Code Book

# STUDY DESIGN SECTION – How the data was collected

Two data sets have been considered during the analysis

1. [Human Activity Recognition Using Smartphones Dataset v1.0](https://d396qusza40orc.cloudfront.net/getdata%2Fprojectfiles%2FUCI%20HAR%20Dataset.zip)

Detail information about how the data was collected is included within dataset group of files.

Also it can be found at GitHub project directory, as “[README\_UCI CHAR Dataset.txt](https://github.com/JaimeLaorden/GettingCleaningData_Course_Project/blob/master/README_UCI%20CHAR%20Dataset.txt)”

1. [x\_global\_avg.txt](https://github.com/JaimeLaorden/GettingCleaningData_Course_Project/blob/master/x_global_avg.txt)

This data set is produced by processing files “X\_test.txt”, “y\_test.txt”, “X\_train.txt” and “y\_test.txt”

The table is produced with code “[Run\_analysis.R](https://github.com/JaimeLaorden/GettingCleaningData_Course_Project/blob/master/Run_analysis.R" \o "Run_analysis.R)”.

Detail description of steps followed in the process is included on [README.md](https://github.com/JaimeLaorden/GettingCleaningData_Course_Project/blob/master/README.md) file and within code

The files can be located at GitHub project directory, [https://github.com/JaimeLaorden/GettingCleaningData\_Course\_Project](https://github.com/JaimeLaorden/GettingCleaningData_Course_Project%20)

# CODE BOOK

As commented in point 1 section “study design”, detailed information on features description and associated measures is on “[README\_UCI CHAR Dataset.txt](https://github.com/JaimeLaorden/GettingCleaningData_Course_Project/blob/master/README_UCI%20CHAR%20Dataset.txt)”, together with “features.txt” and “activity\_labels.txt”, all of them available within original dataset and at Course Project repository.

“X\_GLOBAL\_AVG.TXT”

### Summary:

|  |  |
| --- | --- |
| Each row represents a pair “Activity” – Experimenter” | |
| * 180 rows (6 activities x 30 experimenters) |
| For each row it is provided: |

* Column “Activity”
* Column “Experimenter”
* 561 columns with average of variable measurement, for each pair # of Activity and Experimenter

### Attributes/Features/Variables

* “**Activity**” values have been defined as described in “activity\_labels.txt” and correspond to the kind of activity the experimenter was realizing when the measurement was done:
* WALKING
* WALKING\_UPSTAIRS
* WALKING\_DOWNSTAIRS
* SITTING
* STANDING
* LAYING
* **“Experimenter**” values have been defined as a number 1:30, indicating who was the experimenter involved in the measurement, as there was a 30 experimenters group.

Experimenters are within an age bracket of 19-48 years

* **Human Activity** Measurements (561 variables)

Sows the average of each variable measurement, as per combination of “Activity” and “Experimenter” tests

The columns names and description are included within the “README\_UCI CHAR Dataset.txt”, together with “features.txt” and “activity\_labels.txt”, all of them available within original dataset and at Course Project repository.

Units for each variable are the ones described on the original file README\_UCI CHAR Dataset.txt

All original variables names have been normalized to convert to a valid variable name.

The process followed was:

1. Remove “…” (three dots) pattern in column names, and replace by a blank pattern
2. Remove “..”(two dots) pattern in column names, and replace by a blank pattern
3. Remove “.”(one dots) pattern in column names, and replace by a blank pattern

Sample translation is:

> head(cbind(features\_names\_ori, features\_names))

features\_names\_ori features\_names

[1,] "tBodyAcc-mean()-X" "tBodyAcc.mean.X"

[2,] "tBodyAcc-mean()-Y" "tBodyAcc.mean.Y"

[3,] "tBodyAcc-mean()-Z" "tBodyAcc.mean.Z"

[4,] "tBodyAcc-std()-X" "tBodyAcc.std.X"

[5,] "tBodyAcc-std()-Y" "tBodyAcc.std.Y"

[6,] "tBodyAcc-std()-Z" "tBodyAcc.std.Z"

> tail(cbind(features\_names\_ori, features\_names))

features\_names\_ori features\_names

[556,] "angle(tBodyAccJerkMean),gravityMean)" "angle.tBodyAccJerkMean.gravityMean"

[557,] "angle(tBodyGyroMean,gravityMean)" "angle.tBodyGyroMean.gravityMean"

[558,] "angle(tBodyGyroJerkMean,gravityMean)" "angle.tBodyGyroJerkMean.gravityMean"

[559,] "angle(X,gravityMean)" "angle.X.gravityMean"

[560,] "angle(Y,gravityMean)" "angle.Y.gravityMean"

[561,] "angle(Z,gravityMean)" "angle.Z.gravityMean"