

Code Book

Human Activity Recognition Using Smartphones Dataset

Data Science Specialization

Course: Getting and Cleaning Data

Course Project

Date: "Friday, November 21, 2014"

General Description:

This document contains the description of the variables included in the analysis made on the "Human Activity Recognition Using Smartphones Dataset" [1], the result of the analysis is the file: "tidy_data.txt"

Data set description:

The experiments have been carried out with a group of 30 volunteers within an age bracket of 19-48 years. Each person performed six activities (WALKING, WALKING_UPSTAIRS, WALKING_DOWNSTAIRS, SITTING, STANDING, LAYING) wearing a smartphone (Samsung Galaxy S II) on the waist. Using its embedded accelerometer and gyroscope, we captured 3-axial linear acceleration and 3-axial angular velocity at a constant rate of 50Hz. The experiments have been video-recorded to label the data manually. The obtained dataset has been randomly partitioned into two sets, where 70% of the volunteers was selected for generating the training data and 30% the test data.

The "tidy_data.txt" creates a second, independent tidy data set with the average of each variable for each activity and each subject.

Variables:

VARIABLE NAME	VARIABLE	VALUE OR DESCRIPTION
subject	ID of the subject that make part of the experiment	1 to 30
activity	Activity performed by the subject	WALKING WALKING_UPSTAIRS WALKING_DOWNSTAIRS SITTING STANDING LAYING
tBodyAcc-mean()-X	Mean of the variable tBodyAcc-mean-X	Calculated value from the original data set
tBodyAcc-mean()-Y	Mean of the variable tBodyAcc-mean-Y	Calculated value from the original data set
tBodyAcc-mean()-Z	Mean of the variable tBodyAcc-mean-Z	Calculated value from the original data set
tGravityAcc-mean()-X	Mean of the variable tGravityAcc-mean-X	Calculated value from the original data set
tGravityAcc-mean()-Y	Mean of the variable tGravityAcc-mean-Y	Calculated value from the original data set
tGravityAcc-mean()-Z	Mean of the variable tGravityAcc-mean-Z	Calculated value from the original data set
tBodyAccJerk-mean()-X	Mean of the variable tBodyAccJerk-mean-X	Calculated value from the original data set
tBodyAccJerk-mean()-Y	Mean of the variable tBodyAccJerk-mean-Y	Calculated value from the original data set
tBodyAccJerk-mean()-Z	Mean of the variable tBodyAccJerk-mean-Z	Calculated value from the original data set
tBodyGyro-mean()-X	Mean of the variable tBodyGyro-mean-X	Calculated value from the original data set
tBodyGyro-mean()-Y	Mean of the variable tBodyGyro-mean-Y	Calculated value from the original data set
tBodyGyro-mean()-Z	Mean of the variable tBodyGyro-mean-Z	Calculated value from the original data set
tBodyGyroJerk-mean()-X	Mean of the variable tBodyGyroJerk-mean-X	Calculated value from the original data set
tBodyGyroJerk-mean()-Y	Mean of the variable tBodyGyroJerk-mean-Y	Calculated value from the original data set
tBodyGyroJerk-mean()-Z	Mean of the variable tBodyGyroJerk-mean-Z	Calculated value from the original data set
tBodyAccMag-mean()	Mean of the variable tBodyAccMag-mean	Calculated value from the original data set
tGravityAccMag-mean()	Mean of the variable tGravityAccMag-mean	Calculated value from the original data set
tBodyAccJerkMag-mean()	Mean of the variable tBodyAccJerkMag-mean	Calculated value from the original data set
tBodyGyroMag-mean()	Mean of the variable tBodyGyroMag-mean	Calculated value from the original data set
tBodyGyroJerkMag-mean()	Mean of the variable tBodyGyroJerkMag-mean	Calculated value from the original data set

