

# Assignment 01

## Section 1: Features of MS Word and MS Excel (Don't use Templates or Mockups)

### 1. Document Creation and Formatting in MS Word

Create a professional report in MS Word on a topic of your choice (minimum 5 pages). The report should include the following elements:

- A cover page with a title, subtitle, your name and roll-number.
- A table of contents generated using MS Word's automatic features.
- Properly formatted headings and subheadings.
- In-text citations and a bibliography using Word's referencing tools.
- At least one table, one chart, and one image with captions.
- Apply different styles, themes, and page layouts.

### 2. Data Management and Analysis in MS Excel

You are given a dataset containing sales data for a company over a year. Using MS Excel, perform the following tasks:

- Format the data in each sheet to make the data appealing.
- Utilize Column **G** and **H** in each sheet to calculate the **Total Monthly Sales**, **Total Sales Product Category-Wise** and **Total Sales Region-Wise**.
- In each sheet, create a **Column Chart** that shows the **Sum of Sales Amount by Product Category** and a **Column Chart** that shows **Sum of Sales Amount by Region**.
- Create a **New Sheet** named **Annual Sales** that have two **separate** data portions. The first portion contains the

data of **Sales for all 12 months Category-Wise**. The second portion contains the data of **Sales for all 12 months but Region-Wise**.

- Finally, create a **Column Chart** in the **Annual Sales sheet** that shows **Yearly Sales**, a **Column Chart** that shows **Yearly Sales Category-Wise**, and a **Column Chart** that shows **Yearly Sales Region-Wise**.

**Sales Data for Excel:** Sales Data

## **Section 2: Features of MS PowerPoint (Don't use Templates or Mockups)**

### **3. Creating a Professional Presentation in MS PowerPoint**

Develop a 10-12 slide PowerPoint presentation on a topic related to Information and Communication Technologies. The presentation should:

- Include a title slide, agenda slide, and conclusion slide.
- Utilize SmartArt to illustrate a process or hierarchy.
- Include at least three different types of animations and transitions.
- Embed an audio narration or video clip relevant to your topic.
- Use design principles to ensure the presentation is visually appealing and professional.

### **4. Interactive Presentation Features**

Create a PowerPoint presentation (8-10 slides) on the importance of cybersecurity. Your presentation should:

- Include hyperlinks to other slides within the presentation to create an interactive quiz or scenario-based activity.
- Use action buttons to navigate through different parts of the presentation.

- Incorporate multimedia elements (audio, video, or interactive charts).
- Ensure accessibility by adding alternative text for images and using accessible color schemes.

## **Section 3: Arithmetic and Conversions in Number Systems**

### **5. Number System Conversion and Arithmetic**

Solve the following problems and present your solutions neatly in a Word document:

- Convert the following numbers from decimal to binary, octal, and hexadecimal: 156, 1024, 255.
- Perform binary addition and subtraction on the following pairs of numbers:  $(101101 + 11011)$ ,  $(111001 - 1001)$ .
- Explain how you would convert a fractional binary number (e.g., 110.101) to its decimal equivalent. Provide an example and perform the conversion.

### **6. Real-World Application of Number Systems**

Write a 3-page report explaining how different number systems (binary, octal, hexadecimal) are used in computing. Include examples such as:

- How binary is used in machine-level programming.
- The role of hexadecimal in memory addressing.
- Situations where octal is preferred and why.
- Compare and contrast these systems, discussing their advantages and limitations.

## **Section 4:Introduction to Databases/DBMS: Creating Tables, Key Columns, Data Insertion, and Relationships in MS Access**

### **7. Creating a Simple Database in MS Access**

Using MS Access, create a simple database to manage student records. The database should include the following:

- At least three tables (e.g., Students, Courses, Enrollment).
- Define primary keys for each table and set up relationships between the tables.
- Input sample data into each table (at least 10 records per table).
- Design a query to display all students enrolled in a particular course.
- Create a simple form for data entry and a report to display student details.

### **8. Understanding Data Relationships in MS Access**

Explain in detail the different types of relationships (one-to-one, one-to-many, many-to-many) that can be created in a database. Provide examples and:

- Demonstrate how each relationship type is implemented in MS Access using the tables you created in the previous question.
- Create and include screenshots showing how relationships are established.
- Discuss the importance of referential integrity in maintaining consistent and accurate data.

## **Section 5: Basic SQL (Using HR Sample Database)**

- Write a query to list the names of all employees along with their department names. Include the employee's ID, full name, and department name.
- Write a query to count the number of employees in each department. Include the department name and the number of employees.
- Write a query to list all job titles available in the company.
- Write a query to find all employees who earn more than \$5000 per month. Include the employee's ID, full name, and salary.
- Write a query to list the names of all departments along with their locations.
- Write a query to find the earliest hire date in the company. Just show the date.
- Write a query to list all employees who were hired after January 1, 2010. Include the employee's ID, full name, and hire date.
- Write a query to calculate the average salary of all employees in the company.
- Write a query to list all department names.
- Write a query to find all employees with the job title 'Sales Representative'. Include the employee's ID, full name, and job title.

**HR Sample Database:** Database