Codebook for peer-graded assignment week 4 of module 03 Getting and Cleaning the Data

me!

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Warning

Before running the script peer-graded.R, be aware that this script will:
- install packages dplyr and stringr in the default directory if there are not installed yet
- clean all your variables in the global environment at the beginning of the script
- clean all intermediate variables at the end of the script
- a temporary directory will be created in your current working directory, called DELETEME_612. The working directory will be then set to this DELETEME_612, and set back to your current directory at the end of the script.
- If there is already a directory called DELETEME_612 in your working directory, there will be an error message. This will be the case if you are trying to rerun the script. Please remove the directory called DELETEME_612 before rerunning.

About the experiment

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.

Results

Elements in Global Environment

After running the script, you will be left with 5 elements in your environment:
- **Q1_mergedf**: the data frame that answers Q1 after merging test and train dataset
- **Q2_selectdf**: after selecting column containing either mean or standard deviation
- **Q3_selectdf_label**: with descriptive activity names
- **Q4_selectdf_label**: with optimized naming
- **Q5_mean_by_gr**: a tidy dataset containing the mean by group for each column of Q4 dataset. This table is saved into a file in the temporary eorking directory, called *peer_graded_tidyTable.txt* (see comments in the script *peer_graded.R* for information about location)

About the final table

The last table Q5_mean_by_gr is a tidy table containing 180 observations of 81 variables. Variables are mean or standard deviation of movement indicators. They have been averaged for each "group", a group being a unique combination of person and activity type. A full description of the variables is provided in the table below. A link showing distribution and missing values (if any) are stored in:
- distribution.html - figures

Variables	measurement_type	Direction	domain
GRmean_tBodyAcc.mean_X	Accelerometer	X	Time
GRmean_tBodyAcc.mean_Y	Accelerometer	Y	Time
GRmean_tBodyAcc.mean_Z	Accelerometer	Z	Time
GRmean_tBodyAcc.std_X	Accelerometer	X	Time
GRmean_tBodyAcc.std_Y	Accelerometer	Y	Time
GRmean_tBodyAcc.std_Z	Accelerometer	Z	Time
GRmean_tGravityAcc.mean_X	Accelerometer	X	Time
GRmean_tGravityAcc.mean_Y	Accelerometer	Y	Time
GRmean_tGravityAcc.mean_Z	Accelerometer	Z	Time
GRmean_tGravityAcc.std_X	Accelerometer	X	Time
GRmean_tGravityAcc.std_Y	Accelerometer	Y	Time
GRmean_tGravityAcc.std_Z	Accelerometer	Z	Time
GRmean_tBodyAccJerk.mean_X	Accelerometer	X	Time
GRmean_tBodyAccJerk.mean_Y	Accelerometer	Y	Time
GRmean_tBodyAccJerk.mean_Z	Accelerometer	Z	Time
GRmean_tBodyAccJerk.std_X	Accelerometer	X	Time
GRmean_tBodyAccJerk.std_Y	Accelerometer	Y	Time
GRmean_tBodyAccJerk.std_Z	Accelerometer	Z	Time
GRmean_tBodyGyro.mean_X	Gyroscope	X	Time
GRmean_tBodyGyro.mean_Y	Gyroscope	Y	Time
GRmean_tBodyGyro.mean_Z	Gyroscope	Z	Time
GRmean_tBodyGyro.std_X	Gyroscope	X	Time
GRmean_tBodyGyro.std_Y	Gyroscope	Y	Time
GRmean_tBodyGyro.std_Z	Gyroscope	Z	Time
GRmean_tBodyGyroJerk.mean_X	Gyroscope	X	Time
GRmean_tBodyGyroJerk.mean_Y	Gyroscope	Y	Time
GRmean_tBodyGyroJerk.mean_Z	Gyroscope	Z	Time
GRmean_tBodyGyroJerk.std_X	Gyroscope	X	Time
GRmean_tBodyGyroJerk.std_Y	Gyroscope	Y	Time
GRmean_tBodyGyroJerk.std_Z	Gyroscope	Z	Time
GRmean_tBodyAccMag.mean	Accelerometer	N/A	Time
GRmean_tBodyAccMag.std	Accelerometer	N/A	Time
GRmean_tGravityAccMag.mean	Accelerometer	N/A	Time
GRmean_tGravityAccMag.std	Accelerometer	N/A	Time
GRmean_tBodyAccJerkMag.mean	Accelerometer	N/A	Time
GRmean_tBodyAccJerkMag.std	Accelerometer	N/A	Time
GRmean_tBodyGyroMag.mean	Gyroscope	N/A	Time
GRmean_tBodyGyroMag.std	Gyroscope	N/A	Time
GRmean_tBodyGyroJerkMag.mean	Gyroscope	N/A	Time
GRmean_tBodyGyroJerkMag.std	Gyroscope	N/A	Time
GRmean_fBodyAcc.mean_X	Accelerometer	X	Frequency
GRmean_fBodyAcc.mean_Y	Accelerometer	Y	Frequency
GRmean_fBodyAcc.mean_Z	Accelerometer	Z	Frequency
GRmean_fBodyAcc.std_X	Accelerometer	X	Frequency
GRmean_fBodyAcc.std_Y	Accelerometer	Y	Frequency

