Getting and cleaning data course project

This is the code book of the data set `tidy.txt`.

Data set

`tidy.txt` is a text file whose values are separated by spaces. There are 69 colomns and 180 rows contained in this data set. The first row shows the variable names.

Variables

- Subject: interger, ranges from 1 to 30
- ActivityDescription: Description of six different activities
  - WALKING
  - WALKING_UPSTAIRS
  - WALKING_DOWNSTAIRS
  - SITTING
  - STANDING
  - LAYING
- ActivityIndex: integer, ranges from 1 to 6, each index corresponds to an activity
  - 1 : WALKING
  - 2 : WALKING_UPSTAIRS
  - 3 : WALKING_DOWNSTAIRS
  - 4 : SITTING
  - 5 : STANDING
  - 6 : LAYING
- tBodyAccMeanX: Average of body acceleration in X-axis in time domain
- tBodyAccMeanY: Average of body acceleration in Y-axis in time domain
- tBodyAccMeanZ: Average of body acceleration in Z-axis in time domain
- tBodyAccStdX: Standard deviation of body acceleration in X-axis in time domain
- tBodyAccStdX: Standard deviation of body acceleration in Y-axis in time domain
- tBodyAccStdX: Standard deviation of body acceleration in Z-axis in time domain
- tGravityAccMeanX: Average of gravity acceleration in X-axis in time domain
- tGravityAccMeanY: Average of gravity acceleration in Y-axis in time domain
- tGravityAccMeanZ: Average of gravity acceleration in Z-axis in time domain
- tGravityAccStdX: Standard deviation of gravity acceleration in X-axis in time domain
- tGravityAccStdY: Standard deviation of gravity acceleration in Y-axis in time domain
- tGravityAccStdZ: Standard deviation of gravity acceleration in Z-axis in time domain
- tBodyAccJerkMeanX: Average of body acceleration jerk in X-axis in time domain
- tBodyAccJerkMeanY: Average of body acceleration jerk in Y-axis in time domain
- tBodyAccJerkMeanZ: Average of body acceleration jerk in Z-axis in time domain
- tBodyAccJerkStdX: Standard deviation of body acceleration jerk in X-axis in time domain
- tBodyAccJerkStdY: Standard deviation of body acceleration jerk in Y-axis in time domain
- tBodyAccJerkStdZ: Standard deviation of body acceleration jerk in Z-axis in time domain
- tBodyGyroMeanX: Average of body angular velocity in X-axis in time domain
- tBodyGyroMeanY: Average of body angular velocity in Y-axis in time domain
- tBodyGyroMeanZ: Average of body angular velocity in Z-axis in time domain
- tBodyGyroStdX: Standard deviation of body angular velocity in X-axis in time domain
- tBodyGyroStdY: Standard deviation of body angular velocity in Y-axis in time domain
- tBodyGyroStdZ: Standard deviation of body angular velocity in Z-axis in time domain
- tBodyGyroJerkMeanX: Average of body angular velocity jerk in X-axis in time domain

