

# CodeBook

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## R Markdown

**This is de CodeBook for the final project: Peer-graded Assignment: Getting and Cleaning Data Course Project**

### **Johns Hopkins Data Science Specialization via Coursera**

One of the most exciting areas in all of data science right now is wearable computing. Companies like Fitbit, Nike, and Jawbone Up are racing to develop the most advanced algorithms to attract new users. The data linked to from the course website represent data collected from the accelerometers from the Samsung Galaxy S smartphone. A full description is available at the site where the data was obtained:

[archive.ics.uci.edu](http://archive.ics.uci.edu)

### **Here are the data for the project:**

[cloudfront.net](https://cloudfront.net)

You should create one R script called `run_analysis.R` that does the following.

Merges the training and the test sets to create one data set.

Extracts only the measurements on the mean and standard deviation for each measurement.

Uses descriptive activity names to name the activities in the data set

Appropriately labels the data set with descriptive variable names.

From the data set in step 4, creates a second, independent tidy data set with the average of each variable for each activity and each subject.

## My project:

the explanation of the variables can be found at `codebook.docx`

or at the end of this document with a `skimr` summary

First I will load the packages I need to perform the getting and cleaning process

```
library(here)
library(tidyverse)
library(readr)
library(skimr)
library(data.table)
library(stringr)
```

Using the library `here`, I am setting up the correct path

```
path<- here::here( "Getting and Cleaning Data course Project", "UCI HAR Dataset")
```

The next code takes the features names from “features.txt”

```
features<-data.table::fread(here::here(path,"features.txt"))%>%
  set_names(c("index", "names"))
str(features)
```

```
## Classes 'data.table' and 'data.frame': 561 obs. of 2 variables:
## $ index: int 1 2 3 4 5 6 7 8 9 10 ...
## $ names: chr "tBodyAcc-mean()-X" "tBodyAcc-mean()-Y" "tBodyAcc-mean()-Z" "tBodyAcc-std()-X" ...
## - attr(*, ".internal.selfref")=<externalptr>
```

this select only the “names” in “features.txt” that contains mean or std

```
mean_std<- features %>% filter( grepl("mean|std",features$names))
str(mean_std)
```

```
## Classes 'data.table' and 'data.frame': 79 obs. of 2 variables:
## $ index: int 1 2 3 4 5 6 41 42 43 44 ...
## $ names: chr "tBodyAcc-mean()-X" "tBodyAcc-mean()-Y" "tBodyAcc-mean()-Z" "tBodyAcc-std()-X" ...
## - attr(*, ".internal.selfref")=<externalptr>
```

Loading the x\_train.txt (training data set) into a data.table, and setting the names of all columns to be the right names (in features). Then only selecting the names that contains mean or std

```
x_train<- data.table::fread(here::here(path, "train", "x_train.txt"))%>%
  setNames(features$names) %>% select(mean_std$names)
head(as.tibble(x_train))
```

```
## Warning: `as.tibble()` was deprecated in tibble 2.0.0.
## i Please use `as_tibble()` instead.
## i The signature and semantics have changed, see `?as_tibble`.
```

```
## # A tibble: 6 x 79
##   tBodyAcc-me~1 tBody~2 tBody~3 tBody~4 tBody~5 tBody~6 tGrav~7 tGrav~8 tGrav~9
##   <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl>
## 1 0.289 -0.0203 -0.133 -0.995 -0.983 -0.914 0.963 -0.141 0.115
## 2 0.278 -0.0164 -0.124 -0.998 -0.975 -0.960 0.967 -0.142 0.109
## 3 0.280 -0.0195 -0.113 -0.995 -0.967 -0.979 0.967 -0.142 0.102
## 4 0.279 -0.0262 -0.123 -0.996 -0.983 -0.991 0.968 -0.144 0.0999
## 5 0.277 -0.0166 -0.115 -0.998 -0.981 -0.990 0.968 -0.149 0.0945
## 6 0.277 -0.0101 -0.105 -0.997 -0.990 -0.995 0.968 -0.148 0.0919
## # ... with 70 more variables: `tGravityAcc-std()-X` <dbl>,
## # `tGravityAcc-std()-Y` <dbl>, `tGravityAcc-std()-Z` <dbl>,
## # `tBodyAccJerk-mean()-X` <dbl>, `tBodyAccJerk-mean()-Y` <dbl>,
## # `tBodyAccJerk-mean()-Z` <dbl>, `tBodyAccJerk-std()-X` <dbl>,
## # `tBodyAccJerk-std()-Y` <dbl>, `tBodyAccJerk-std()-Z` <dbl>,
## # `tBodyGyro-mean()-X` <dbl>, `tBodyGyro-mean()-Y` <dbl>,
## # `tBodyGyro-mean()-Z` <dbl>, `tBodyGyro-std()-X` <dbl>, ...
```

