Getting and Cleaning Data project

Here are the data for the project:

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

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.

```
## download data

url="https://d396qusza40orc.cloudfront.net/getdata%2Fprojectfiles%2FUCI%20HAR%20Dataset.zip"
download.file(url,destfile = "./project.zip")
unzip(zipfile="./project.zip",exdir=getwd())
```

Add a new chunk by clicking the *Insert Chunk* button on the toolbar or by pressing *Ctrl+Alt+I*.

When you save the notebook, an HTML file containing the code and output will be saved alongside it (click the *Preview* button or press *Ctrl+Shift+K* to preview the HTML file).

readind files into R

```
# Reading trainings tables:
x_train <- read.table("./UCI HAR Dataset/train/X_train.txt")
y_train <- read.table("./UCI HAR Dataset/train/y_train.txt")
subject_train <- read.table("./UCI HAR Dataset/train/subject_train.txt")
dim(x_train)
```

```
## [1] 7352  561
```

```
dim(y_train)
```

```
## [1] 7352    1
```

```
dim(subject_train)
```

```
## [1] 7352    1
```

```
# Reading testing tables:
x_test <- read.table("./UCI HAR Dataset/test/X_test.txt")
y_test <- read.table("./UCI HAR Dataset/test/y_test.txt")
subject_test <- read.table("./UCI HAR Dataset/test/subject_test.txt")
dim(x_test)
```

```
## [1] 2947  561
```

```
dim(y_test)
```

```
## [1] 2947    1
```

```
dim(subject_test)
```

```
## [1] 2947    1
```

```
# Reading feature vector:
features <- read.table('./UCI HAR Dataset/features.txt')
dim(features)
```

```
## [1] 561   2
```

```
# Reading activity labels:
activity_labels = read.table('./UCI HAR Dataset/activity_labels.txt')
dim(activity_labels)
```

```
## [1] 6 2
```

assign column names to train and test set

```
colnames(x_train)<-features[,2]
colnames(y_train)<-"activity_id"
colnames(x_test)<-features[,2]
colnames(y_test)<-"activity_id"
colnames(subject_train)<-"subject_id"
colnames(subject_test)<-"subject_id"
colnames(activity_labels)<-c("activity_id","activity_type")
```

merge datasets

```
train<-cbind(subject_train,x_train,y_train)
test<-cbind(subject_test,x_test,y_test)
train_and_test<-rbind(train,test)
```

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

```
column_name<-colnames(train_and_test)
mean<-grep("mean",column_name)
std<-grep("std",column_name)
id<-grep("id",column_name)

data<-train_and_test[,c(id,mean,std)]
names(data)
```

```
##  [1] "subject_id"                    "activity_id"
##  [3] "tBodyAcc-mean()-X"             "tBodyAcc-mean()-Y"
##  [5] "tBodyAcc-mean()-Z"             "tGravityAcc-mean()-X"
##  [7] "tGravityAcc-mean()-Y"          "tGravityAcc-mean()-Z"
##  [9] "tBodyAccJerk-mean()-X"         "tBodyAccJerk-mean()-Y"
## [11] "tBodyAccJerk-mean()-Z"         "tBodyGyro-mean()-X"
## [13] "tBodyGyro-mean()-Y"            "tBodyGyro-mean()-Z"
## [15] "tBodyGyroJerk-mean()-X"        "tBodyGyroJerk-mean()-Y"
## [17] "tBodyGyroJerk-mean()-Z"        "tBodyAccMag-mean()"
## [19] "tGravityAccMag-mean()"         "tBodyAccJerkMag-mean()"
## [21] "tBodyGyroMag-mean()"           "tBodyGyroJerkMag-mean()"
```