VARIABLE NAME	VARIABLE	VALUE OR DESCRIPTION
fBodyAcc-mean()-X	Mean of the variable fBodyAcc-mean-X	Calculated value from the original data set
fBodyAcc-mean()-Y	Mean of the variable fBodyAcc-mean-Y	Calculated value from the original data set
fBodyAcc-mean()-Z	Mean of the variable fBodyAcc-mean-Z	Calculated value from the original data set
fBodyAcc-meanFreq()-X	Mean of the variable fBodyAcc-meanFreq-X	Calculated value from the original data set
fBodyAcc-meanFreq()-Y	Mean of the variable fBodyAcc-meanFreq-Y	Calculated value from the original data set
fBodyAcc-meanFreq()-Z	Mean of the variable fBodyAcc-meanFreq-Z	Calculated value from the original data set
fBodyAccJerk-mean()-X	Mean of the variable fBodyAccJerk-mean-X	Calculated value from the original data set
fBodyAccJerk-mean()-Y	Mean of the variable fBodyAccJerk-mean-Y	Calculated value from the original data set
fBodyAccJerk-mean()-Z	Mean of the variable fBodyAccJerk-mean-Z	Calculated value from the original data set
fBodyAccJerk-meanFreq()-X	Mean of the variable fBodyAccJerk-meanFreq-X	Calculated value from the original data set
fBodyAccJerk-meanFreq()-Y	Mean of the variable fBodyAccJerk-meanFreq-Y	Calculated value from the original data set
fBodyAccJerk-meanFreq()-Z	Mean of the variable fBodyAccJerk-meanFreq-Z	Calculated value from the original data set
fBodyGyro-mean()-X	Mean of the variable fBodyGyro-mean-X	Calculated value from the original data set
fBodyGyro-mean()-Y	Mean of the variable fBodyGyro-mean-Y	Calculated value from the original data set
fBodyGyro-mean()-Z	Mean of the variable fBodyGyro-mean-Z	Calculated value from the original data set
fBodyGyro-meanFreq()-X	Mean of the variable fBodyGyro-meanFreq-X	Calculated value from the original data set
fBodyGyro-meanFreq()-Y	Mean of the variable fBodyGyro-meanFreq-Y	Calculated value from the original data set
fBodyGyro-meanFreq()-Z	Mean of the variable fBodyGyro-meanFreq-Z	Calculated value from the original data set
fBodyAccMag-mean()	Mean of the variable fBodyAccMag-mean	Calculated value from the original data set
fBodyAccMag-meanFreq()	Mean of the variable fBodyAccMag-meanFreq	Calculated value from the original data set
fBodyBodyAccJerkMag-mean()	Mean of the variable fBodyBodyAccJerkMag-mean	Calculated value from the original data set
fBodyBodyAccJerkMag-meanFreq()	Mean of the variable fBodyBodyAccJerkMag-meanFreq	Calculated value from the original data set
fBodyBodyGyroMag-mean()	Mean of the variable fBodyBodyGyroMag-mean	Calculated value from the original data set
fBodyBodyGyroMag-meanFreq()	Mean of the variable fBodyBodyGyroMag-meanFreq	Calculated value from the original data set
fBodyBodyGyroJerkMag-mean()	Mean of the variable fBodyBodyGyroJerkMag-mean	Calculated value from the original data set
fBodyBodyGyroJerkMag-meanFreq()	Mean of the variable fBodyBodyGyroJerkMag-meanFreq	Calculated value from the original data set
tBodyAcc-std()-X	Mean of the variable tBodyAcc-std-X	Calculated value from the original data set
tBodyAcc-std()-Y	Mean of the variable tBodyAcc-std-Y	Calculated value from the original data set

VARIABLE NAME	VARIABLE	VALUE OR DESCRIPTION
fBodyBodyGyroJerkMag-std()	Mean of the variable fBodyBodyGyroJerkMag-std	Calculated value from the original data set

REFERENCES

[1] Davide Anguita, Alessandro Ghio, Luca Oneto, Xavier Parra and Jorge L. Reyes-Ortiz. Human Activity Recognition on Smartphones using a Multiclass Hardware-Friendly Support Vector Machine. International Workshop of Ambient Assisted Living (IWAAL 2012). Vitoria-Gasteiz, Spain. Dec 2012