A data.table is created with the values to be transformed into activity\_labels

```
y_train<- data.table::fread(here::here(path, "train","y_train.txt")) %>%
  set_names("labels")
str(y_train)
```

```
## Classes 'data.table' and 'data.frame': 7352 obs. of 1 variable:
## $ labels: int 5 5 5 5 5 5 5 5 5 5 ...
```

```
## - attr(*, ".internal.selfref")=<externalptr>
```

A data.table is created that contains all the subjects (as character). An index is created.

```
subject_train<- data.table::fread(here::here(path, "train", "subject_train.txt"), colClasses = "character",
  set_names("subject") %>%
  mutate("index" = row_number())
str(subject_train)
```

```
## Classes 'data.table' and 'data.frame': 7352 obs. of 2 variables:
## $ subject: chr "1" "1" "1" "1" ...
## $ index : int 1 2 3 4 5 6 7 8 9 10 ...
## - attr(*, ".internal.selfref")=<externalptr>
```

The data from y\_train, subject\_train and activity labels is then merged.

```
activity_labelsX<-data.table::fread(here::here(path, "activity_labels.txt")) %>%
  set_names(c("labels", "activity_labels")) %>%
  merge(y_train, by = "labels") %>% mutate("index" = row_number()) %>%
  merge(subject_train, by = "index") %>% select(!index & !labels)
str(activity_labelsX)
```

```
## Classes 'data.table' and 'data.frame': 7352 obs. of 2 variables:
## $ activity_labels: chr "WALKING" "WALKING" "WALKING" "WALKING" ...
## $ subject : chr "1" "1" "1" "1" ...
## - attr(*, ".internal.selfref")=<externalptr>
## - attr(*, "sorted")= chr "index"
```

All the columns are merged to create the tidy x\_train dataset.

```
x_train<-bind_cols(activity_labelsX, x_train)
head(as.tibble(x_train))
```

```
## # A tibble: 6 x 81
##   activity_lab~1 subject tBody~2 tBody~3 tBody~4 tBody~5 tBody~6 tBody~7 tGrav~8
##   <chr>          <chr>    <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>
## 1 WALKING        1      0.289 -0.0203 -0.133 -0.995 -0.983 -0.914  0.963
## 2 WALKING        1      0.278 -0.0164 -0.124 -0.998 -0.975 -0.960  0.967
## 3 WALKING        1      0.280 -0.0195 -0.113 -0.995 -0.967 -0.979  0.967
## 4 WALKING        1      0.279 -0.0262 -0.123 -0.996 -0.983 -0.991  0.968
## 5 WALKING        1      0.277 -0.0166 -0.115 -0.998 -0.981 -0.990  0.968
## 6 WALKING        1      0.277 -0.0101 -0.105 -0.997 -0.990 -0.995  0.968
## # ... with 72 more variables: `tGravityAcc-mean()-Y` <dbl>,
## #   `tGravityAcc-mean()-Z` <dbl>, `tGravityAcc-std()-X` <dbl>,
## #   `tGravityAcc-std()-Y` <dbl>, `tGravityAcc-std()-Z` <dbl>,
## #   `tBodyAccJerk-mean()-X` <dbl>, `tBodyAccJerk-mean()-Y` <dbl>,
## #   `tBodyAccJerk-mean()-Z` <dbl>, `tBodyAccJerk-std()-X` <dbl>,
## #   `tBodyAccJerk-std()-Y` <dbl>, `tBodyAccJerk-std()-Z` <dbl>,
## #   `tBodyGyro-mean()-X` <dbl>, `tBodyGyro-mean()-Y` <dbl>, ...
```

