# Code Book. Averages of human activity recognition using a Smartphone

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## Source data and experiment

The source data was provided via a zip file from the following link "http://archive.ics.uci.edu/ml/datasets/Human+Activity+Recognition+Using+Smartphones". It contains the measures of 30 subjects using a Samsung smartphones in two groups a test and a train group.

## Summarized data

Data is summarized using the average values for the means and standard deviation of each observation grouped by subject and activity. The data summarized is provided in a file called result.txt. The R script run_analysis.R could be used to repeat the analysis.

## Description of data

In the file every row has the average values of the mean and the standard deviation of the 30 subjects that participated in an study using a Samsung phone with sensors. All subjects executed different activities. Each row has the average for each subject and activity. The data has been combined from

The variables used are listed below.

| Order | Variable Name | Description |
|---|---|---|
| 1 | Subject | The individual identified by numbers 1 to 30 |
| 2 | Activity | The activity. Valid values are: Walking, Walking Upstairs, Walking Downstairs, Sitting, Standing and Laying |
| 3 | tBodyAcc-mean()-X | The average of the mean of variable tBodyAcc for axis X |
| 4 | tBodyAcc-mean()-Y | The average of the mean of variable tBodyAcc for axis Y |
| 5 | tBodyAcc-mean()-Z | The average of the mean of variable tBodyAcc for axis Z |

| Order | Variable Name | Description |
|---|---|---|
| 6 | tBodyAcc-std()-X | The average of the standard deviation of variable tBodyAcc for axis X |
| 7 | tBodyAcc-std()-Y | The average of the standard deviation of variable tBodyAcc for axis Y |
| 8 | tBodyAcc-std()-Z | The average of the standard deviation of variable tBodyAcc for axis Z |
| 9 | tGravityAcc-mean()-X | The average of the mean of variable tGravityAcc for axis X |
| 10 | tGravityAcc-mean()-Y | The average of the mean of variable tGravityAcc for axis Y |
| 11 | tGravityAcc-mean()-Z | The average of the mean of variable tGravityAcc for axis Z |
| 12 | tGravityAcc-std()-X | The average of the standard deviation of variable tGravityAcc for axis X |
| 13 | tGravityAcc-std()-Y | The average of the standard deviation of variable tGravityAcc for axis Y |
| 14 | tGravityAcc-std()-Z | The average of the standard deviation of variable tGravityAcc for axis Z |
| 15 | tBodyAccJerk-mean()-X | The average of the mean of variable tBodyAccJerk for axis X |
| 16 | tBodyAccJerk-mean()-Y | The average of the mean of variable tBodyAccJerk for axis Y |
| 17 | tBodyAccJerk-mean()-Z | The average of the mean of variable tBodyAccJerk for axis Z |
| 18 | tBodyAccJerk-std()-X | The average of the standard deviation of variable tBodyAccJerk for axis X |
| 19 | tBodyAccJerk-std()-Y | The average of the standard deviation of variable tBodyAccJerk for axis Y |
| 20 | tBodyAccJerk-std()-Z | The average of the standard deviation of variable tBodyAccJerk for axis Z |
| 21 | tBodyGyro-mean()-X | The average of the mean of variable tBodyGyro for axis X |
| 22 | tBodyGyro-mean()-Y | The average of the mean of variable tBodyGyro for axis Y |
| 23 | tBodyGyro-mean()-Z | The average of the mean of variable tBodyGyro for axis Z |
| 24 | tBodyGyro-std()-X | The average of the standard deviation of variable tBodyGyro for axis X |
| 25 | tBodyGyro-std()-Y | The average of the standard deviation of variable tBodyGyro for axis Y |
| 26 | tBodyGyro-std()-Z | The average of the standard deviation of variable tBodyGyro for axis Z |

