# FITBIT DATA ANALYSIS PROJECT BY DIPEN PRADHAN & ROSHANI SINGH

*Fitbit Dataset Info:*

**Content:**
Respondents generated this dataset to a distributed survey via Amazon Mechanical Turk between 03.12.2016 and 05.12.2016. Thirty eligible Fitbit users consented to submit personal tracker data, including minute-level output for physical activity, heart rate, and sleep monitoring. Individual reports can be parsed by export session ID (column A) or timestamp (column B). Variation between output represents the use of different Fitbit trackers and individual tracking behaviours/preferences.
This dataset contains 18 different files like dailyActivity, dailyCalories, hourlySteps, etc…

**Business Objectives:**

- What are the trends identified?
- How could these trends apply to customers?
- How could these trends help influence marketing strategy?

**Deliverables:**

1. A clear summary of the business task
2. A description of all data sources used
3. Documentation of any cleaning or manipulation of data
4. A summary of the analysis
5. Supporting visualizations and key findings
6. High-level content recommendations based on the analysis

## Tools:

Python for Data Cleaning, Data Transformation, Data Visualisation and Data Analysis,

Datasets:
Daily Activity
Daily Calories
daily Intensities
daily Steps
heartrate seconds
hourly Calories
hourly Intensities
hourly Steps
minuteCaloriesNarrow
minuteCaloriesWide
minuteIntensitiesNarrow
minuteIntensitiesWide

minuteMETsNarrow
minuteSleep
minuteStepsNarrow
minuteStepsWide
sleepDay
weightLogInfo

# DATA ANALYSING JOURNEY

I have done the analysation of the smart device usuage FitBit Fitness Tracker Data in order to gain insight into how consumers use of smart devices.

The datasets have the high usabilty score for completeness, credibility and compatibility. The datasets are available in the multiple csv files in my Git Hub account(https://github.com/diouavi6161/Fitbit-Data-Analysis) which can be downloaded as a compressed zip folder. This dataset contains personal fitness tracker from many fitbit users. The Fitbit users consented to the submission of personal tracker data, including minute-level output for physical activity, heart rate, and sleep monitoring. It includes information about daily activity, steps, and heart rate that can be used to explore user's habits.

1. Cleaned data, calculated descriptive stats, and used visualizations using charts.

2. Delved into relationships with scatter plots, reglet plots.

3. Enhanced charts for deeper insights.

4. Documented findings in a comprehensive report, aligning data with real-world trends.

5. Creating Box-plot for identifying the outliers .

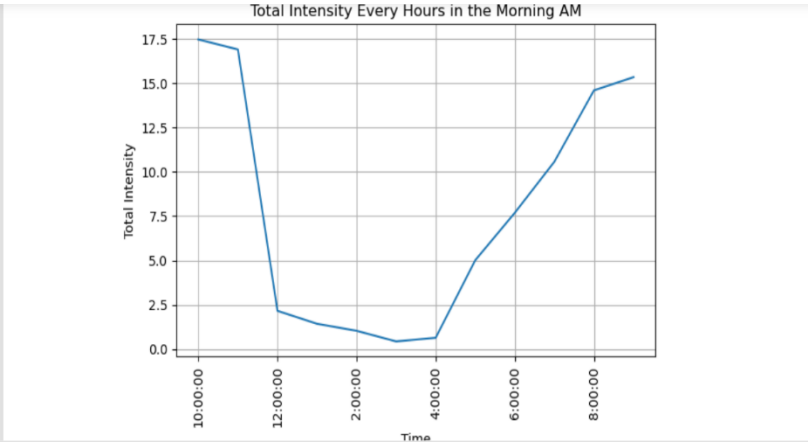
First, We have used the Weight of the User, daily sleep time, and daily activity data collected to find out how overweight and other variables are effecting each other.

The datasets used : weightLogInfo , sleepDay and DailyActivity.

