UNIVERSITY INSTITUTE OF COMPUTING

PROJECT REPORT

ON

Attendance Tracking System

Program Name: BCA

Subject Name/Code: Data Interpretation Lab

Submitted by:

Name: Vansh Kalia

UID: 22BCA10174

Section: 22BCA 7 'B'

Submitted to:

Mr. Gagandeep Chawla

Designation: Professor

Aim:

The aim of this project is to develop a structured and automated **Attendance Marking System** using Microsoft Excel that can efficiently record, manage, and analyze attendance data for students, employees, or participants in any organized group setting. The system aims to replace traditional manual attendance methods with a digital solution that enhances accuracy, reduces paperwork, and simplifies the tracking process.

By leveraging the built-in functionalities of Excel—such as data validation, conditional formatting, logical and statistical functions, and optional automation through macros—the system is intended to provide an intuitive and user-friendly interface. This digital platform will enable users to quickly mark attendance, automatically calculate totals, and generate reports without the need for advanced programming skills.

Additionally, the system aims to introduce users to best practices in spreadsheet design, including data protection, layout optimization, and report generation, ultimately helping them develop valuable digital literacy and data management skills.

Objective:

- To create a digital register in Excel for marking attendance.
- To use data validation techniques for consistent and controlled data entry.
- To apply Excel functions for automatic calculation of present, absent, and leave days.
- To generate dynamic monthly and yearly attendance reports.
- To implement visual cues using conditional formatting for quick identification of attendance patterns.
- To enhance the user interface with dropdowns, freeze panes, and labels for easier navigation.
- To secure the attendance sheet using protection features to prevent accidental data modification.

Steps:

Step 1: Set Up the Spreadsheet Structure

1. **Create a New Workbook:**
   - Open Excel and create a new blank workbook.
2. **Rename Sheet (Optional):**
   - Right-click on the sheet tab at the bottom and rename it to "Attendance Tracker."
3. **Column Headers:** In Row 1, enter the following column headers:
   - **A1:** Employee/Name
   - **B1:** Employee ID (Optional)
   - **C1:** Date
   - **D1:** Status (Present/Absent/Half Day)
   - **E1:** Reason for Absence (e.g., Sick, Vacation, Personal)
   - **F1:** Notes
   - **G1:** Contact Information (Phone/Email)
4. **Freeze the Header Row:**
   - Select row 2, go to the "View" tab, and click "Freeze Panes." This will keep the headers visible as you scroll.

Step 2: Format the Columns

1. **Column Widths:**
   - Adjust the widths of the columns to fit your data. You can do this by clicking between the column letters (e.g., between A and B) and dragging the border to expand or shrink.
2. **Date Format:**
   - Select column C (Date).
   - Right-click and choose "Format Cells."
   - Select "Date" and choose a format that fits your preference (e.g., MM/DD/YYYY).

Step 3: Use Data Validation for Consistency

1. **Status Column (D):**
   - Select column D.
   - Go to the "Data" tab and click "Data Validation."
   - In the "Allow" box, select "List."
   - In the "Source" field, enter: `Present, Absent, Half Day`
   - This will create a dropdown for easy status selection.
2. **Reason for Absence Column (E):**
   - Select column E.

- o Repeat the same steps for Data Validation and enter: `Sick, Vacation, Personal, Family Emergency, Other`.
3. **Optional: Notes (F)** - You don't need data validation, but you can enter any additional notes here for more context.

Step 4: Conditional Formatting

1. **Highlight Absences in Red:**
   - o Select column D (Status).
   - o Go to the "Home" tab, click "Conditional Formatting," and choose "New Rule."
   - o Select "Format only cells that contain."
   - o Under "Format cells with," choose "Cell Value" and "equal to."
   - o Type `Absent` in the box.
   - o Click "Format" and choose a red fill color.
   - o This will automatically highlight absences in red.
2. **Highlight "Half Day" in Yellow (Optional):**
   - o Repeat the above steps for "Half Day" but use yellow as the fill color.

