macro and explain five advantages of using Macros.
4. Explain the meaning of a Template and list six examples.

5. With the aid of a table, compare Mail Merge, Macros, and Templates.

WEEK 2:

TOPIC: ADVANCED SPREADSHEET I: PIVOT TABLE, ADVANCED FORMULAS

Learning Objectives

At the end of the lesson, students should be able to:

1. Explain the concept of advanced spreadsheets.
2. Define a Pivot Table and state its uses.
3. Create a simple Pivot Table.
4. Identify and use common advanced spreadsheet formulas.
5. Apply advanced formulas to solve simple spreadsheet problems.

Introduction to Advanced Spreadsheet

An advanced spreadsheet refers to the use of powerful tools and functions in spreadsheet software (such as Microsoft Excel) to organize, analyze, summarize, and calculate data efficiently.

Examples of advanced spreadsheet features include:

- Pivot Tables
- Advanced Formulas
- Charts
- Data Validation
- Conditional Formatting

1. DEFINITION OF PIVOT TABLE

A Pivot Table is a spreadsheet feature used to summarize, organize, and analyze large amounts of data. It helps users quickly calculate totals, averages, counts, and other summaries without changing the original data.

USES OF PIVOT TABLES

- Summarizes large datasets.
- Calculates totals, averages, and counts.
- Compares data by categories.
- Generates reports quickly.

- Helps in decision-making.

AREAS OF A PIVOT TABLE

- **Rows:** Displays categories vertically.
- **Columns:** Displays categories horizontally.
- **Values:** Shows calculations such as Sum, Count, or Average.
- **Filters:** Allows users to display specific information.

STEPS TO CREATE A PIVOT TABLE

1. Select the data range.
2. Click the **Insert** tab.
3. Select **PivotTable**.
4. Choose the data range and location.
5. Drag fields into the Rows, Columns, Values, and Filters areas.
6. Analyze the summarized report.

ADVANTAGES OF PIVOT TABLES

- Easy to summarize data.
- Saves time.
- Automatically updates when refreshed.
- Easy to rearrange reports.
- Simplifies data analysis.

2. DEFINITION OF ADVANCED FORMULAS

Advanced formulas are formulas that use built-in spreadsheet functions to perform calculations, analyze data, and make decisions automatically.

COMMON ADVANCED FORMULAS

Function	Purpose	Example
SUM()	Adds numbers	=SUM(B2)
AVERAGE()	Finds the average	=AVERAGE(B2)
MAX()	Returns the highest value	=MAX(B2)
MIN()	Returns the lowest value	=MIN(B2)
COUNT()	Counts cells containing numbers	=COUNT(B2)

IF()	Performs logical tests	=IF(B2>=50,"Pass","Fail")
VLOOKUP()	Searches for data in a table	=VLOOKUP(A2,E2,2,FALSE)
ROUND()	Rounds numbers	=ROUND(B2,2)

IMPORTANCE OF ADVANCED FORMULAS

- Speeds up calculations.
- Reduces errors.
- Improves accuracy.
- Supports data analysis.
- Saves time and effort.

DIFFERENCE BETWEEN PIVOT TABLES AND ADVANCED FORMULAS

Pivot Table	Advanced Formulas
Summarizes and analyzes data.	Performs calculations using functions.
Creates reports automatically.	Calculates specific values.
Suitable for large datasets.	Suitable for calculations and logical operations.

#2: ASSIGNMENT

1. Explain the meaning of a Pivot Table and state five of its uses.
2. Describe the steps involved in creating a Pivot Table in Microsoft Excel.
3. Write the functions of the following formulas: **SUM()**, **AVERAGE()**, **MAX()**, **MIN()**, **COUNT()**, and **IF()**.
4. Create a table showing the differences between Pivot Tables and Advanced Formulas.

WEEK 3:

Topic: ADVANCED SPREADSHEET II: FINANCIAL MODEL, SCENARIO ANALYSIS

Learning Objectives

At the end of the lesson, students should be able to:

1. Define a financial model.
2. Explain the uses of a financial model.
3. Define scenario analysis.
4. State the importance of scenario analysis in spreadsheet applications.

