**Human-Activity-Recognition-Using-Smartphones---KNeighbors-Classifier**

In this project we will design a robust activity recogonition system based on the smartphones. As you know mobile devices have accelerometer as the sensor which collects the activities. These activities can be classified using K-nearest neighbour.

**REQUIREMENT**

1. Pandas
2. Numpy
3. Matplotlib
4. Scikit Learn

**Machine Learning Model Used**

1. k-nearest neighbors

**Database Information**

The data was collected from 30 subjects aged between 19 and 48 years old performing one of 6 standard activities while wearing a waist-mounted smartphone that recorded the movement data. Video was recorded of each subject performing the activities and the movement data was labeled manually from these videos.

**Attribute Information:**

For each record in the dataset it is provided:

* Triaxial acceleration from the accelerometer (total acceleration) and the estimated body acceleration.
* Triaxial Angular velocity from the gyroscope.
* A 561-feature vector with time and frequency domain variables.
* Its activity label.
* An identifier of the subject who carried out the experiment.

**STEPS :**

1. Importing Libraries
2. Exploring the Dataset
3. Exploratory Data Analysis
4. Data Preprocessing
5. Model Building
   * KNeighborsClassifier
6. Evaluation
7. Conclusion

**Summary :**

In this project we designed a robust activity recogonition system based on the date on smartphones. As you know mobile devices have accelerometer as the sensor which collects the activities. These activities were classified using K-nearest neighbour.

If you see the test results it is very clear that we were able classify with maximum accuracy