Step 5: Add Summary Calculations

1. **Create a Summary Section:**
   - o In a new sheet (or below the data if preferred), create a summary section for tracking total absences and attendance trends.
2. **Total Absences for Each Employee:**
   - o In the summary section, list employee names.
   - o Use the `COUNTIF` function to count the number of absences. For example, if Employee Names are in Column A and their statuses are in Column D:
     - ▪ In a new cell, enter: `=COUNTIF(D2:D100, "Absent")`
     - ▪ This will count the total number of "Absent" statuses.
3. **Attendance Percentage for Each Employee:**
   - o You can also calculate the attendance rate by dividing the number of days attended by the total number of days tracked:
     - ▪ Example: `=COUNTIF(D2:D100, "Present")/COUNTA(C2:C100)`
4. **Create a Chart:**
   - o Select the range of your summary data (e.g., Employee Names and Absence Counts).
   - o Go to the "Insert" tab and choose a chart type (e.g., bar chart) to visually display attendance trends.

Step 6: Add More Features (Optional)

1. **Employee Filter:**
   - o To view attendance for specific employees, use Excel's built-in "Filter" feature.
   - o Select the header row, go to the "Data" tab, and click "Filter." This will allow you to filter by employee name or status.
2. **Automatic Date Entry (For Recurring Events):**
   - o If you are tracking recurring events (like weekly meetings), you can use Excel's "Fill Series" feature.
   - o For example, in column C, enter the first date and drag it down to automatically populate subsequent dates.
3. **Employee Absence Summary by Date:**

○ Create a PivotTable (Insert → PivotTable) to summarize attendance by employee, date, and status. This can help visualize which employees are frequently absent on specific dates.
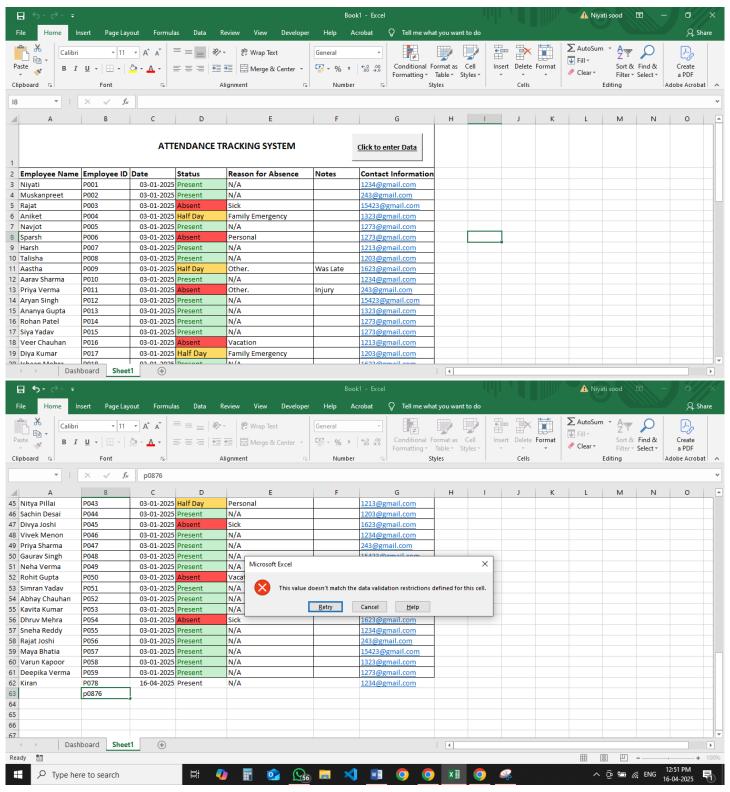

Step 7: Save and Share the Project

- Once your project is complete, save the file.
- You can share it with others by sending it as an email attachment, or use Excel's sharing features to collaborate in real-time via OneDrive or Google Sheets.