Introduction

Advanced spreadsheet software such as Microsoft Excel helps users analyze data, prepare budgets, forecast future outcomes, and make better decisions. Two important tools used for these purposes are Financial Models and Scenario Analysis.

1. DEFINITION OF FINANCIAL MODEL

A **financial model** is a spreadsheet that uses data and formulas to calculate and predict the financial performance of a person, business, or organization.

It helps users estimate income, expenses, profits, and future financial results.

COMPONENTS OF A FINANCIAL MODEL

- Income (Revenue)
- Expenses (Costs)
- Profit or Loss
- Assumptions (expected values)
- Spreadsheet formulas

Example

Item	Amount (\$)
Sales	1,000
Expenses	650
Profit	350

Formula:

$$\text{Profit} = \text{Sales} - \text{Expenses}$$

USES OF FINANCIAL MODELS

- Preparing budgets
- Estimating future profits
- Planning business activities
- Tracking income and expenses
- Supporting financial decision-making

ADVANTAGES

- Saves time
- Improves planning
- Reduces calculation errors
- Assists in forecasting
- Supports informed decision-making

2. DEFINITION OF SCENARIO ANALYSIS

Scenario analysis is a spreadsheet technique used to examine how changing one or more values affects the final result. It allows users to compare different possible outcomes before making decisions.

TYPES OF SCENARIOS

1. **Best-Case Scenario** – The most favorable outcome.
2. **Worst-Case Scenario** – The least favorable outcome.
3. **Most Likely Scenario** – The expected or normal outcome.

Example

Scenario	Sales (\$)	Profit (\$)
Best Case	1,200	500
Most Likely	1,000	350
Worst Case	800	150

USES OF SCENARIO ANALYSIS

- Budget planning
- Business forecasting
- Risk assessment
- Comparing business decisions

- Preparing for unexpected changes

ADVANTAGES

- Improves decision-making
- Helps identify risks
- Encourages better planning
- Makes forecasting easier
- Supports business growth

DIFFERENCE BETWEEN FINANCIAL MODEL AND SCENARIO ANALYSIS

Financial Model	Scenario Analysis
Calculates financial performance.	Tests different possible outcomes.
Uses formulas and financial data.	Changes values to compare results.
Focuses on budgeting and forecasting.	Focuses on decision-making under different conditions.

#3: ASSIGNMENT

1. Explain the meaning of a financial model with a simple example.
2. State five uses of financial models.
3. Define scenario analysis and explain its three types.
4. Construct a simple spreadsheet showing sales, expenses, and profit for a small business.

WEEK 4:

TOPIC: SPREADSHEET DATA MODELING

LEARNING OBJECTIVES

At the end of this lesson, students should be able to:

1. Define spreadsheet data modeling.
2. Explain the concept of scenario analysis.
3. Describe pivot tables and their uses.
4. Explain dashboards and their importance.
5. Apply spreadsheet tools to analyze and present data effectively.

INTRODUCTION

A spreadsheet is an electronic worksheet used to organize, calculate, analyze, and present data in rows and columns. As the amount of data in businesses, schools, and organizations increases, spreadsheet software provides advanced tools that help users make better decisions. These tools include Scenario Analysis, Pivot Tables, and Dashboards, which are commonly used in data modeling.

1. SPREADSHEET DATA MODELING

Definition: Spreadsheet data modeling is the process of organizing data and using spreadsheet tools, formulas, and analytical features to solve problems, predict outcomes, and support decision-making. Data modeling helps users understand relationships between data and forecast the effects of different decisions.

IMPORTANCE OF SPREADSHEET DATA MODELING

- Helps in decision-making.
- Organizes large amounts of data.
- Makes data analysis easier.
- Predicts future outcomes.
- Improves accuracy of calculations.
- Supports business planning and budgeting.
- Saves time when analyzing data.

2. SCENARIO ANALYSIS

Definition: Scenario Analysis is a spreadsheet feature used to examine how changing one or more input values affects the results of a worksheet.

It allows users to compare different situations (called scenarios) without changing the original data permanently.

