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Variable Description

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Due to the large amount of variables contained in the dataset, specific description is time-consuming and tedious. This code book rather contains description of the components of variables occurred in the raw data or in the tidy data. (Notice that variables in the tidydata.txt use Camel Case so" () "or "-" that occur in the raw data has been omitted.)

standard gravity units 'g' is used for the body data set

tAcc-XYZ

- accelerometer 3-axial raw signals (time domain signals)

tGyro-XYZ

- gyroscope 3-axial raw signals (time domain signals)

Jerk

- variables which are Jerk signals

tBodyAcc-XYZ

- body acceleration signals

tGravityAcc-XYZ

- gravity acceleration signals

Mag

- magnitude of the Jerk three-dimensional signals

The set of variables that were estimated from these signals are:

- mean(): Mean value
- std(): Standard deviation
- mad(): Median absolute deviation
- max(): Largest value in array
- min(): Smallest value in array
- sma(): Signal magnitude area
- energy(): Energy measure. Sum of the squares divided by the number of values.
- iqr(): Interquartile range
- entropy(): Signal entropy
- arCoeff(): Autorregresion coefficients with Burg order equal to 4
- correlation(): correlation coefficient between two signals
- maxInds(): index of the frequency component with largest magnitude
- meanFreq(): Weighted average of the frequency components to obtain a mean frequency
- skewness(): skewness of the frequency domain signal
- kurtosis(): kurtosis of the frequency domain signal
- bandsEnergy(): Energy of a frequency interval within the 64 bins of the FFT of each window.
- angle(): Angle between to vectors.

Additional vectors obtained by averaging the signals in a signal window sample. These are used on the angle() variable:

- gravityMean
- tBodyAccMean
- tBodyAccJerkMean
- tBodyGyroMean
- tBodyGyroJerkMean