Output:

ATTENDANCE TRACKING SYSTEM — Click to enter Data

Employee Name	Employee ID	Date	Status	Reason for Absence	Notes	Contact Information
Niyati	P001	03-01-2025	Present	N/A		1234@gmail.com
Muskanpreet	P002	03-01-2025	Present	N/A		243@gmail.com
Rajat	P003	03-01-2025	Absent	Sick		15423@gmail.com
Aniket	P004	03-01-2025	Half Day	Family Emergency		1323@gmail.com
Navjot	P005	03-01-2025	Present	N/A		1273@gmail.com
Sparsh	P006	03-01-2025	Absent	Personal		1273@gmail.com
Harsh	P007	03-01-2025	Present	N/A		1213@gmail.com
Talisha	P008	03-01-2025	Present	N/A		1203@gmail.com
Aastha	P009	03-01-2025	Half Day	Other.	Was Late	1623@gmail.com
Aarav Sharma	P010	03-01-2025	Present	N/A		1234@gmail.com
Priya Verma	P011	03-01-2025	Absent	Other.	Injury	243@gmail.com
Aryan Singh	P012	03-01-2025	Present	N/A		15423@gmail.com
Ananya Gupta	P013	03-01-2025	Present	N/A		1323@gmail.com
Rohan Patel	P014	03-01-2025	Present	N/A		1273@gmail.com
Siya Yadav	P015	03-01-2025	Present	N/A		1273@gmail.com
Veer Chauhan	P016	03-01-2025	Absent	Vacation		1213@gmail.com
Diya Kumar	P017	03-01-2025	Half Day	Family Emergency		1203@gmail.com
Ishaan Mehra	P018	03-01-2025	Present	N/A		1623@gmail.com

Nitya Pillai	P043	03-01-2025	Half Day	Personal		1213@gmail.com
Sachin Desai	P044	03-01-2025	Present	N/A		1203@gmail.com
Divya Joshi	P045	03-01-2025	Absent	Sick		1623@gmail.com
Vivek Menon	P046	03-01-2025	Present	N/A		1234@gmail.com
Priya Sharma	P047	03-01-2025	Present	N/A		243@gmail.com
Gaurav Singh	P048	03-01-2025	Present	N/A		15423@gmail.com
Neha Verma	P049	03-01-2025	Present	N/A		
Rohit Gupta	P050	03-01-2025	Absent	Vaca		
Simran Yadav	P051	03-01-2025	Present	N/A		
Abhay Chauhan	P052	03-01-2025	Present	N/A		
Kavita Kumar	P053	03-01-2025	Present	N/A		
Dhruv Mehra	P054	03-01-2025	Absent	Sick		1623@gmail.com
Sneha Reddy	P055	03-01-2025	Present	N/A		1234@gmail.com
Rajat Joshi	P056	03-01-2025	Present	N/A		243@gmail.com
Maya Bhatia	P057	03-01-2025	Present	N/A		15423@gmail.com
Varun Kapoor	P058	03-01-2025	Present	N/A		1323@gmail.com
Deepika Verma	P059	03-01-2025	Present	N/A		1273@gmail.com
Kiran	P078	16-04-2025	Present	N/A		1234@gmail.com
	p0876					

Microsoft Excel

This value doesn't match the data validation restrictions defined for this cell.

Retry | Cancel | Help

ATTENDANCE TRACKING SYSTEM

Click to enter Data

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Aniket	P004	03-01-2025	Half Day	Family Emergency		1323@gmail.com
Navjot	P005	03-01-2025	Present	N/A		1273@gmail.com
Sparsh	P006	03-01-2025	Absent	Personal		1273@gmail.com

Learning Outcomes:

• Build and design structured worksheets for record-keeping.

• Apply Excel functions and logic for real-life problem-solving.

• Create dropdowns and validate user input.

• Generate summaries and graphical reports from raw data.

• Understand basic Excel security features like sheet protection.

• Explore introductory-level automation using macros (optional).