```
## [23] "fBodyAcc-mean()-X"                "fBodyAcc-mean()-Y"
## [25] "fBodyAcc-mean()-Z"                "fBodyAcc-meanFreq()-X"
## [27] "fBodyAcc-meanFreq()-Y"            "fBodyAcc-meanFreq()-Z"
## [29] "fBodyAccJerk-mean()-X"            "fBodyAccJerk-mean()-Y"
## [31] "fBodyAccJerk-mean()-Z"            "fBodyAccJerk-meanFreq()-X"
## [33] "fBodyAccJerk-meanFreq()-Y"        "fBodyAccJerk-meanFreq()-Z"
## [35] "fBodyGyro-mean()-X"               "fBodyGyro-mean()-Y"
## [37] "fBodyGyro-mean()-Z"               "fBodyGyro-meanFreq()-X"
## [39] "fBodyGyro-meanFreq()-Y"           "fBodyGyro-meanFreq()-Z"
## [41] "fBodyAccMag-mean()"               "fBodyAccMag-meanFreq()"
## [43] "fBodyBodyAccJerkMag-mean()"       "fBodyBodyAccJerkMag-meanFreq()"
## [45] "fBodyBodyGyroMag-mean()"          "fBodyBodyGyroMag-meanFreq()"
## [47] "fBodyBodyGyroJerkMag-mean()"      "fBodyBodyGyroJerkMag-meanFreq()"
## [49] "tBodyAcc-std()-X"                 "tBodyAcc-std()-Y"
## [51] "tBodyAcc-std()-Z"                 "tGravityAcc-std()-X"
## [53] "tGravityAcc-std()-Y"              "tGravityAcc-std()-Z"
## [55] "tBodyAccJerk-std()-X"             "tBodyAccJerk-std()-Y"
## [57] "tBodyAccJerk-std()-Z"             "tBodyGyro-std()-X"
## [59] "tBodyGyro-std()-Y"                "tBodyGyro-std()-Z"
## [61] "tBodyGyroJerk-std()-X"            "tBodyGyroJerk-std()-Y"
## [63] "tBodyGyroJerk-std()-Z"            "tBodyAccMag-std()"
## [65] "tGravityAccMag-std()"             "tBodyAccJerkMag-std()"
## [67] "tBodyGyroMag-std()"               "tBodyGyroJerkMag-std()"
## [69] "fBodyAcc-std()-X"                 "fBodyAcc-std()-Y"
## [71] "fBodyAcc-std()-Z"                 "fBodyAccJerk-std()-X"
## [73] "fBodyAccJerk-std()-Y"             "fBodyAccJerk-std()-Z"
## [75] "fBodyGyro-std()-X"                "fBodyGyro-std()-Y"
## [77] "fBodyGyro-std()-Z"                "fBodyAccMag-std()"
## [79] "fBodyBodyAccJerkMag-std()"        "fBodyBodyGyroMag-std()"
## [81] "fBodyBodyGyroJerkMag-std()"
```

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

```
library(dplyr)
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
data<-left_join(data,activity_labels,by="activity_id")
names(data)
```

```
##  [1] "subject_id"                    "activity_id"
##  [3] "tBodyAcc-mean()-X"             "tBodyAcc-mean()-Y"
##  [5] "tBodyAcc-mean()-Z"             "tGravityAcc-mean()-X"
##  [7] "tGravityAcc-mean()-Y"          "tGravityAcc-mean()-Z"
##  [9] "tBodyAccJerk-mean()-X"         "tBodyAccJerk-mean()-Y"
## [11] "tBodyAccJerk-mean()-Z"         "tBodyGyro-mean()-X"
```

```