The same process is repeated for the test dataset

```
x_test<- data.table::fread(here::here(path, "test", "X_test.txt")) %>%
  setNames(features$names) %>% select(mean_std$names)

y_test<- data.table::fread(here::here(path, "test", "y_test.txt")) %>%
  set_names("labels")

subject_train_y<- data.table::fread(here::here(path, "test", "subject_test.txt"), colClasses = "character",
```

```

set_names("subject") %>%
mutate("index" = row_number())

activity_labelsY <- data.table::fread(here::here(path, "activity_labels.txt")) %>%
  set_names(c("labels", "activity_labels")) %>%
  merge(y_test, by = "labels") %>% mutate("index" = row_number()) %>%
  merge(subject_train_y, by = "index") %>% select(!index & !labels)

x_test <- bind_cols(activity_labelsY, x_test)
head(as.tibble(x_test))

## # A tibble: 6 x 81
##   activity_lab~1 subject tBody~2 tBody~3 tBody~4 tBody~5 tBody~6 tBody~7 tGrav~8
##   <chr>          <chr>    <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>
## 1 WALKING        2      0.257 -0.0233 -0.0147 -0.938 -0.920 -0.668  0.936
## 2 WALKING        2      0.286 -0.0132 -0.119  -0.975 -0.967 -0.945  0.927
## 3 WALKING        2      0.275 -0.0261 -0.118  -0.994 -0.970 -0.963  0.930
## 4 WALKING        2      0.270 -0.0326 -0.118  -0.995 -0.973 -0.967  0.929
## 5 WALKING        2      0.275 -0.0278 -0.130  -0.994 -0.967 -0.978  0.927
## 6 WALKING        2      0.279 -0.0186 -0.114  -0.994 -0.970 -0.965  0.926
## # ... with 72 more variables: `tGravityAcc-mean()-Y` <dbl>,
## #   `tGravityAcc-mean()-Z` <dbl>, `tGravityAcc-std()-X` <dbl>,
## #   `tGravityAcc-std()-Y` <dbl>, `tGravityAcc-std()-Z` <dbl>,
## #   `tBodyAccJerk-mean()-X` <dbl>, `tBodyAccJerk-mean()-Y` <dbl>,
## #   `tBodyAccJerk-mean()-Z` <dbl>, `tBodyAccJerk-std()-X` <dbl>,
## #   `tBodyAccJerk-std()-Y` <dbl>, `tBodyAccJerk-std()-Z` <dbl>,
## #   `tBodyGyro-mean()-X` <dbl>, `tBodyGyro-mean()-Y` <dbl>, ...

```

Binding all the rows to create a tidy\_dataset. The subject is set to the first column

```

tidy_data <- bind_rows(x_train, x_test) %>%
  relocate(subject)
head(as.tibble(tidy_data))

## # A tibble: 6 x 81
##   subject activity_lab~1 tBody~2 tBody~3 tBody~4 tBody~5 tBody~6 tBody~7 tGrav~8
##   <chr>    <chr>          <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>
## 1 1      WALKING        0.289 -0.0203 -0.133 -0.995 -0.983 -0.914  0.963
## 2 1      WALKING        0.278 -0.0164 -0.124 -0.998 -0.975 -0.960  0.967
## 3 1      WALKING        0.280 -0.0195 -0.113 -0.995 -0.967 -0.979  0.967
## 4 1      WALKING        0.279 -0.0262 -0.123 -0.996 -0.983 -0.991  0.968
## 5 1      WALKING        0.277 -0.0166 -0.115 -0.998 -0.981 -0.990  0.968
## 6 1      WALKING        0.277 -0.0101 -0.105 -0.997 -0.990 -0.995  0.968
## # ... with 72 more variables: `tGravityAcc-mean()-Y` <dbl>,
## #   `tGravityAcc-mean()-Z` <dbl>, `tGravityAcc-std()-X` <dbl>,
## #   `tGravityAcc-std()-Y` <dbl>, `tGravityAcc-std()-Z` <dbl>,
## #   `tBodyAccJerk-mean()-X` <dbl>, `tBodyAccJerk-mean()-Y` <dbl>,
## #   `tBodyAccJerk-mean()-Z` <dbl>, `tBodyAccJerk-std()-X` <dbl>,
## #   `tBodyAccJerk-std()-Y` <dbl>, `tBodyAccJerk-std()-Z` <dbl>,
## #   `tBodyGyro-mean()-X` <dbl>, `tBodyGyro-mean()-Y` <dbl>, ...