Example: A school wants to know how changes in school fees will affect total income.

Scenario	School Fee (₦)	Number of Students	Total Income (₦)
Current	40,000	500	20,000,000
Increase	45,000	500	22,500,000
Decrease	35,000	500	17,500,000

The school can compare these scenarios to decide which fee structure is most suitable.

USES OF SCENARIO ANALYSIS

- Budget planning.
- Business forecasting.
- Sales projections.
- School financial planning.
- Investment analysis.
- Risk assessment.

ADVANTAGES OF SCENARIO ANALYSIS

- Supports better decision-making.
- Reduces financial risk.
- Allows comparison of different outcomes.
- Saves time by avoiding repeated calculations.
- Improves planning.

3. PIVOT TABLE

Definition: A Pivot Table is a spreadsheet tool used to summarize, organize, and analyze large amounts of data quickly. Instead of manually calculating totals, averages, or counts, a pivot table automatically groups and summarizes the information.

Example

Student Scores

Student	Class	Subject	Score
Ada	SS2	Mathematics	75
John	SS2	English	68
Musa	SS1	Mathematics	82
Grace	SS2	Mathematics	90
Emeka	SS1	English	70

A pivot table can summarize the total or average scores by **class**, **subject**, or **student**.

Example Summary:

Subject	Average Score
Mathematics	82.3
English	69.0

FEATURES OF A PIVOT TABLE

- Sorts data.
- Filters information.
- Groups similar records.
- Calculates totals.
- Calculates averages.
- Counts records.
- Summarizes large datasets.

USES OF PIVOT TABLES

- Analyzing examination results.
- Preparing sales reports.
- Inventory management.
- Financial reporting.
- Attendance summaries.

ADVANTAGES OF PIVOT TABLES

- Fast data analysis.
- Easy to use.
- Reduces manual calculations.
- Produces meaningful summaries.
- Helps identify trends and patterns.

4. DASHBOARDS

Definition: A dashboard is a visual display that presents important information, charts, tables, and performance indicators on one screen for easy monitoring and decision-making.

COMPONENTS OF A DASHBOARD

A dashboard may include:

- Charts
- Graphs
- Tables
- Pivot Tables
- Key Performance Indicators (KPIs)
- Slicers (filters)
- Numbers and summaries

Example: A school performance dashboard may display:

- Total number of students.
- Average examination score.
- Number of students who passed.
- Attendance percentage.
- Performance charts by class.

USES OF DASHBOARDS

- Monitoring business performance.
- Tracking school results.
- Monitoring sales.
- Financial reporting.
- Project management.
- Budget monitoring.

ADVANTAGES OF DASHBOARDS

- Presents information clearly.
- Supports quick decision-making.
- Saves time.
- Highlights important trends.
- Makes reports attractive and easy to understand.

Difference Between Scenario Analysis, Pivot Tables, and Dashboards

Scenario Analysis	Pivot Table	Dashboard
Predicts outcomes by changing values	Summarizes and analyses data	Visually presents analyzed data
Used for forecasting	Used for organizing data	Used for monitoring performance

Scenario Analysis	Pivot Table	Dashboard
Compares different situations	Groups and calculates data	Displays charts, tables, and KPIs
Supports planning	Supports reporting	Supports decision-making through visualization

APPLICATIONS OF SPREADSHEET DATA MODELING

Spreadsheet data modeling is used in:

- Schools
- Banks
- Hospitals
- Government offices
- Supermarkets
- Manufacturing companies
- Research organizations
- Small and large businesses

#4: ASSIGNMENT

1. Explain the importance of spreadsheet data modeling in business and education.
2. Create a table showing the examination scores of 10 students and explain how a pivot table can be used to summarize the results.
3. A shop sells three products. Prepare three scenarios (Low Sales, Normal Sales, and High Sales) showing how changes in the quantity sold affect the total sales amount.
4. Design a simple dashboard for a school's examination results that includes:
 - Total number of students
 - Average score
 - Number of passes and failures
 - A bar chart showing performance by subject.