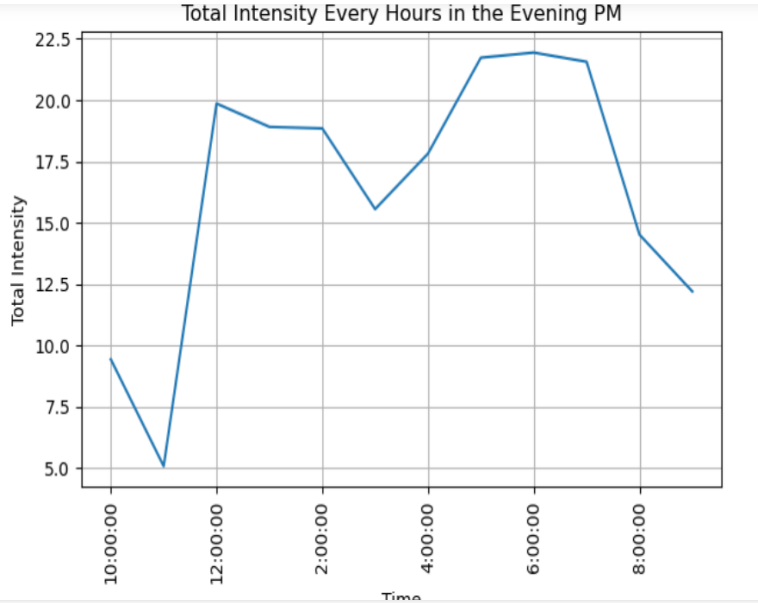
After Analysing we got that only 8 participant provided their weight data. Out of 8 user who recorded their weight data, 5 are overweight and 3 are not overweight. So we have informed them about their health situation and encouraged them how to change and overcome health challenges.

Second , Taking the minuteIntensitiesWide dataset we have checked the intensity or activity of the Users.

We have plot some graphs creating the relation between Total Intensity or activity and Time

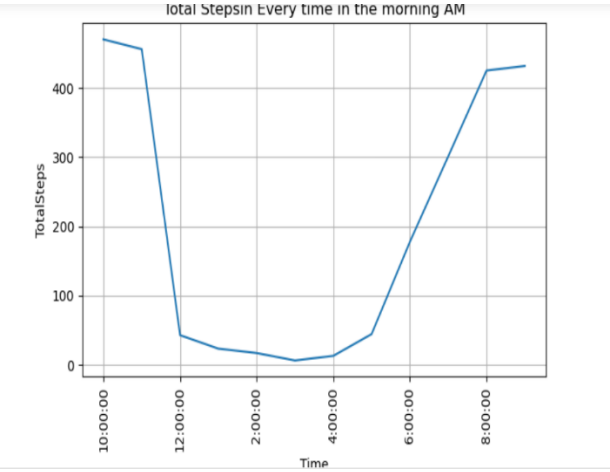



The activity drops at night after midnight becuase most of the users take rest, and it increases after 4 am when people start to wake up in the morning till 9am. It shows that most of the users are active during the early morning before they go to work.

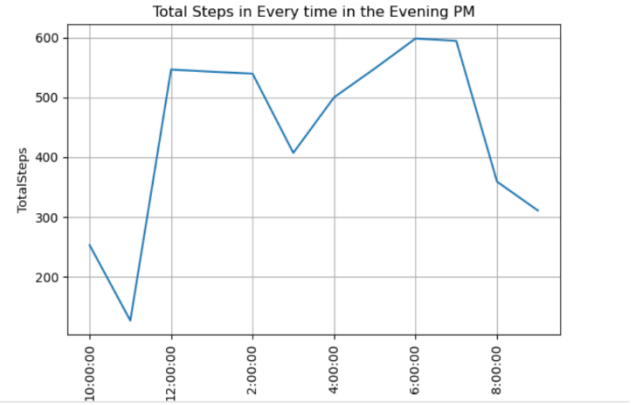



The Intensity increases after 3pm and reamains high from 5 till 7 pm for most of the users. It may be people going to walk or gym after work.

After , taking the minuteStepsWide dataset we have checked the  activity of the Users.




It shows that the users starts activity after 4am in the morning with highest activity peak at 10 am.




In the evening, maximum steps are taken from 5pm to 8pm or above.