| Order | Variable Name | Description |
|---|---|---|
| 27 | tBodyGyroJerk-mean()-X | The average of the mean of variable tBodyGyroJerk for axis X |
| 28 | tBodyGyroJerk-mean()-Y | The average of the mean of variable tBodyGyroJerk for axis Y |
| 29 | tBodyGyroJerk-mean()-Z | The average of the mean of variable tBodyGyroJerk for axis Z |
| 30 | tBodyGyroJerk-std()-X | The average of the standard deviation of variable tBodyGyroJerk for axis X |
| 31 | tBodyGyroJerk-std()-Y | The average of the standard deviation of variable tBodyGyroJerk for axis Y |
| 32 | tBodyGyroJerk-std()-Z | The average of the standard deviation of variable tBodyGyroJerk for axis Z |
| 33 | tBodyAccMag-mean() | The average of the mean of variable tBodyAccMag |
| 34 | tBodyAccMag-std() | The average of the standard deviation of variable tBodyAccMag |
| 35 | tGravityAccMag-mean() | The average of the mean of variable tGravityAccMag |
| 36 | tGravityAccMag-std() | The average of the standard deviation of variable tGravityAccMag |
| 37 | tBodyAccJerkMag-mean() | The average of the mean of variable tBodyAccJerkMag |
| 38 | tBodyAccJerkMag-std() | The average of the standard deviation of variable tBodyAccJerkMag |
| 39 | tBodyGyroMag-mean() | The average of the mean of variable tBodyGyroMag |
| 40 | tBodyGyroMag-std() | The average of the standard deviation of variable tBodyGyroMag |
| 41 | tBodyGyroJerkMag-mean() | The average of the mean of variable tBodyGyroJerkMag |
| 42 | tBodyGyroJerkMag-std() | The average of the standard deviation of variable tBodyGyroJerkMag |
| 43 | fBodyAcc-mean()-X | The average of the mean of variable fBodyAcc for axis X |
| 44 | fBodyAcc-mean()-Y | The average of the mean of variable fBodyAcc for axis Y |
| 45 | fBodyAcc-mean()-Z | The average of the mean of variable fBodyAcc for axis Z |
| 46 | fBodyAcc-std()-X | The average of the standard deviation of variable fBodyAcc for axis X |
| 47 | fBodyAcc-std()-Y | The average of the standard deviation of variable fBodyAcc for axis Y |

| Order | Variable Name | Description |
|---|---|---|
| 48 | fBodyAcc-std()-Z | The average of the standard deviation of variable fBodyAcc for axis Z |
| 49 | fBodyAccJerk-mean()-X | The average of the mean of variable fBodyAccJerk for axis X |
| 50 | fBodyAccJerk-mean()-Y | The average of the mean of variable fBodyAccJerk for axis Y |
| 51 | fBodyAccJerk-mean()-Z | The average of the mean of variable fBodyAccJerk for axis Z |
| 52 | fBodyAccJerk-std()-X | The average of the standard deviation of variable fBodyAccJerk for axis X |
| 53 | fBodyAccJerk-std()-Y | The average of the standard deviation of variable fBodyAccJerk for axis Y |
| 54 | fBodyAccJerk-std()-Z | The average of the standard deviation of variable fBodyAccJerk for axis Z |
| 55 | fBodyGyro-mean()-X | The average of the mean of variable fBodyGyro for axis X |
| 56 | fBodyGyro-mean()-Y | The average of the mean of variable fBodyGyro for axis Y |
| 57 | fBodyGyro-mean()-Z | The average of the mean of variable fBodyGyro for axis Z |
| 58 | fBodyGyro-std()-X | The average of the standard deviation of variable fBodyGyro for axis X |
| 59 | fBodyGyro-std()-Y | The average of the standard deviation of variable fBodyGyro for axis Y |
| 60 | fBodyGyro-std()-Z | The average of the standard deviation of variable fBodyGyro for axis Z |
| 61 | fBodyAccMag-mean() | The average of the mean of variable fBodyAccMag |
| 62 | fBodyAccMag-std() | The average of the standard deviation of variable fBodyAccMag |
| 63 | fBodyBodyAccJerkMag-mean() | The average of the mean of variable fBodyBodyAccJerkMag |
| 64 | fBodyBodyAccJerkMag-std() | The average of the standard deviation of variable fBodyBodyAccJerkMag |
| 65 | fBodyBodyGyroMag-mean() | The average of the mean of variable fBodyBodyGyroMag |
| 66 | fBodyBodyGyroMag-std() | The average of the standard deviation of variable fBodyBodyGyroMag |
| 67 | fBodyBodyGyroJerkMag-mean() | The average of the mean of variable fBodyBodyGyroJerkMag |
| 68 | fBodyBodyGyroJerkMag-std() | The average of the standard deviation of variable fBodyBodyGyroJerkMag |