```
> source("run_analysis.R")
> run_analysis()
2016-08-28 19:31:38 : Loading raw data files...
./UCI HAR Dataset/features.txt  --- GOOD
./UCI HAR Dataset/activity_labels.txt  --- GOOD
./UCI HAR Dataset/test/subject_test.txt  --- GOOD
./UCI HAR Dataset/test/X_test.txt  --- GOOD
./UCI HAR Dataset/test/y_test.txt  --- GOOD
./UCI HAR Dataset/train/subject_train.txt  --- GOOD
./UCI HAR Dataset/train/X_train.txt  --- GOOD
./UCI HAR Dataset/train/y_train.txt  --- GOOD
2016-08-28 19:31:38 : Loading ---: ./UCI HAR Dataset/features.txt
2016-08-28 19:31:38 : Loading ---: ./UCI HAR Dataset/activity_labels.txt
2016-08-28 19:31:38 : Loading ---: ./UCI HAR Dataset/test/subject_test.txt
2016-08-28 19:31:38 : Loading ---: ./UCI HAR Dataset/test/X_test.txt
2016-08-28 19:31:41 : Loading ---: ./UCI HAR Dataset/test/y_test.txt
2016-08-28 19:31:41 : Loading ---: ./UCI HAR Dataset/train/subject_train.txt
2016-08-28 19:31:41 : Loading ---: ./UCI HAR Dataset/train/X_train.txt
2016-08-28 19:31:50 : Loading ---: ./UCI HAR Dataset/train/y_train.txt
2016-08-28 19:31:50 : Validating raw data files...
[1] "Features - file dimensions validated - 561 rows by 2 columns"
[1] "Activity Labels - file dimensions validated - 6 rows by 2 columns"
[1] Test dataset has 2947 rows
[1] "Test Subject - file dimensions validated - 1 column"
[1] "Test Activity Label (y file) - file dimensions validated - 1 column"
[1] "Test Measures (X file) - file dimensions validated - 561 columns"
[1] Train dataset has 7352 rows
[1] "Train Subject - file dimensions validated - 1 column"
[1] "Train Activity Label (y file) - file dimensions validated - 1 column"
[1] "Train Measures (X file) - file dimensions validated - 561 columns"
2016-08-28 19:31:50 : Data content review and validation prior to merge...
[1] "Test Activity (y file) contents validate against Activity Labels - GOOD"
[1] "Train Activity (y file) contents validate against Activity Labels - GOOD"
raw_test_subject
  2   4   9  10  12  13  18  20  24
302 317 288 294 320 327 364 354 381
raw_train_subject
  1   3   5   6   7   8  11  14  15  16  17  19  21  22  23  25  26  27  28  29  30
347 341 302 325 308 281 316 323 328 366 368 360 408 321 372 409 392 376 382 344 383
[1] "Test Measures File (X_test.txt) does NOT have NAs present"
[1] "Train Measures File (X_train.txt) does NOT have NAs present"
[1] "Test Measures File (X_test.txt) is confirmed all numeric"
[1] "Train Measures File (X_train.txt) is confirmed all numeric"
2016-08-28 19:31:50 : Merging the Test and Train datasets into a single dataset...
[1] "Combined raw Test dataset has 2947 rows and 563 columns."
[1] "Combined raw Train dataset has 7352 rows and 563 columns."
[1] "Test Dataset - 4X4 Upper Corner - Shows added columns"
  SubjectID ActivityCode tBodyAcc-mean()-X tBodyAcc-mean()-Y
1         2            5           0.2572          -0.02329
2         2            5           0.2860          -0.01316
3         2            5           0.2755          -0.02605
4         2            5           0.2703          -0.03261
```

```
[1] "Train Dataset - 4X4 Upper Corner - Shows added columns"
  SubjectID ActivityCode tBodyAcc-mean()-X tBodyAcc-mean()-Y
1         1            5           0.2886          -0.02029
2         1            5           0.2784          -0.01641
3         1            5           0.2797          -0.01947
4         1            5           0.2792          -0.02620
[1] "Combined raw dataset has 10299 rows and 563 columns."
[1] "The train file was appended to the test file"
[1] "Here is the 4X4 upper corner of the new file, "
[1] "     it should match the upper corner of the Test file"
  SubjectID ActivityCode tBodyAcc-mean()-X tBodyAcc-mean()-Y
1         2            5           0.2572          -0.02329
2         2            5           0.2860          -0.01316
3         2            5           0.2755          -0.02605
4         2            5           0.2703          -0.03261
[1] "Here is the 4X4 left section of the new file, starting at row: 2948"
[1] "     it should match the upper corner of the Train file"
     SubjectID ActivityCode tBodyAcc-mean()-X tBodyAcc-mean()-Y
2948         1            5           0.2886          -0.02029
2949         1            5           0.2784          -0.01641
2950         1            5           0.2797          -0.01947
2951         1            5           0.2792          -0.02620
2016-08-28 19:31:51 : Extract the mean and standard deviation measures...