```

The tidy data is then grouped and summarized by average

```

tidy_data_average <- tidy_data %>%
  group_by(subject, activity_labels) %>%
  summarise(across(everything(), mean), .groups = "drop") %>%

```

```

  arrange(activity_labels)
  tidy_data_average

## # A tibble: 40 x 81
##   subject activity_la~1 tBody~2 tBody~3 tBody~4 tBody~5 tBody~6 tBody~7 tGrav~8
##   <chr>   <chr>          <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>  <dbl>
## 1 20     LAYING          0.268 -0.0154 -0.103 -0.547 -0.259 -0.640  0.591
## 2 24     LAYING          0.277 -0.0177 -0.108 -0.675 -0.582 -0.636  0.695
## 3 27     LAYING          0.278 -0.0169 -0.112 -0.575 -0.541 -0.608  0.585
## 4 28     LAYING          0.278 -0.0192 -0.110 -0.649 -0.574 -0.686  0.624
## 5 29     LAYING          0.279 -0.0185 -0.109 -0.574 -0.598 -0.606  0.683
## 6 30     LAYING          0.276 -0.0176 -0.106 -0.616 -0.519 -0.523  0.697
## 7 12     SITTING          0.276 -0.0185 -0.108 -0.509 -0.401 -0.722  0.630
## 8 13     SITTING          0.276 -0.0177 -0.109 -0.625 -0.449 -0.587  0.710
## 9 17     SITTING          0.273 -0.0181 -0.109 -0.551 -0.507 -0.613  0.669
## 10 18     SITTING          0.278 -0.0173 -0.110 -0.992 -0.939 -0.951  0.963
## # ... with 30 more rows, 72 more variables: `tGravityAcc-mean()-Y` <dbl>,
## # `tGravityAcc-mean()-Z` <dbl>, `tGravityAcc-std()-X` <dbl>,
## # `tGravityAcc-std()-Y` <dbl>, `tGravityAcc-std()-Z` <dbl>,
## # `tBodyAccJerk-mean()-X` <dbl>, `tBodyAccJerk-mean()-Y` <dbl>,
## # `tBodyAccJerk-mean()-Z` <dbl>, `tBodyAccJerk-std()-X` <dbl>,
## # `tBodyAccJerk-std()-Y` <dbl>, `tBodyAccJerk-std()-Z` <dbl>,
## # `tBodyGyro-mean()-X` <dbl>, `tBodyGyro-mean()-Y` <dbl>, ...
skim(tidy_data_average)

```

Table 1: Data summary

Name	tidy_data_average
Number of rows	40
Number of columns	81
Column type frequency:	
character	2
numeric	79
Group variables	None

### Variable type: character

skim_variable	n_missing	complete_rate	min	max	empty	n_unique	whitespace
subject	0	1	1	2	0	30	0
activity_labels	0	1	6	18	0	6	0

### Variable type: numeric

skim_variable	n_missing	complete_rate	mean	sd	p0	p25	p50	p75	p100	hist
tBodyAcc-mean()-X	0	1	0.27	0.00	0.27	0.27	0.28	0.28	0.28	
tBodyAcc-mean()-Y	0	1	-	0.00	-	-	-	-	-	
			0.02		0.02	0.02	0.02	0.02	0.01	