WEEK 5:

TOPIC: WEB DEVELOPMENT – CSS AND JAVASCRIPT BASICS

LEARNING OBJECTIVES

At the end of this lesson, students should be able to:

1. Define web development.
2. Explain the meaning and importance of CSS.
3. Identify the different types of CSS.
4. Define JavaScript and explain its importance.
5. Identify the basic features and syntax of JavaScript.
6. Differentiate between HTML, CSS, and JavaScript.
7. Create a simple web page using HTML, CSS

INTRODUCTION

Web development is the process of creating and maintaining websites and web applications that are accessed through the Internet or an organization's intranet.

A complete website is usually built using three core technologies:

- **HTML (Hypertext Markup Language)** – This Provides the structure of a web page.
- **CSS (Cascading Style Sheets)** – It Controls the appearance and layout of the web page.
- **JavaScript (JS)** – Adds interactivity and dynamic features to the web page.

Together, these technologies enable developers to create attractive, responsive, and user-friendly websites.

What is Web Development?

Definition: Web development is the process of designing, creating, testing, publishing, and maintaining websites and web applications using programming languages and web technologies.

TYPES OF WEB DEVELOPMENT

1. Front-End Development: This involves designing the visible part of a website that users interact with. Languages used include:

- HTML
- CSS
- JavaScript

1. Back-End Development: This involves creating the server-side part of a website that manages databases and application logic. Common languages include:

- PHP
- Python
- Java
- Node.js

3. Full-Stack Development: A full-stack developer works on both the front end and back end of a website.

COMPONENTS OF A WEBSITE

A website generally consists of:

- Text
- Images
- Videos
- Hyperlinks
- Forms
- Navigation menus
- Buttons
- Tables
- Animations

CASCADING STYLE SHEETS (CSS)

Definition: CSS (Cascading Style Sheets) is a style sheet language used to control the appearance, layout, colours, fonts, spacing, and overall presentation of HTML documents. Without CSS, web pages would appear plain and unattractive.

IMPORTANCE OF CSS

- Improve the appearance of web pages.
- Separate content from design.
- Reduce repetitive coding.
- Maintain consistency across multiple pages.

- Improve website loading speed.
- Support responsive web design.
- Make websites easier to maintain.

FEATURES OF CSS

CSS allows developers to control:

- Text colour
- Background colour
- Fonts
- Font size
- Borders
- Margins
- Padding
- Alignment
- Width and height
- Positioning
- Animations
- Layout

TYPES OF CSS

There are three methods of applying CSS.

1. Inline CSS

Styles are written directly inside an HTML element.

Example

```
<p style="color: blue;">Welcome to Computer Studies.</p>
```

Advantages

- Easy for small changes.
- Quick testing.

Disadvantages

- Difficult to maintain.
- Repeats code.

2. Internal CSS

Styles are written inside the <style> tag in the <head> section.

Example

```
<head>
<style>
h1{
color:green;
}

</style>
</head>
```

3. External CSS

Styles are written in a separate file with the extension .css.

Example

style.css

```
h1{
color:green;
}
```

Linked to HTML using

```
<link rel="stylesheet" href="style.css">
```

Advantages

- Easy maintenance
- Reusable
- Keeps HTML clean
- Suitable for large websites

Common CSS Properties

Property	Function
color	Changes text colour
background-color	Changes background colour

Property	Function
font-size	Changes text size
font-family	Changes font type
text-align	Aligns text
margin	Space outside element
padding	Space inside element
border	Adds borders
width	Sets width
height	Sets height

JAVASCRIPT

Definition: JavaScript is a high-level programming language used to make web pages interactive and dynamic. It allows websites to respond to user actions without reloading the page.

IMPORTANCE OF JAVASCRIPT

JavaScript enables developers to:

- Create interactive websites.
- Validate forms.
- Display animations.
- Create image sliders.
- Build games.
- Develop web applications.
- Update web content dynamically.

WAYS OF INCLUDING JAVASCRIPT

1. Internal JavaScript

```
<script>
```

```
alert("Welcome!");
```

</script>

2. External JavaScript

<script src="script.js"></script>

BASIC JAVASCRIPT SYNTAX

Example

```
let name = "John";
```

```
console.log(name);
```

JavaScript Variables

Variables store data.

