### ****Scenario****

A smart device used by Individuals collects Data about their Exercise, Calories lost, total Steps made, Intensities of Exercise, Sleep, etc.  
  
The client has asked us to Analyze the Data to identify areas with opportunity to grow.  
  
Our goal is to understand the Data to fetch Insights and Trends/Patterns about the Consumers Behavior. Using this Information we can Anticipate their behavior/patterns and tailor our marketing strategy respectively.

### About the Data

The Data comes from a Tracker Band from the Consumers. It contains Personal Fitness Metrics of about 33 Unique Individuals.  
  
We are using 10 Datasets:

* 4 Daily Info files which we will merge into one DataFrame.
* 3 Hourly Info file which will also be merged into one DataFrame.
* 1 for Heart Rate, 1 for Weight Info, 1 for Sleep Info.

### ****Process****

EDA and Cleaning:  
  
Utilizing Python we will clean these Datasets before working on them. It's rich ecosystem of Libraries makes performing manipulation tasks extremely comfortable. This ensure our Data is in the best possible condition before importing it into SQL Servers.  
  
Setting up a Server:  
  
We will Store and Merge our data in a SQL Server because SQL is excellent at handling data. This ensures the Integrity of our data and also helps us create backups while connecting the database to different software/interface. Data Security can be seamlessly implemented by making user authentication, role-based access control and encryption.

Visualization:  
  
Tableau excels at converting raw data into dynamic and interactive visualizations. It can connect to wide range of data sources like SQL Servers, Cloud Services, Excel, Big Data and many more. For this case we will connect our Microsoft SQL Server to Tableau. Making a connection instead of simply importing the data through a file is more efficient because we can access the lastest data refreshed in a click. If our data is been collected continuously we can automate a scheduled refresh to always have the current data. Tableau help in creating compelling data stories. We can also seamless share our work across teams/departments/clients,etc.  
  
Dashboard Link: [https://public.tableau.com/views/FitnessInfoDashboard/Dashboard2?:language=en-US&publish=yes&:sid=&:redirect=auth&:display\_count=n&:origin=viz\_share\_link](https://www.google.com/url?q=https://public.tableau.com/views/FitnessInfoDashboard/Dashboard2?:language=en-US&publish=yes&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link" \t "https://colab.research.google.com/drive/_blank)   
  
Making Recommendations:  
  
After Analyzing the Insigths we will be able to make recommendations to improve performance. Some alerts/signals to keep the consumer motivated, have some basic challenges, make a feedback system,etc.

# Conclusion

**Through our EDA Process we've noticed that the DataFrames for Daily Sets and Hourly have the same Id and Date/Day Columns respectively. This means we can merge them in our Database seamlessly.  
We cannot merge the data into one singular table because the total rows differ for each one. Regardless denormalizing the data isn't recommended. Using the SQL Server we will merge the data to create 2 new Table in our Schema. The other remainging datasets have already been convert in their final form and will be import into our SQL Server.**

# Recommendation

1. **Sedentary Hours should be mitigated for healthier lifestyle.**
2. **Users should walk around 8000 Steps Daily.**
3. **Significant Amount of Users are Light on the Activities.**
4. **They should sleep for aprroximatly 7 hours a Day.**
5. **We can create a notifcation to promt them to excercise.**
6. **Can make simple workout drill as per the Activity Score.**
7. **Keep them motivated with supportive prompts**