skim_variable	n_miss- ing	com- plete_rate	mean	sd	p0	p25	p50	p75	p100	hist
tBodyAcc-mean()-Z	0	1	-	0.00	-	-	-	-	-	-
tBodyAcc-std()-X	0	1	0.11	0.17	0.12	0.11	0.11	0.11	0.10	-
tBodyAcc-std()-Y	0	1	0.63	0.21	0.99	0.67	0.62	0.55	0.13	-
tBodyAcc-std()-Z	0	1	0.53	0.17	0.97	0.59	0.53	0.42	-	-
tGravityAcc-mean()-X	0	1	0.65	0.08	0.98	0.71	0.65	0.58	0.08	-
tGravityAcc-mean()-Y	0	1	0.68	0.10	0.48	0.65	0.67	0.70	0.96	-
tGravityAcc-mean()-Z	0	1	0.00	0.11	-	-	0.02	0.07	0.28	-
tGravityAcc-std()-X	0	1	0.09	0.01	0.18	0.06	-	-	-	-
tGravityAcc-std()-Y	0	1	0.97	0.01	-	-	-	-	-	-
tGravityAcc-std()-Z	0	1	0.96	0.02	1.00	0.97	0.97	0.96	0.93	-
tBodyAccJerk-mean()-X	0	1	0.94	0.01	-	-	-	-	-	-
tBodyAccJerk-mean()-Y	0	1	0.08	0.01	0.97	0.95	0.94	0.93	0.88	-
tBodyAccJerk-mean()-Z	0	1	0.01	0.01	0.06	0.08	0.08	0.08	0.09	-
tBodyAccJerk-std()-X	0	1	0.00	0.01	0.00	0.00	0.01	0.01	0.02	-
tBodyAccJerk-std()-Y	0	1	0.02	0.16	-	-	-	-	-	-
tBodyAccJerk-std()-Z	0	1	0.66	0.19	0.99	0.70	0.64	0.58	0.17	-
tBodyGyro-mean()-X	0	1	0.62	0.12	-	-	-	-	-	-
tBodyGyro-mean()-Y	0	1	0.78	0.02	0.99	0.83	0.78	0.73	0.39	-
tBodyGyro-mean()-Z	0	1	0.03	0.01	0.07	0.04	0.03	0.02	0.01	-
tBodyGyro-std()-X	0	1	0.08	0.12	-	-	-	-	-	-
tBodyGyro-std()-Y	0	1	0.09	0.17	0.05	0.08	0.09	0.10	0.12	-
tBodyGyro-std()-Z	0	1	0.73	0.16	0.99	0.77	0.72	0.68	0.35	-
tBodyGyroJerk-mean()-X	0	1	0.70	0.01	-	-	-	-	-	-
tBodyGyroJerk-mean()-Y	0	1	0.67	0.00	0.99	0.72	0.69	0.60	0.17	-
tBodyGyroJerk-mean()-Z	0	1	0.10	0.00	0.11	0.10	0.10	0.09	0.06	-
tBodyGyroJerk-std()-X	0	1	0.04	0.00	-	-	-	-	-	-
tBodyGyroJerk-std()-Y	0	1	0.05	0.15	0.06	0.06	0.06	0.05	0.04	-
tBodyGyroJerk-std()-Z	0	1	0.74	0.13	0.99	0.78	0.74	0.67	0.03	-
tBodyGyroJerk-std()-Z	0	1	0.80	0.16	-	-	-	-	-	-
			0.74		0.99	0.80	0.76	0.69	0.05	

skim_variable	n_miss- ing	com- plete_rate	mean	sd	p0	p25	p50	p75	p100	hist
tBodyAccMag-mean()	0	1	-	0.18	-	-	-	-	-	-
tBodyAccMag-std()	0	1	0.57	0.17	0.98	0.62	0.54	0.50	0.06	-
tGravityAccMag-mean()	0	1	0.61	0.18	0.97	0.66	0.60	0.55	0.10	-
tGravityAccMag-std()	0	1	0.57	0.17	0.98	0.62	0.54	0.50	0.06	-
tBodyAccJerkMag-mean()	0	1	0.61	0.16	0.97	0.66	0.60	0.55	0.10	-
tBodyAccJerkMag-std()	0	1	0.67	0.17	0.99	0.71	0.66	0.58	0.15	-
tBodyGyroMag-mean()	0	1	0.64	0.17	0.99	0.69	0.63	0.56	0.09	-
tBodyGyroMag-std()	0	1	0.63	0.16	0.98	0.69	0.62	0.55	0.18	-
tBodyGyroJerkMag-mean()	0	1	0.68	0.14	0.98	0.74	0.68	0.61	0.20	-
tBodyGyroJerkMag-std()	0	1	0.77	0.13	0.99	0.83	0.78	0.71	0.20	-
fBodyAcc-mean()-X	0	1	0.79	0.17	0.99	0.86	0.80	0.72	0.24	-
fBodyAcc-mean()-Y	0	1	0.64	0.20	0.99	0.69	0.62	0.58	0.13	-
fBodyAcc-mean()-Z	0	1	0.56	0.15	0.98	0.61	0.56	0.44	0.10	-
fBodyAcc-std()-X	0	1	0.69	0.17	0.98	0.74	0.69	0.63	0.27	-
fBodyAcc-std()-Y	0	1	0.62	0.20	0.99	0.66	0.62	0.55	0.13	-
fBodyAcc-std()-Z	0	1	0.55	0.17	0.97	0.61	0.54	0.46	0.06	-
fBodyAcc-meanFreq()-X	0	1	0.65	0.08	0.97	0.71	0.65	0.59	0.06	-
fBodyAcc-meanFreq()-Y	0	1	0.20	0.07	0.35	0.24	0.22	0.18	0.01	-
fBodyAcc-meanFreq()-Z	0	1	0.02	0.08	0.16	0.03	0.04	0.07	0.14	-
fBodyAccJerk-mean()-X	0	1	0.06	0.16	0.14	0.01	0.05	0.09	0.28	-
fBodyAccJerk-mean()-Y	0	1	-	0.17	-	-	-	-	-	-
fBodyAccJerk-mean()-Z	0	1	0.67	0.13	0.99	0.70	0.64	0.54	0.09	-
fBodyAccJerk-std()-X	0	1	0.76	0.16	0.99	0.81	0.77	0.71	0.35	-
fBodyAccJerk-std()-Y	0	1	0.67	0.19	0.99	0.71	0.65	0.59	0.21	-
fBodyAccJerk-std()-Z	0	1	0.62	0.11	0.99	0.68	0.62	0.50	0.04	-
fBodyAccJerk-meanFreq()-X	0	1	0.80	0.11	0.99	0.85	0.80	0.74	0.42	-
			-	0.03	-	-	-	0.02	0.26	-
			0.03		0.27	0.09	0.04			-