Examples

```
let age = 16;
```

```
let school = "Unity College";
```

```
let score = 85;
```

DATA TYPES

Data Type	Example
Number	45
String	"Nigeria"
Boolean	true, false
Null	null
Undefined	undefined

JAVASCRIPT OPERATORS

Arithmetic Operators

Operator	Meaning
+	Addition
-	Subtraction
*	Multiplication
/	Division
%	Modulus

RELATIONSHIP BETWEEN HTML, CSS, AND JAVASCRIPT

HTML	CSS	JavaScript
Creates structure	Adds style	Adds behaviour
Builds webpage content	Makes pages attractive	Makes pages interactive
Uses tags	Uses selectors	Uses programming statements

ADVANTAGES OF CSS AND JAVASCRIPT

CSS

- Produces attractive web pages.
- Reduces coding repetition.
- Supports responsive designs.
- Improves website maintenance.
- Enhances user experience.

JavaScript

- Makes websites interactive.
- Responds to user actions instantly.
- Improves website functionality.
- Supports animations.
- Enables real-time updates.

APPLICATIONS OF CSS AND JAVASCRIPT

They are used in:

- School websites
- E-commerce websites
- Online banking
- Social media platforms
- Educational portals
- Hospital management systems
- Government websites
- News websites

#5: ASSIGNMENT

1. Create a simple web page for your school that includes:
 - A heading with the school name.
 - A paragraph describing the school.
 - A CSS style that changes the background colour and font.
 - A button that displays "**Welcome to Our School!**" when clicked.
2. Write the CSS code to:
 - Change the text colour of all headings to green.
 - Set the font size of paragraphs to 18px.
 - Add a blue border around a <div> element.
3. Explain **five differences** between HTML, CSS, and JavaScript, giving one practical example for each technology.

WEEK 6:

TOPIC: ADVANCED PRESENTATION TOOLS: MULTIMEDIA INTEGRATION, PROFESSIONAL DESIGNS

Learning Objectives

At the end of the lesson, students should be able to:

1. Explain the meaning of advanced presentation tools.
2. Define multimedia integration.
3. Identify different multimedia elements used in presentations.
4. Explain professional presentation designs.
5. Apply good design principles when creating presentation slides.

Introduction

Advanced presentation tools are special features in presentation software such as Microsoft PowerPoint, Google Slides that help users create attractive, interactive,

and professional presentations. These tools make presentations more engaging and easier for the audience to understand.

EXAMPLES OF ADVANCED PRESENTATION TOOLS INCLUDE:

- Multimedia integration
- Professional designs
- Animations
- Transitions
- SmartArt
- Charts and graphs

1. DEFINITION MULTIMEDIA INTEGRATION

Multimedia integration is the process of combining different types of media in a presentation to make it more interesting, interactive, and informative.

TYPES OF MULTIMEDIA ELEMENTS

1. Text – Words, headings, and bullet points used to explain ideas.
2. Images – Photographs, drawings, icons, and clip art that illustrate concepts.
3. Audio – Music, narration, and sound effects.
4. Video – Recorded demonstrations, documentaries, or animations.
5. Animations – Effects that make text and objects move.
6. Charts and Graphs – Visual representations of numerical data.

IMPORTANCE OF MULTIMEDIA INTEGRATION

- Makes presentations more attractive.
- Improves audience understanding.
- Keeps the audience interested.
- Helps explain complex ideas easily.
- Makes learning more interactive.

GUIDELINES FOR USING MULTIMEDIA

- Use clear and high-quality images.
- Add videos only when they support the topic.
- Avoid too many animations or sound effects.
- Ensure audio and videos work before presenting.
- Keep slides neat and simple.

2. DEFINITION OF PROFESSIONAL DESIGNS

A professional design is a presentation layout that is neat, attractive, well-organized, and easy for the audience to read and understand.

Professional designs help presenters communicate information effectively.