- tBodyGyroJerkMeanY: Average of body angular velocity jerk in Y-axis in time domain
- tBodyGyroJerkMeanZ: Average of body angular velocity jerk in Z-axis in time domain
- tBodyGyroJerkStdX: Standard deviation of body angular velocity jerk in X-axis in time domain
- tBodyGyroJerkStdY: Standard deviation of body angular velocity jerk in Y-axis in time domain
- tBodyGyroJerkStdZ: Standard deviation of body angular velocity jerk in Z-axis in time domain
- tBodyAccMagMean: Average of body acceleration magnitude in time domain
- tBodyAccMagStd: Standard deviation of body acceleration magnitude in time domain
- tGravityAccMagMean: Average of gravity acceleration magnitude in time domain
- tGravityAccMagStd: Standard deviation of gravity acceleration magnitude in time domain
- tBodyAccJerkMagMean: Average of body acceleration jerk magnitude in time domain
- tBodyAccJerkMagStd: Standard deviation of body acceleration magnitude in time domain
- tBodyGyroMagMean: Average of body angular velocity magnitude in time domain
- tBodyGyroMagStd: Standard deviation of body angular velocity magnitude in time domain
- tBodyGyroJerkMagMean: Average of body angular velocity jerk magnitude in time domain
- tBodyGyroJerkMagStd: Standard deviation of body angular velocity jerk magnitude in time domain
- fBodyAccMeanX: Average of body acceleration in X-axis in frequency domain
- fBodyAccMeanY: Average of body acceleration in Y-axis in frequency domain
- fBodyAccMeanZ: Average of body acceleration in Z-axis in frequency domain
- fBodyAccStdX: Standard deviation of body acceleration in X-axis in frequency domain
- fBodyAccStdX: Standard deviation of body acceleration in Y-axis in frequency domain
- fBodyAccStdX: Standard deviation of body acceleration in Z-axis in frequency domain
- fGravityAccMeanX: Average of gravity acceleration in X-axis in frequency domain
- fGravityAccMeanY: Average of gravity acceleration in Y-axis in frequency domain
- fGravityAccMeanZ: Average of gravity acceleration in Z-axis in frequency domain
- fGravityAccStdX: Standard deviation of gravity acceleration in X-axis in frequency domain
- fGravityAccStdY: Standard deviation of gravity acceleration in Y-axis in frequency domain
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- fBodyAccJerkMeanX: Average of body acceleration jerk in X-axis in frequency domain
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- fBodyAccJerkMeanZ: Average of body acceleration jerk in Z-axis in frequency domain
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- fBodyAccJerkStdY: Standard deviation of body acceleration jerk in Y-axis in frequency domain
- fBodyAccJerkStdZ: Standard deviation of body acceleration jerk in Z-axis in frequency domain
- fBodyGyroMeanX: Average of body angular velocity in X-axis in frequency domain
- fBodyGyroMeanY: Average of body angular velocity in Y-axis in frequency domain
- fBodyGyroMeanZ: Average of body angular velocity in Z-axis in frequency domain
- fBodyGyroStdX: Standard deviation of body angular velocity in X-axis in frequency domain
- fBodyGyroStdY: Standard deviation of body angular velocity in Y-axis in frequency domain
- fBodyGyroStdZ: Standard deviation of body angular velocity in Z-axis in frequency domain
- fBodyGyroJerkMeanX: Average of body angular velocity jerk in X-axis in frequency domain
- fBodyGyroJerkMeanY: Average of body angular velocity jerk in Y-axis in frequency domain
- fBodyGyroJerkMeanZ: Average of body angular velocity jerk in Z-axis in frequency domain
- fBodyGyroJerkStdX: Standard deviation of body angular velocity jerk in X-axis in frequency domain
- fBodyGyroJerkStdY: Standard deviation of body angular velocity jerk in Y-axis in frequency domain
- fBodyGyroJerkStdZ: Standard deviation of body angular velocity jerk in Z-axis in frequency domain
- fBodyAccMagMean: Average of body acceleration magnitude in frequency domain
- fBodyAccMagStd: Standard deviation of body acceleration magnitude in frequency domain
- fGravityAccMagMean: Average of gravity acceleration magnitude in frequency domain
- fGravityAccMagStd: Standard deviation of gravity acceleration magnitude in frequency domain
- fBodyAccJerkMagMean: Average of body acceleration jerk magnitude in frequency domain
- fBodyAccJerkMagStd: Standard deviation of body acceleration magnitude in frequency domain
- fBodyGyroMagMean: Average of body angular velocity magnitude in frequency domain
- fBodyGyroMagStd: Standard deviation of body angular velocity magnitude in frequency domain
- fBodyGyroJerkMagMean: Average of body angular velocity jerk magnitude in frequency domain

- fBodyGyroJerkMagStd: Standard deviation of body angular velocity jerk magnitude in frequency domain

Measurements

Measurements of signals are floating-point values, normalized and are within [-1,1].

Prior to normalization, acceleration measurements (variables containing `Acc`) were made in g's and gyroscope measurements (variables containing `Gyro`) were made in radians per second.

Magnitudes of three-dimensional signals (variables containing `Mag`) were calculated using the Euclidean norm.

The measurements are classified in two domains:

Time-domain signals (variables prefixed by `t`), resulting from the capture of accelerometer and gyroscope raw signals.

Frequency-domain signals (variables prefixed by `f`), resulting from the application of a Fast Fourier Transform (FFT) to some of the time-domain signals.