skim_variable	n_miss- ing	com- plete_rate	mean	sd	p0	p25	p50	p75	p100	hist
fBodyAccJerk- meanFreq()-Y	0	1	- 0.20	0.09	- 0.40	- 0.25	- 0.20	- 0.16	0.09	
fBodyAccJerk- meanFreq()-Z	0	1	- 0.10	0.09	- 0.30	- 0.17	- 0.11	- 0.07	0.14	
fBodyGyro-mean()-X	0	1	- 0.68	0.16	- 0.99	- 0.71	- 0.67	- 0.63	- 0.08	
fBodyGyro-mean()-Y	0	1	- 0.72	0.16	- 0.99	- 0.80	- 0.75	- 0.64	- 0.25	
fBodyGyro-mean()-Z	0	1	- 0.66	0.18	- 0.99	- 0.71	- 0.67	- 0.60	- 0.08	
fBodyGyro-std()-X	0	1	- 0.75	0.11	- 0.99	- 0.79	- 0.74	- 0.69	- 0.45	
fBodyGyro-std()-Y	0	1	- 0.70	0.18	- 0.98	- 0.77	- 0.73	- 0.65	- 0.15	
fBodyGyro-std()-Z	0	1	- 0.71	0.15	- 0.99	- 0.75	- 0.72	- 0.64	- 0.23	
fBodyGyro-meanFreq()- X	0	1	- 0.10	0.08	- 0.31	- 0.14	- 0.10	- 0.04	- 0.12	
fBodyGyro-meanFreq()- Y	0	1	- 0.17	0.12	- 0.40	- 0.24	- 0.16	- 0.10	- 0.08	
fBodyGyro-meanFreq()- Z	0	1	- 0.04	0.10	- 0.27	- 0.08	- 0.04	- 0.00	- 0.27	
fBodyAccMag-mean()	0	1	- 0.61	0.18	- 0.98	- 0.66	- 0.59	- 0.52	- 0.06	
fBodyAccMag-std()	0	1	- 0.68	0.14	- 0.97	- 0.71	- 0.67	- 0.62	- 0.27	
fBodyAccMag- meanFreq()	0	1	0.08 0.08	0.08	- 0.07	- 0.04	- 0.08	- 0.14	- 0.26	
fBodyBodyAccJerkMag- mean()	0	1	- 0.64	0.18	- 0.99	- 0.68	- 0.62	- 0.54	- 0.08	
fBodyBodyAccJerkMag- std()	0	1	- 0.66	0.17	- 0.99	- 0.69	- 0.64	- 0.58	- 0.11	
fBodyBodyAccJerkMag- meanFreq()	0	1	0.18 0.09	0.09	- 0.02	- 0.12	- 0.18	- 0.22	- 0.40	
fBodyBodyGyroMag- mean()	0	1	- 0.71	0.15	- 0.99	- 0.77	- 0.73	- 0.65	- 0.16	
fBodyBodyGyroMag- std()	0	1	- 0.72	0.13	- 0.98	- 0.77	- 0.71	- 0.66	- 0.38	
fBodyBodyGyroMag- meanFreq()	0	1	- 0.05	0.11	- 0.31	- 0.11	- 0.04	- 0.01	- 0.29	
fBodyBodyGyroJerkMag- mean()	0	1	- 0.79	0.13	- 0.99	- 0.86	- 0.80	- 0.72	- 0.25	
fBodyBodyGyroJerkMag- std()	0	1	- 0.80	0.13	- 0.99	- 0.87	- 0.81	- 0.74	- 0.27	
fBodyBodyGyroJerkMag- meanFreq()	0	1	0.13 0.08	0.08	- 0.01	- 0.07	- 0.13	- 0.18	- 0.33	