FEATURES OF A PROFESSIONAL PRESENTATION

- Consistent colours throughout the presentation.
- Readable font styles and sizes.
- Proper alignment of text and images.
- Simple and clean slide layouts.
- Appropriate use of pictures, charts, and graphics.
- Limited and meaningful animations.

PRINCIPLES OF GOOD PRESENTATION DESIGN

1. Simplicity – Avoid overcrowding slides.
2. Consistency – Use the same fonts, colours, and styles.
3. Contrast – Use colours that make text easy to read.
4. Alignment – Arrange objects neatly.
5. Balance – Distribute text and images evenly.
6. Emphasis – Highlight important information.

Benefits of Professional Designs

- Creates a positive impression.
- Makes information easier to understand.
- Improves communication.
- Maintains audience attention.
- Gives presentations a polished and organized appearance.

Difference Between Multimedia Integration and Professional Design

Multimedia Integration	Professional Design
Combines different media such as text, images, audio, and video.	Focuses on the appearance and layout of slides.
Makes presentations interactive and engaging.	Makes presentations neat, attractive, and easy to read.
Uses media elements to explain ideas.	Uses colours, fonts, spacing, and templates to improve presentation quality.

#6: ASSIGNMENT

1. Explain the meaning of multimedia integration and state five multimedia elements used in presentations.
2. Describe five guidelines for using multimedia effectively in a presentation.
3. Define professional design and explain its importance in presentation software.
4. State six principles of designing a professional presentation.
5. Create a five-slide PowerPoint presentation on "The Importance of ICT in Education" using images, a chart, and a professional design theme.

WEEK 7:

TOPIC: PYTHON PROGRAMMING – FUNCTIONS, ERROR HANDLING, AND SIMPLE PROJECT

LEARNING OBJECTIVES

At the end of this lesson, students should be able to:

1. Define a function in Python.
2. Explain the importance of functions.
3. Describe error handling in Python.
4. Explain common types of programming errors.
5. Develop a simple Python project using functions.

INTRODUCTION

Python is a high-level programming language that is easy to learn and widely used for developing software, websites, games, and data analysis. Python provides features such as **functions** and **error handling**.

1. FUNCTIONS IN PYTHON

Definition: A function is a named block of reusable code that performs a specific task. Functions help to avoid repetition and make programs easier to read and maintain.

ADVANTAGES OF FUNCTIONS

- Reduce repetition of code.
- Improve program organization.
- Make programs easier to debug and maintain.

- Allow code to be reused.

Syntax

```
def function_name():  
    # code to execute
```

Example

```
def greet():  
    print("Welcome to Python Programming!")  
  
greet()
```

Output:

Welcome to Python Programming!

FUNCTION WITH PARAMETERS

```
def add(a, b):  
    print(a + b)  
  
add(5, 7)
```

Output: 12

2. ERROR HANDLING IN PYTHON

Definition: Error handling is the process of detecting and managing errors in a program so that it does not stop unexpectedly. Python uses the try and except statements to handle errors.

COMMON TYPES OF ERRORS

1. **Syntax Error** – Occurs when the rules of Python are not followed.

Example: `print ("Hello"`

2. **Name Error** – Occurs when an undefined variable is used.

e.g `print(score)`

3. **Type Error** – Occurs when incompatible data types are used together.

`print("5" + 5)`

4. **ZeroDivisionError** – Occurs when a number is divided by zero.

10 / 0

USING TRY AND EXCEPT

```
try:
    number = int(input("Enter a number: "))
    print(10 / number)
except ZeroDivisionError:
    print("You cannot divide by zero.")
except ValueError:
    print("Please enter a valid number.")
```

IMPORTANCE OF ERROR HANDLING

- Prevents program crashes.
- Makes programs more user-friendly.
- Helps identify and fix errors.
- Improves the reliability of software.

3. SIMPLE PYTHON PROJECT

Project: Student Grade Checker

Problem

Write a program that asks for a student's score and displays whether the student **Passed** or **Failed**.

Algorithm

1. Start.
2. Input the student's score.
3. If the score is **50 or above**, display "**Pass**".
4. Otherwise, display "**Fail**".
5. Stop.