## [13] "tBodyGyro-mean()-Y"              "tBodyGyro-mean()-Z"
## [15] "tBodyGyroJerk-mean()-X"          "tBodyGyroJerk-mean()-Y"
## [17] "tBodyGyroJerk-mean()-Z"          "tBodyAccMag-mean()"
## [19] "tGravityAccMag-mean()"           "tBodyAccJerkMag-mean()"
## [21] "tBodyGyroMag-mean()"             "tBodyGyroJerkMag-mean()"
## [23] "fBodyAcc-mean()-X"               "fBodyAcc-mean()-Y"
## [25] "fBodyAcc-mean()-Z"               "fBodyAcc-meanFreq()-X"
## [27] "fBodyAcc-meanFreq()-Y"           "fBodyAcc-meanFreq()-Z"
## [29] "fBodyAccJerk-mean()-X"           "fBodyAccJerk-mean()-Y"
## [31] "fBodyAccJerk-mean()-Z"           "fBodyAccJerk-meanFreq()-X"
## [33] "fBodyAccJerk-meanFreq()-Y"       "fBodyAccJerk-meanFreq()-Z"
## [35] "fBodyGyro-mean()-X"              "fBodyGyro-mean()-Y"
## [37] "fBodyGyro-mean()-Z"              "fBodyGyro-meanFreq()-X"
## [39] "fBodyGyro-meanFreq()-Y"          "fBodyGyro-meanFreq()-Z"
## [41] "fBodyAccMag-mean()"              "fBodyAccMag-meanFreq()"
## [43] "fBodyBodyAccJerkMag-mean()"      "fBodyBodyAccJerkMag-meanFreq()"
## [45] "fBodyBodyGyroMag-mean()"         "fBodyBodyGyroMag-meanFreq()"
## [47] "fBodyBodyGyroJerkMag-mean()"     "fBodyBodyGyroJerkMag-meanFreq()"
## [49] "tBodyAcc-std()-X"                "tBodyAcc-std()-Y"
## [51] "tBodyAcc-std()-Z"                "tGravityAcc-std()-X"
## [53] "tGravityAcc-std()-Y"             "tGravityAcc-std()-Z"
## [55] "tBodyAccJerk-std()-X"            "tBodyAccJerk-std()-Y"
## [57] "tBodyAccJerk-std()-Z"            "tBodyGyro-std()-X"
## [59] "tBodyGyro-std()-Y"               "tBodyGyro-std()-Z"
## [61] "tBodyGyroJerk-std()-X"           "tBodyGyroJerk-std()-Y"
## [63] "tBodyGyroJerk-std()-Z"           "tBodyAccMag-std()"
## [65] "tGravityAccMag-std()"            "tBodyAccJerkMag-std()"
## [67] "tBodyGyroMag-std()"              "tBodyGyroJerkMag-std()"
## [69] "fBodyAcc-std()-X"                "fBodyAcc-std()-Y"
## [71] "fBodyAcc-std()-Z"                "fBodyAccJerk-std()-X"
## [73] "fBodyAccJerk-std()-Y"            "fBodyAccJerk-std()-Z"
## [75] "fBodyGyro-std()-X"               "fBodyGyro-std()-Y"
## [77] "fBodyGyro-std()-Z"               "fBodyAccMag-std()"
## [79] "fBodyBodyAccJerkMag-std()"       "fBodyBodyGyroMag-std()"
## [81] "fBodyBodyGyroJerkMag-std()"      "activity_type"
```

Appropriately labels the data set with descriptive variable names.

```
names(data)<-gsub("^t", "time", names(data))
names(data)<-gsub("^f", "frequency", names(data))
names(data)<-gsub("Acc", "Accelerometer", names(data))
names(data)<-gsub("Gyro", "Gyroscope", names(data))
names(data)<-gsub("Mag", "Magnitude", names(data))
names(data)<-gsub("BodyBody", "Body", names(data))
names(data)
```

```
##  [1] "subject_id"
##  [2] "activity_id"
##  [3] "timeBodyAccelerometer-mean()-X"
##  [4] "timeBodyAccelerometer-mean()-Y"
##  [5] "timeBodyAccelerometer-mean()-Z"
##  [6] "timeGravityAccelerometer-mean()-X"
##  [7] "timeGravityAccelerometer-mean()-Y"
```

```
##  [8] "timeGravityAccelerometer-mean()-Z"
##  [9] "timeBodyAccelerometerJerk-mean()-X"
## [10] "timeBodyAccelerometerJerk-mean()-Y"
## [11] "timeBodyAccelerometerJerk-mean()-Z"
## [12] "timeBodyGyroscope-mean()-X"
## [13] "timeBodyGyroscope-mean()-Y"
## [14] "timeBodyGyroscope-mean()-Z"
## [15] "timeBodyGyroscopeJerk-mean()-X"
## [16] "timeBodyGyroscopeJerk-mean()-Y"
## [17] "timeBodyGyroscopeJerk-mean()-Z"
## [18] "timeBodyAccelerometerMagnitude-mean()"
