Task-1

You are tasked with analyzing a dataset containing login details of users to identify patterns in their behavior and flag irregularities **BY USER AND DATE (Sample output given in the summary sheet)**.

The dataset consists of the following columns:

- **CIRCLE:** Location of the user
- **USER_CODE:** A unique identifier for each user.
- **USER_NAME:** Name of the user
- **LOGIN_DATE:** Date of login
- **LOGIN_TIME:** The date and time when the user logged in.
- **TIME_DIFF_BETWEEN_PREV_LOGIN:** Time difference since the user's previous login.
- **DEVICE_BRAND:** Name of the device used for login
- **DEVICE_MODEL:** The device used for the login (e.g., Redmi, realme).
- **DEVICE_ID:** Device id of the device used for login.

Objectives:

All the solutions must be given in the summary sheet (except the first task) and the formulas used for the solution must be intact (Only values won't be accepted).

- **Covert to a table using the raw_data sheet**
- **Calculate the total number of logins for each user.**
- **First login time of the user**
- **Last login time of the user**
- **Compute the average time difference between logins for each user.**
- **Determine the number of unique devices each user has logged in with.**

Deliverable:

The solution should use Excel functions to derive all the required insights. Ensure the dataset is processed in a table to generate actionable insights for further analysis and make sure to send the solution with the function intact used to solve this problem.

Task-2

We have some **Retailer Shop data and UserCode** means **shop Manager**. every manager has some shop. and manager visit an amount of shop **weekly**. we mention **Two (2) week** saturday 1 means **week 1** and day **seq 1** another satruday 2 means **week 2** and day **sequence 7,** it serially day sequence saturday-1 is R-1, sunday 1 is R-2 .... thursday 1 is R-6, saturday-2 is R-7 .... thursday -2 is R-12.

Retailer Shop Data Analysis

Objective:

Analyze and process retailer shop data to extract insights and create a structured output. Perform data cleaning, transformation, and analysis to ensure actionable results.

Task Overview:

You are provided with an Excel file containing retailer shop data. The dataset includes details about shop visits, shop managers (UserCode), and their weekly visit schedules. Your task is to clean, transform, and analyze the dataset by following the steps outlined below:

1. Data Cleaning and Preparation

Review the dataset for inconsistencies, missing values, or duplicate entries.

Clean the data to ensure consistency and readiness for analysis.

Validate the formatting of necessary columns such as UserCode, Day, and ShopCode to meet analysis requirements.

2. Data Transformation

Transform the visit_plan sheet by adding the following new columns:

Day_Sequence:

Create a new column to assign a sequential number to each day:

Saturday 1 (Week 1) = Sequence 1

Sunday 1 (Week 1) = Sequence 2

Continue in this pattern until Thursday 1 (Week 1) = Sequence 6.

Saturday 2 (Week 2) = Sequence 7, and so on.

End the sequence at Thursday 2 (Week 2) = Sequence 12. (total sequence 1 to 12)

Route_No:

Assign route numbers based on the Day_Sequence.

Example:

Sequence 1 = R-1

Sequence 2 = R-2

Continue in this pattern until Sequence 12 = R-12.

Route_Display_Name:

Match the Route_No and UserCode columns from the visit_plan sheet with the corresponding data in the route_display_name sheet.

Create a new column called Route_Display_Name in the visit_plan sheet and populate it with the matching display name.

3. Data Analysis

Using the cleaned and transformed dataset, perform the following analysis:

Data Analysis:

Using the cleaned and transformed dataset, perform the following analysis:

Unique Shops Analysis:

Calculate the total number of unique ShopCode values in the dataset.

Manager Route Analysis:

For each shop manager (UserCode), determine the total number of routes they manage.

For each route:

Calculate the total number of shops included.

Calculate the number of unique shops (ShopCode) included.

Region-wise Analysis:

Calculate the total number of shop managers (UserCode) in each region.

Deliverables:

Processed Dataset:

Submit the cleaned and transformed dataset with the following updates:

Day_Sequence column

Route_No column

Route_Display_Name column

Summary Report:

Provide a report (in Excel or text format) that includes:

- The total number of unique shops (ShopCode).
- The total number of routes managed by each shop manager (UserCode).
- The total number of shops and unique shops for each route.
- The total number of shop managers (UserCode) in each region.