Python Program

```
def check_grade(score):
    if score >= 50:
        print("Pass")
    else:
        print("Fail")
```

```
try:
    score = int(input("Enter your score: "))
    check_grade(score)
except ValueError:
    print("Please enter a valid number.")
```

Sample Output

```
Enter your score: 72
Pass
Enter your score: 35
Fail
```

#7: ASSIGNMENT

1. Write a Python function that calculates the **area of a rectangle** using the formula:
 - $\text{Area} = \text{Length} \times \text{Width}$
2. Write a Python program that:
 - Accepts a student's name and score.
 - Displays the student's name.
 - Displays "**Excellent**" if the score is 70 and above, "**Good**" if the score is between 50 and 69, and "**Needs Improvement**" if the score is below 50.
3. Explain the difference between **syntax errors** and **runtime errors**, giving one example of each.

WEEK 8:

TOPIC: WEB PUBLISHING AND HOSTING: DOMAIN, WEB HOSTING, WEB PUBLISHING PROCESS

Learning Objectives

At the end of the lesson, students should be able to:

1. Define web publishing and web hosting.
2. Explain the meaning of a domain name.
3. Describe the web publishing process.
4. State the importance of domains and web hosting.
5. Differentiate between a domain name and web hosting.

Introduction

Web publishing is the process of creating and making a website available on the Internet for people to access. Before a website can be viewed online, it must have a domain name and be stored on a web hosting server.

1. DOMAIN NAME DEFINITION

A domain name is the unique address of a website on the Internet. It is the name users type into a web browser to visit a website instead of using a numerical IP address.

EXAMPLES OF DOMAIN NAMES

- www.google.com
- www.wikipedia.org
- www.unilag.edu.ng
- www.schoolname.edu.ng

PARTS OF A DOMAIN NAME

- **Website name:** The unique name of the website (e.g., *google*).
- **Extension (Top-Level Domain):** Indicates the type or purpose of the website, such as:
 - **.com** – Commercial organizations
 - **.org** – Non-profit organizations
 - **.edu** – Educational institutions
 - **.gov** – Government agencies
 - **.ng** – Country code for Nigeria

IMPORTANCE OF A DOMAIN NAME

- Gives a website a unique identity.
- Makes websites easy to locate.
- Enhances professionalism.
- Helps users remember website addresses.

2. WEB HOSTING DEFINITION

Web hosting is a service that stores website files on a web server and makes them accessible on the Internet at all times.

A company that provides this service is called a **web hosting provider**.

FUNCTIONS OF WEB HOSTING

- Stores website files and images.
- Makes websites available 24 hours a day.
- Provides storage space and bandwidth.
- Supports website security and backups.

TYPES OF WEB HOSTING

- Shared Hosting
- VPS (Virtual Private Server) Hosting
- Dedicated Hosting
- Cloud Hosting

IMPORTANCE OF WEB HOSTING

- Makes websites accessible online.
- Provides storage for website content.
- Improves website performance.
- Supports website maintenance and security.

3. WEB PUBLISHING PROCESS DEFINITION

The web publishing process is the series of steps involved in creating and making a website available on the Internet.

STEPS IN WEB PUBLISHING

1. Plan the website.
2. Design and develop the web pages.
3. Test the website.
4. Register a domain name.
5. Purchase a web hosting service.
6. Upload website files to the hosting server.
7. Publish the website.
8. Maintain and update the website regularly.

IMPORTANCE OF WEB PUBLISHING

- Shares information with people worldwide.
- Promotes businesses and organizations.
- Supports online learning and communication.
- Enables e-commerce and digital services.

DIFFERENCE BETWEEN DOMAIN NAME AND WEB HOSTING

Domain Name	Web Hosting
The address used to access a website.	The service that stores website files.
Helps users find a website.	Makes the website available online.
Example: www.example.com	Example: A server where the website is stored.

#8: ASSIGNMENT

1. Explain the meaning of a domain name and give five examples of domain extensions.
2. State five advantages of web hosting.
3. Describe the steps involved in publishing a website.
4. Differentiate between a domain name and web hosting using a table.
5. Explain why both a domain name and web hosting are important for a website.