Variables	measurement_type	Direction	domain
GRmean_fBodyAcc.std_Z	Accelerometer	Z	Frequency
GRmean_fBodyAcc.meanFreq_X	Accelerometer	X	Frequency
GRmean_fBodyAcc.meanFreq_Y	Accelerometer	Y	Frequency
GRmean_fBodyAcc.meanFreq_Z	Accelerometer	Z	Frequency
GRmean_fBodyAccJerk.mean_X	Accelerometer	X	Frequency
GRmean_fBodyAccJerk.mean_Y	Accelerometer	Y	Frequency
GRmean_fBodyAccJerk.mean_Z	Accelerometer	Z	Frequency
GRmean_fBodyAccJerk.std_X	Accelerometer	X	Frequency
GRmean_fBodyAccJerk.std_Y	Accelerometer	Y	Frequency
GRmean_fBodyAccJerk.std_Z	Accelerometer	Z	Frequency
GRmean_fBodyAccJerk.meanFreq_X	Accelerometer	X	Frequency
GRmean_fBodyAccJerk.meanFreq_Y	Accelerometer	Y	Frequency
GRmean_fBodyAccJerk.meanFreq_Z	Accelerometer	Z	Frequency
GRmean_fBodyGyro.mean_X	Gyroscope	X	Frequency
GRmean_fBodyGyro.mean_Y	Gyroscope	Y	Frequency
GRmean_fBodyGyro.mean_Z	Gyroscope	Z	Frequency
GRmean_fBodyGyro.std_X	Gyroscope	X	Frequency
GRmean_fBodyGyro.std_Y	Gyroscope	Y	Frequency
GRmean_fBodyGyro.std_Z	Gyroscope	Z	Frequency
GRmean_fBodyGyro.meanFreq_X	Gyroscope	X	Frequency
GRmean_fBodyGyro.meanFreq_Y	Gyroscope	Y	Frequency
GRmean_fBodyGyro.meanFreq_Z	Gyroscope	Z	Frequency
GRmean_fBodyAccMag.mean	Accelerometer	N/A	Frequency
GRmean_fBodyAccMag.std	Accelerometer	N/A	Frequency
GRmean_fBodyAccMag.meanFreq	Accelerometer	N/A	Frequency
GRmean_fBodyBodyAccJerkMag.mean	Accelerometer	N/A	Frequency
GRmean_fBodyBodyAccJerkMag.std	Accelerometer	N/A	Frequency
GRmean_fBodyBodyAccJerkMag.meanFreq	Accelerometer	N/A	Frequency
GRmean_fBodyBodyGyroMag.mean	Gyroscope	N/A	Frequency
GRmean_fBodyBodyGyroMag.std	Gyroscope	N/A	Frequency
GRmean_fBodyBodyGyroMag.meanFreq	Gyroscope	N/A	Frequency
GRmean_fBodyBodyGyroJerkMag.mean	Gyroscope	N/A	Frequency
GRmean_fBodyBodyGyroJerkMag.std	Gyroscope	N/A	Frequency
GRmean_fBodyBodyGyroJerkMag.meanFreq	Gyroscope	N/A	Frequency
subject	N/A	N/A	N/A
activity_name	N/A	N/A	N/A