STRAVA FITNESS APP – SQL ANALYSIS

Overview:

After importing the merged master dataset (`cleaned_master.csv`) into MySQL Workbench, SQL was utilized in this project to directly extract insightful summaries and spot patterns.

To find user-level fitness trends and sleep quality metrics, the data was loaded into a table called `fitness_data` and examined using common SQL queries.

The actions taken were:

- Used Workbench import tools to import the cleaned CSV into MySQL.
- Constructed the `fitness_data` table using the proper data types
- Developed queries to examine BMI, sleep, and activity

Key SQL Queries:

- Average steps per user:

  ```
  SELECT Id, ROUND(AVG(TotalSteps), 2) AS AvgSteps
  FROM fitness_data
  GROUP BY Id;
  ```

- Sleep efficiency (asleep/time in bed):

  ```
  SELECT Id, ROUND(TotalMinutesAsleep / TotalTimeInBed, 2) AS SleepEfficiency
  FROM fitness_data
  WHERE TotalTimeInBed > 0;
  ```

- Top 5 active users:

  ```
  SELECT Id, SUM(VeryActiveMinutes) AS TotalVeryActiveMinutes
  FROM fitness_data
  GROUP BY Id
  ORDER BY TotalVeryActiveMinutes DESC
  LIMIT 5;
  ```

- Correlation of average steps vs calories:

SELECT ROUND(AVG(TotalSteps), 2) AS AvgSteps, ROUND(AVG(Calories), 2) AS AvgCalories

FROM fitness_data;

- BMI summary:

  SELECT ROUND(AVG(BMI), 2) AS AvgBMI, MIN(BMI), MAX(BMI)

  FROM fitness_data

  WHERE BMI IS NOT NULL;

Insights:

- Determined which users performed well and poorly
- measured sleep patterns in quantifiable terms
- Average trends in calorie burn and physical activity were discovered.
- Filtered outputs for dashboard visuals were produced.