## [19] "timeGravityAccelerometerMagnitude-mean()"
## [20] "timeBodyAccelerometerJerkMagnitude-mean()"
## [21] "timeBodyGyroscopeMagnitude-mean()"
## [22] "timeBodyGyroscopeJerkMagnitude-mean()"
## [23] "frequencyBodyAccelerometer-mean()-X"
## [24] "frequencyBodyAccelerometer-mean()-Y"
## [25] "frequencyBodyAccelerometer-mean()-Z"
## [26] "frequencyBodyAccelerometer-meanFreq()-X"
## [27] "frequencyBodyAccelerometer-meanFreq()-Y"
## [28] "frequencyBodyAccelerometer-meanFreq()-Z"
## [29] "frequencyBodyAccelerometerJerk-mean()-X"
## [30] "frequencyBodyAccelerometerJerk-mean()-Y"
## [31] "frequencyBodyAccelerometerJerk-mean()-Z"
## [32] "frequencyBodyAccelerometerJerk-meanFreq()-X"
## [33] "frequencyBodyAccelerometerJerk-meanFreq()-Y"
## [34] "frequencyBodyAccelerometerJerk-meanFreq()-Z"
## [35] "frequencyBodyGyroscope-mean()-X"
## [36] "frequencyBodyGyroscope-mean()-Y"
## [37] "frequencyBodyGyroscope-mean()-Z"
## [38] "frequencyBodyGyroscope-meanFreq()-X"
## [39] "frequencyBodyGyroscope-meanFreq()-Y"
## [40] "frequencyBodyGyroscope-meanFreq()-Z"
## [41] "frequencyBodyAccelerometerMagnitude-mean()"
## [42] "frequencyBodyAccelerometerMagnitude-meanFreq()"
## [43] "frequencyBodyAccelerometerJerkMagnitude-mean()"
## [44] "frequencyBodyAccelerometerJerkMagnitude-meanFreq()"
## [45] "frequencyBodyGyroscopeMagnitude-mean()"
## [46] "frequencyBodyGyroscopeMagnitude-meanFreq()"
## [47] "frequencyBodyGyroscopeJerkMagnitude-mean()"
## [48] "frequencyBodyGyroscopeJerkMagnitude-meanFreq()"
## [49] "timeBodyAccelerometer-std()-X"
## [50] "timeBodyAccelerometer-std()-Y"
## [51] "timeBodyAccelerometer-std()-Z"
## [52] "timeGravityAccelerometer-std()-X"
## [53] "timeGravityAccelerometer-std()-Y"
## [54] "timeGravityAccelerometer-std()-Z"
## [55] "timeBodyAccelerometerJerk-std()-X"
## [56] "timeBodyAccelerometerJerk-std()-Y"
## [57] "timeBodyAccelerometerJerk-std()-Z"
## [58] "timeBodyGyroscope-std()-X"
## [59] "timeBodyGyroscope-std()-Y"
## [60] "timeBodyGyroscope-std()-Z"
## [61] "timeBodyGyroscopeJerk-std()-X"
```

```
## [62] "timeBodyGyroscopeJerk-std()-Y"
## [63] "timeBodyGyroscopeJerk-std()-Z"
## [64] "timeBodyAccelerometerMagnitude-std()"
## [65] "timeGravityAccelerometerMagnitude-std()"
## [66] "timeBodyAccelerometerJerkMagnitude-std()"
## [67] "timeBodyGyroscopeMagnitude-std()"
## [68] "timeBodyGyroscopeJerkMagnitude-std()"
## [69] "frequencyBodyAccelerometer-std()-X"
## [70] "frequencyBodyAccelerometer-std()-Y"
## [71] "frequencyBodyAccelerometer-std()-Z"
## [72] "frequencyBodyAccelerometerJerk-std()-X"
## [73] "frequencyBodyAccelerometerJerk-std()-Y"
## [74] "frequencyBodyAccelerometerJerk-std()-Z"
## [75] "frequencyBodyGyroscope-std()-X"
## [76] "frequencyBodyGyroscope-std()-Y"
## [77] "frequencyBodyGyroscope-std()-Z"
## [78] "frequencyBodyAccelerometerMagnitude-std()"
## [79] "frequencyBodyAccelerometerJerkMagnitude-std()"
## [80] "frequencyBodyGyroscopeMagnitude-std()"
## [81] "frequencyBodyGyroscopeJerkMagnitude-std()"
## [82] "activity_type"
```

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.

