

Fitbit Data Analysis

Problem

Fitbit is an electronics company that sells devices that track the user's physical activity and sleep. A few of the common features of Fitbit devices include step counts, calories burnt, heart rate, and quality of sleep. Millions of devices have been sold worldwide, proving the popularity of Fitbit and its products, but how effective, or rather, impactful, are the devices? Fitbit watches do a decent job tracking sleep patterns and physical activities, and users have the option to download their data to view. The data collected is meaningless, though, if they are only represented as just numbers on a spreadsheet.

Effectively transitioning to a healthier lifestyle and achieving fitness goals comes with knowing the appropriate changes to make. Having a thorough analysis and visual representations of the collected data provide insights to an individual's fitness and sleeping habits. Having this piece of knowledge can help an individual gauge what habits they should maintain and what they can change.

Client

As the data used for this project belongs to a particular Fitbit user, the analysis would be of great interest to that user. Another audience this study may attract are fitness enthusiasts.

It is reasonable to assume users who regularly track their physical activities and/or sleep strive for healthy living and have fitness goals. By translating the data into graphs or models, the targeted audience will be provided with an intuitive understanding of Tracy's physical and sleep pattern. The subject of this project, Tracy, is a group exercise instructor and a home health aide. As someone who is constantly up on her feet and moving, it is expected that her activity levels will be higher than that of an average person's.

The outcomes of the data analysis provide details to Tracy on her current fitness and sleeping habits. Based on her reactions to the findings of this report, she can make the appropriate changes to help herself achieve new health/fitness goals.

Data

The data that will be analyzed in this project belongs to a Fitbit user. She has been using her Fitbit Alta to track her activity and sleep for nearly four years (since August 2014).

The data are grouped into two different categories: "Activities" and "Sleep". Personal body information (e.g., weight, BMI) will be excluded in this analysis.

Approach

The goal of this project is to provide a comprehensive report that will intuitively inform Tracy of her current habits. Topics of particular interest are Tracy's activity levels, sleep quality, and how age has affected Stacey. Various graphs (e.g., bar graphs, scatter plots) will be used to visualize her physical activity and sleep over four years.

Deliverables

The deliverables for this project will come in the form of Python code, slides, and a Jupyter notebook.