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Data Cleaning Project using
Human Activity Recognition Using Smartphones Dataset

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Data Science Specialization Course
Getting and Cleaning Data
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This project describe the process of cleaning the abovementioned data and outline the necessary steps and procedures anyone who will like to use this process to clean the data

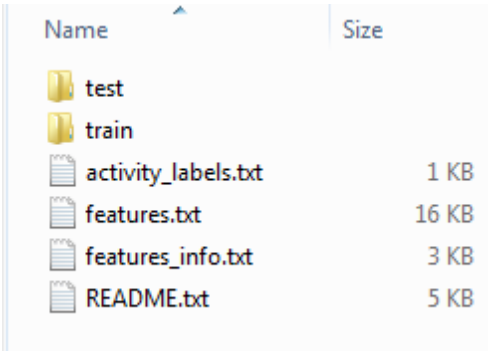
1. Pre-processing

Download the following dataset to your local storage and extract the zip folder to its default description.

Here are the data for the project:

https://d396qusza40orc.cloudfront.net/getdata%2Fprojectfiles%2FUCI%20HAR%20Dataset.zip

When the zip folder is unzipped, you will see the following files and sub-folders origination from your newly created folder :



In your data clean process, please see the directory of these files and folder as your working directory.

The directory includes the following files:

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- 'README.txt' : explanation about the data collection project

- 'features_info.txt': Shows information about the variables used on the feature vector.

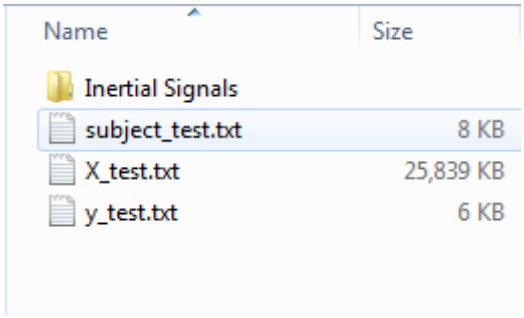
- 'features.txt': List of all features.

- 'activity_labels.txt': Links the class labels with their activity name.

- Test folder – This is the results of measurement of the test data

- Train folder : This is the results of measurement of the train data

Click on the test sub-folder and you will see these files and folder



Description of files in the test sub-folder :

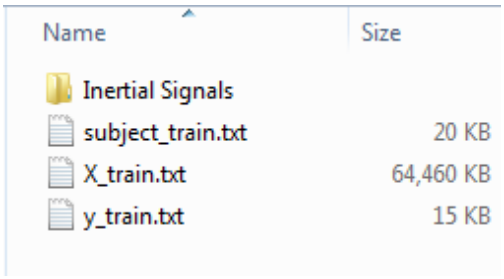
- 'X_test.txt': Test set.

- 'y_test.txt': Test labels.

- 'subject_test.txt': Each row identifies the subject who performed the activity for each window sample. Its range is from 1 to 30.

- 'Inertial Signals folder': see explanation below

Click on the train sub-folder and you will see these files and folder



- 'X_train.txt': Training set.

- 'y_train.txt': Training labels.

- 'subject_test.txt': Each row identifies the subject who performed the activity for each window sample. Its range is from 1 to 30.

- 'Inertial Signals folder': see explanation below.

The following files are available in the test and train Inertial folders. Their descriptions are equivalent.

- '../Inertial Signals/total_acc_x_train.txt': The acceleration signal from the smartphone accelerometer X axis in standard gravity units 'g'. Every row shows a 128 element vector. The same description applies for the 'total_acc_x_train.txt' and 'total_acc_z_train.txt' files for the Y and Z axis.

- '../Inertial Signals/body_acc_x_train.txt': The body acceleration signal obtained by subtracting the gravity from the total acceleration.

- '../Inertial Signals/body_gyro_x_train.txt': The angular velocity vector measured by the gyroscope for each window sample. The units are radians/second.

Notes:
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- Features are normalized and bounded within [-1,1].
- Each feature vector is a row on the text file.

For more information about this dataset contact:
activityrecognition@smartlab.ws

2. Git-hub

The following are the files found in the Git-hub folder from which you have download this README file. The files available in Git-hub are the following :

a. README – TidyData.rtf

b. run_analysis.R : Download this file to your local working directory and execute the as source in your R Console. The version of the R you are running should be R Version 3.1.1 and later.

c. Codebook - Data Dictionary of the variables found in the data.

3. Results files

If you are to execute the run_analysis.R script, you will also have the following file generated in your working directory. They are :

a. TidyData.txt