```
tidy_data<-aggregate(.~subject_id+activity_id+activity_type,data,FUN='mean')
head(tidy_data)
```

```
##   subject_id activity_id activity_type timeBodyAccelerometer-mean()-X
## 1          1           6       LAYING                       0.2215982
## 2          2           6       LAYING                       0.2813734
## 3          3           6       LAYING                       0.2755169
## 4          4           6       LAYING                       0.2635592
## 5          5           6       LAYING                       0.2783343
## 6          6           6       LAYING                       0.2486565
##   timeBodyAccelerometer-mean()-Y timeBodyAccelerometer-mean()-Z
## 1                    -0.04051395                     -0.1132036
## 2                    -0.01815874                     -0.1072456
## 3                    -0.01895568                     -0.1013005
## 4                    -0.01500318                     -0.1106882
## 5                    -0.01830421                     -0.1079376
## 6                    -0.01025292                     -0.1331196
##   timeGravityAccelerometer-mean()-X timeGravityAccelerometer-mean()-Y
## 1                        -0.2488818                         0.7055498
## 2                        -0.5097542                         0.7525366
## 3                        -0.2417585                         0.8370321
## 4                        -0.4206647                         0.9151651
## 5                        -0.4834706                         0.9548903
## 6                        -0.4767099                         0.9565938
##   timeGravityAccelerometer-mean()-Z timeBodyAccelerometerJerk-mean()-X
## 1                         0.4458177                         0.08108653
## 2                         0.6468349                         0.08259725
## 3                         0.4887032                         0.07698111
```

```
## 4                         0.3415313                         0.09344942
## 5                         0.2636447                         0.08481648
## 6                         0.1758677                         0.09634820
##   timeBodyAccelerometerJerk-mean()-Y timeBodyAccelerometerJerk-mean()-Z
## 1                       0.003838204                        0.010834236
## 2                       0.012254788                       -0.001802649
## 3                       0.013804101                       -0.004356259
## 4                       0.006933132                       -0.006410543
## 5                       0.007474608                       -0.003040672
## 6                      -0.001145292                        0.003288173
##   timeBodyGyroscope-mean()-X timeBodyGyroscope-mean()-Y
## 1               -0.016553094               -0.06448612
## 2               -0.018476607               -0.11180082
## 3               -0.020817054               -0.07185072
## 4               -0.009231563               -0.09301282
## 5               -0.021893501               -0.07987096
## 6               -0.007960503               -0.10721832
##   timeBodyGyroscope-mean()-Z timeBodyGyroscopeJerk-mean()-X
## 1                  0.1486894                     -0.1072709
## 2                  0.1448828                     -0.1019741
## 3                  0.1379996                     -0.1000445
## 4                  0.1697204                     -0.1050199
## 5                  0.1598944                     -0.1021141
## 6                  0.1791021                     -0.1112673
##   timeBodyGyroscopeJerk-mean()-Y timeBodyGyroscopeJerk-mean()-Z
## 1                    -0.04151729                     -0.07405012
## 2                    -0.03585902                     -0.07017830
## 3                    -0.03897718                     -0.06873387
## 4                    -0.03812304                     -0.07121563
## 5                    -0.04044469                     -0.07083097
## 6                    -0.04241043                     -0.07177747
##   timeBodyAccelerometerMagnitude-mean()
## 1                            -0.8419292
## 2                            -0.9774355
## 3                            -0.9727913
## 4                            -0.9545576
## 5                            -0.9667779
## 6                            -0.9188789
##   timeGravityAccelerometerMagnitude-mean()
## 1                               -0.8419292
## 2                               -0.9774355
## 3                               -0.9727913
## 4                               -0.9545576
## 5                               -0.9667779
## 6                               -0.9188789
##   timeBodyAccelerometerJerkMagnitude-mean()
## 1                                -0.9543963
## 2                                -0.9877417
## 3                                -0.9794846
## 4                                -0.9700958
## 5                                -0.9801413
## 6                                -0.9547505
##   timeBodyGyroscopeMagnitude-mean() timeBodyGyroscopeJerkMagnitude-mean()
## 1                        -0.8747595                             -0.9634610
```

```
