Study Design:

* Subject ID, Activity performed and data for each variable measured are read from the “test” data set.
* Subject ID, Activity performed and data for each variable measured are read from the “train” data set.
* Combine the test and train data into a single data set.
* Read the activity labels and map them in the data set.
* Read the features to name the columns of the measured variables in the data set.
* Refine the data set to get the variables which represents the mean and SD.
* Summarize the data by grouping them as per subject and activity. And get the average of the measure variables.

Code Book:

1. Keywords used for naming variable
   * “Time” – variables which are measured in the time domain
   * “Freq” – variables which are measured in the frequency domain
   * “Mean” – Mean value of the measurement
   * “Std” – Standard Deviation value of the measurement
   * “BodyAcceleration” – Body acceleration signal measured using accelerometer
   * “GravityAcceleration” – Gravity acceleration signal measured using accelerometer
   * “BodyGyro” – angular velocity signal measure using Gyroscope
   * “Jerk” – Jerk signal
   * “Magnitude” – Magnitude of the signal measured
   * “X” - axial signals in the X direction
   * “Y” - axial signals in the Y direction
   * “Z” - axial signals in the Z direction
2. Variable names
   * TimeBodyAcceleration - Body acceleration signal measured using accelerometer in time domain
   * TimeGravityAcceleration - Gravity acceleration signal measured using accelerometer in time domain
   * TimeBodyAccelerationJerk – Body linear acceleration jerk signal derived in time domain
   * TimeBodyGyro – Body angular velocity measured using gyroscope in time domain
   * TimeBodyGyroJerk - Body angular velocity jerk signal derived in time domain
   * TimeBodyAccelerationMagnitude – Magnitude of body acceleration signals measured in time domain
   * TimeGravityAccelerationMagnitude - Magnitude of gravity acceleration signals measured in time domain
   * TimeBodyGyroMagnitude – Magnitude of body angular velocity measured in time domain
   * TimeBodyGyroJerkMagnitude - Magnitude of body angular velocity jerk signals measured in time domain
   * FreqBodyAcceleration - Body acceleration signal measured using accelerometer in frequency domain
   * FreqBodyAccelerationJerk - Body linear acceleration jerk signal derived in frequency domain
   * FreqBodyGyro - Body angular velocity measured using gyroscope in frequency domain
   * FreqBodyAccelerationMagnitude – Magnitude of body acceleration signals measured in frequency domain
   * FreqBodyAccelerationJerkMagnitude - Magnitude of body acceleration jerk signals measured in frequency domain
   * FreqBodyGyroMagnitude - Magnitude of body angular velocity measured in frequency domain
   * FreqBodyGyroJerkMagnitude - Magnitude of body angular velocity jerk signals measured in frequency domain