## 2                        -0.9500116                             -0.9917671
## 3                        -0.9515648                             -0.9867136
## 4                        -0.9302365                             -0.9850685
## 5                        -0.9469383                             -0.9864194
## 6                        -0.9089802                             -0.9556457
##   frequencyBodyAccelerometer-mean()-X frequencyBodyAccelerometer-mean()-Y
## 1                          -0.9390991                             -0.8670652
## 2                          -0.9767251                             -0.9798009
## 3                          -0.9806656                             -0.9611700
## 4                          -0.9588021                             -0.9388834
## 5                          -0.9687417                             -0.9654195
## 6                          -0.9391143                             -0.9237068
##   frequencyBodyAccelerometer-mean()-Z
## 1                          -0.8826669
## 2                          -0.9843810
## 3                          -0.9683321
## 4                          -0.9675043
## 5                          -0.9770077
## 6                          -0.9380449
##   frequencyBodyAccelerometer-meanFreq()-X
## 1                             -0.15879267
## 2                             -0.14648279
## 3                             -0.07395264
## 4                             -0.27419462
## 5                             -0.13563245
## 6                             -0.21972993
##   frequencyBodyAccelerometer-meanFreq()-Y
## 1                              0.09753484
## 2                              0.25728947
## 3                              0.23847075
## 4                              0.36623145
## 5                              0.46652823
## 6                              0.34841875
##   frequencyBodyAccelerometer-meanFreq()-Z
## 1                              0.08943766
## 2                              0.40253255
## 3                              0.21697167
## 4                              0.20132959
## 5                              0.13231087
## 6                              0.16145793
##   frequencyBodyAccelerometerJerk-mean()-X
## 1                              -0.9570739
## 2                              -0.9858136
## 3                              -0.9805132
## 4                              -0.9785425
## 5                              -0.9826897
## 6                              -0.9670724
##   frequencyBodyAccelerometerJerk-mean()-Y
## 1                              -0.9224626
## 2                              -0.9827683
## 3                              -0.9687521
## 4                              -0.9439700
## 5                              -0.9653286
## 6                              -0.9360434
```

```
##   frequencyBodyAccelerometerJerk-mean()-Z
## 1                              -0.9480609
## 2                              -0.9861971
## 3                              -0.9791223
## 4                              -0.9753833
## 5                              -0.9832503
## 6                              -0.9544258
##   frequencyBodyAccelerometerJerk-meanFreq()-X
## 1                                   0.13241909
## 2                                   0.15980833
## 3                                   0.17597855
## 4                                   0.18243648
## 5                                   0.23991516
## 6                                   0.01147319
##   frequencyBodyAccelerometerJerk-meanFreq()-Y
## 1                                   0.02451362
## 2                                   0.12120642
## 3                                  -0.01317750
## 4                                   0.09874288
## 5                                   0.19567734
## 6                                  -0.02220295
##   frequencyBodyAccelerometerJerk-meanFreq()-Z
## 1                                   0.02438795
## 2                                   0.19055822
## 3                                   0.04481969
## 4                                   0.07702112
## 5                                   0.09169388
## 6                                   0.07846840
##   frequencyBodyGyroscope-mean()-X frequencyBodyGyroscope-mean()-Y
## 1                      -0.8502492                      -0.9521915
## 2                      -0.9864311                      -0.9833216
## 3                      -0.9701673                      -0.9780997
## 4                      -0.9672037                      -0.9721878
## 5                      -0.9757975                      -0.9782496
## 6                      -0.9354398                      -0.9417715
##   frequencyBodyGyroscope-mean()-Z frequencyBodyGyroscope-meanFreq()-X
## 1                      -0.9093027                         -0.003546796
## 2                      -0.9626719                          0.102611319
## 3                      -0.9623420                         -0.082216645
## 4                      -0.9614793                         -0.066092182
## 5                      -0.9632029                         -0.022723586
## 6                      -0.9326366                          0.102549066
##   frequencyBodyGyroscope-meanFreq()-Y frequencyBodyGyroscope-meanFreq()-Z
## 1                        -0.09152913                          0.01045813
## 2                         0.04228067                          0.05529860
## 3                        -0.02668201                          0.14768646
## 4                        -0.52689000                          0.15288631
## 5                         0.06812485                          0.04136003
## 6                         0.02365678                          0.04452255
##   frequencyBodyAccelerometerMagnitude-mean()
## 1                                 -0.8617676
## 2                                 -0.9751102
## 3                                 -0.9655243
## 4                                 -0.9393897
```

```
## 5                                -0.9622350
## 6                                -0.9123517
##   frequencyBodyAccelerometerMagnitude-meanFreq()
## 1                                     0.08640856
## 2                                     0.26629821
## 3                                     0.23699013
## 4                                     0.24169790
## 5                                     0.29203209
## 6                                     0.14460509
##   frequencyBodyAccelerometerJerkMagnitude-mean()
## 1                                     -0.9333004
## 2                                     -0.9853741
## 3                                     -0.9759496
## 4                                     -0.9622871
## 5                                     -0.9773564
## 6                                     -0.9486555
##   frequencyBodyAccelerometerJerkMagnitude-meanFreq()
## 1                                          0.2663912
## 2                                          0.3417586
## 3                                          0.2386111
## 4                                          0.2740273
## 5                                          0.1970050
## 6                                          0.1825251
##   frequencyBodyGyroscopeMagnitude-mean()
## 1                             -0.8621902
## 2                             -0.9721130
## 3                             -0.9645867
## 4                             -0.9615567
## 5                             -0.9682571
## 6                             -0.9301536
##   frequencyBodyGyroscopeMagnitude-meanFreq()
## 1                                -0.13977501
## 2                                 0.01856447
## 3                                -0.02292961
## 4                                -0.25985197
## 5                                 0.10244177
## 6                                 0.11931752
##   frequencyBodyGyroscopeJerkMagnitude-mean()
## 1                                  -0.9423669
## 2                                  -0.9902487
## 3                                  -0.9842783
## 4                                  -0.9836091
## 5                                  -0.9846180
## 6                                  -0.9536960
##   frequencyBodyGyroscopeJerkMagnitude-meanFreq()
## 1                                     0.17648591
## 2                                     0.26480151
## 3                                     0.11069770
## 4                                     0.20294938
## 5                                     0.02473671
## 6                                     0.16376532
##   timeBodyAccelerometer-std()-X timeBodyAccelerometer-std()-Y
## 1                    -0.9280565                    -0.8368274
## 2                    -0.9740595                    -0.9802774
```

```
## 3                    -0.9827766                    -0.9620575
## 4                    -0.9541937                    -0.9417140
## 5                    -0.9659345                    -0.9692956
## 6                    -0.9340494                    -0.9246448
##   timeBodyAccelerometer-std()-Z timeGravityAccelerometer-std()-X
## 1                    -0.8260614                       -0.8968300
## 2                    -0.9842333                       -0.9590144
## 3                    -0.9636910                       -0.9825122
## 4                    -0.9626673                       -0.9212000
## 5                    -0.9685625                       -0.9456953
## 6                    -0.9252161                       -0.8877463
##   timeGravityAccelerometer-std()-Y timeGravityAccelerometer-std()-Z
## 1                       -0.9077200                       -0.8523663
## 2                       -0.9882119                       -0.9842304
## 3                       -0.9812027                       -0.9648075
## 4                       -0.9698166                       -0.9761766
## 5                       -0.9859641                       -0.9770766
## 6                       -0.9591620                       -0.9281307
##   timeBodyAccelerometerJerk-std()-X timeBodyAccelerometerJerk-std()-Y
## 1                        -0.9584821                        -0.9241493
## 2                        -0.9858722                        -0.9831725
## 3                        -0.9808793                        -0.9687107
## 4                        -0.9783028                        -0.9422095
## 5                        -0.9833079                        -0.9645604
## 6                        -0.9663411                        -0.9336745
##   timeBodyAccelerometerJerk-std()-Z timeBodyGyroscope-std()-X
## 1                        -0.9548551                -0.8735439
## 2                        -0.9884420                -0.9882752
## 3                        -0.9820932                -0.9745458
## 4                        -0.9785120                -0.9731024
## 5                        -0.9854194                -0.9794987
## 6                        -0.9596461                -0.9553782
##   timeBodyGyroscope-std()-Y timeBodyGyroscope-std()-Z
## 1                -0.9510904                -0.9082847
## 2                -0.9822916                -0.9603066
## 3                -0.9772727                -0.9635056
## 4                -0.9611093                -0.9620738
## 5                -0.9774274                -0.9605838
## 6                -0.9436349                -0.9391419
##   timeBodyGyroscopeJerk-std()-X timeBodyGyroscopeJerk-std()-Y
## 1                    -0.9186085                    -0.9679072
## 2                    -0.9932358                    -0.9895675
## 3                    -0.9803286                    -0.9867627
## 4                    -0.9751032                    -0.9868556
## 5                    -0.9834223                    -0.9837595
## 6                    -0.9396116                    -0.9586288
##   timeBodyGyroscopeJerk-std()-Z timeBodyAccelerometerMagnitude-std()
## 1                    -0.9577902                           -0.7951449
## 2                    -0.9880358                           -0.9728739
## 3                    -0.9833383                           -0.9642182
## 4                    -0.9839654                           -0.9312922
## 5                    -0.9896796                           -0.9586128
## 6                    -0.9595791                           -0.8973262
##   timeGravityAccelerometerMagnitude-std()
```

```
## 1                              -0.7951449
## 2                              -0.9728739
## 3                              -0.9642182
## 4                              -0.9312922
## 5                              -0.9586128
## 6                              -0.8973262
##   timeBodyAccelerometerJerkMagnitude-std()
## 1                               -0.9282456
## 2                               -0.9855181
## 3                               -0.9761213
## 4                               -0.9607864
## 5                               -0.9774771
## 6                               -0.9503419
##   timeBodyGyroscopeMagnitude-std() timeBodyGyroscopeJerkMagnitude-std()
## 1                       -0.8190102                             -0.9358410
## 2                       -0.9611641                             -0.9897181
## 3                       -0.9542751                             -0.9831393
## 4                       -0.9470318                             -0.9826982
## 5                       -0.9582879                             -0.9837714
## 6                       -0.9209145                             -0.9531570
##   frequencyBodyAccelerometer-std()-X frequencyBodyAccelerometer-std()-Y
## 1                          -0.9244374                          -0.8336256
## 2                          -0.9732465                          -0.9810251
## 3                          -0.9836911                          -0.9640946
## 4                          -0.9524649                          -0.9463810
## 5                          -0.9649539                          -0.9729092
## 6                          -0.9324629                          -0.9297112
##   frequencyBodyAccelerometer-std()-Z
## 1                          -0.8128916
## 2                          -0.9847922
## 3                          -0.9632791
## 4                          -0.9621545
## 5                          -0.9658822
## 6                          -0.9240047
##   frequencyBodyAccelerometerJerk-std()-X
## 1                             -0.9641607
## 2                             -0.9872503
## 3                             -0.9831226
## 4                             -0.9800793
## 5                             -0.9856253
## 6                             -0.9686192
##   frequencyBodyAccelerometerJerk-std()-Y
## 1                             -0.9322179
## 2                             -0.9849874
## 3                             -0.9710440
## 4                             -0.9443669
## 5                             -0.9662426
## 6                             -0.9357175
##   frequencyBodyAccelerometerJerk-std()-Z frequencyBodyGyroscope-std()-X
## 1                             -0.9605870                       -0.8822965
## 2                             -0.9893454                       -0.9888607
## 3                             -0.9837119                       -0.9759864
## 4                             -0.9802612                       -0.9750947
## 5                             -0.9861356                       -0.9807058
```

```
## 6                              -0.9635675                     -0.9621650
##   frequencyBodyGyroscope-std()-Y frequencyBodyGyroscope-std()-Z
## 1                      -0.9512320                     -0.9165825
## 2                      -0.9819106                     -0.9631742
## 3                      -0.9770325                     -0.9672569
## 4                      -0.9561825                     -0.9658075
## 5                      -0.9772578                     -0.9633057
## 6                      -0.9453651                     -0.9471368
##   frequencyBodyAccelerometerMagnitude-std()
## 1                                -0.7983009
## 2                                -0.9751214
## 3                                -0.9683502
## 4                                -0.9371880
## 5                                -0.9625254
## 6                                -0.9053740
##   frequencyBodyAccelerometerJerkMagnitude-std()
## 1                                     -0.9218040
## 2                                     -0.9845685
## 3                                     -0.9753054
## 4                                     -0.9580371
## 5                                     -0.9763819
## 6                                     -0.9515527
##   frequencyBodyGyroscopeMagnitude-std()
## 1                            -0.8243194
## 2                            -0.9610984
## 3                            -0.9554419
## 4                            -0.9471003
## 5                            -0.9592631
## 6                            -0.9286949
##   frequencyBodyGyroscopeJerkMagnitude-std()
## 1                                -0.9326607
## 2                                -0.9894927
## 3                                -0.9825682
## 4                                -0.9825436
## 5                                -0.9834345
## 6                                -0.9555047
```

```
write.csv(tidy_data,file="getting and cleanning data project-tidy data.csv")
```