[1] "These are the columns being kept (Subject ID, Activity Code, and the measures)"
 [1] "SubjectID"                    "ActivityCode"                 "tBodyAcc-mean()-X"            "tBod
yAcc-mean()-Y"
 [5] "tBodyAcc-mean()-Z"            "tBodyAcc-std()-X"             "tBodyAcc-std()-Y"             "tBod
yAcc-std()-Z"
 [9] "tGravityAcc-mean()-X"         "tGravityAcc-mean()-Y"         "tGravityAcc-mean()-Z"         "tGra
vityAcc-std()-X"
[13] "tGravityAcc-std()-Y"          "tGravityAcc-std()-Z"          "tBodyAccJerk-mean()-X"        "tBod
yAccJerk-mean()-Y"
[17] "tBodyAccJerk-mean()-Z"        "tBodyAccJerk-std()-X"         "tBodyAccJerk-std()-Y"         "tBod
yAccJerk-std()-Z"
[21] "tBodyGyro-mean()-X"           "tBodyGyro-mean()-Y"           "tBodyGyro-mean()-Z"           "tBod
yGyro-std()-X"
[25] "tBodyGyro-std()-Y"            "tBodyGyro-std()-Z"            "tBodyGyroJerk-mean()-X"       "tBod
yGyroJerk-mean()-Y"
[29] "tBodyGyroJerk-mean()-Z"       "tBodyGyroJerk-std()-X"        "tBodyGyroJerk-std()-Y"        "tBod
yGyroJerk-std()-Z"
[33] "tBodyAccMag-mean()"           "tBodyAccMag-std()"            "tGravityAccMag-mean()"        "tGra
vityAccMag-std()"
[37] "tBodyAccJerkMag-mean()"       "tBodyAccJerkMag-std()"        "tBodyGyroMag-mean()"          "tBod
yGyroMag-std()"
[41] "tBodyGyroJerkMag-mean()"      "tBodyGyroJerkMag-std()"       "fBodyAcc-mean()-X"            "fBod
yAcc-mean()-Y"
[45] "fBodyAcc-mean()-Z"            "fBodyAcc-std()-X"             "fBodyAcc-std()-Y"             "fBod
yAcc-std()-Z"
[49] "fBodyAcc-meanFreq()-X"        "fBodyAcc-meanFreq()-Y"        "fBodyAcc-meanFreq()-Z"        "fBod
yAccJerk-mean()-X"
[53] "fBodyAccJerk-mean()-Y"        "fBodyAccJerk-mean()-Z"        "fBodyAccJerk-std()-X"         "fBod
yAccJerk-std()-Y"
```

```
[57] "fBodyAccJerk-std()-Z"                "fBodyAccJerk-meanFreq()-X"           "fBodyAccJerk-meanFreq()-Y"           "fBod
yAccJerk-meanFreq()-Z"
[61] "fBodyGyro-mean()-X"                  "fBodyGyro-mean()-Y"                  "fBodyGyro-mean()-Z"                  "fBod
yGyro-std()-X"
[65] "fBodyGyro-std()-Y"                   "fBodyGyro-std()-Z"                   "fBodyGyro-meanFreq()-X"              "fBod
yGyro-meanFreq()-Y"
[69] "fBodyGyro-meanFreq()-Z"              "fBodyAccMag-mean()"                  "fBodyAccMag-std()"                   "fBod
yAccMag-meanFreq()"
[73] "fBodyBodyAccJerkMag-mean()"          "fBodyBodyAccJerkMag-std()"           "fBodyBodyAccJerkMag-meanFreq()"      "fBod
yBodyGyroMag-mean()"
[77] "fBodyBodyGyroMag-std()"              "fBodyBodyGyroMag-meanFreq()"         "fBodyBodyGyroJerkMag-mean()"         "fBod
yBodyGyroJerkMag-std()"
[81] "fBodyBodyGyroJerkMag-meanFreq()"     "angle(tBodyAccMean,gravity)"         "angle(tBodyAccJerkMean),gravityMean)" "angl
e(tBodyGyroMean,gravityMean)"
[85] "angle(tBodyGyroJerkMean,gravityMean)" "angle(X,gravityMean)"               "angle(Y,gravityMean)"                "angl
e(Z,gravityMean)"
[1] "Trimmed Dataset - 4X6 Upper Corner - Shows the data for visual review"
  SubjectID ActivityCode tBodyAcc-mean()-X tBodyAcc-mean()-Y tBodyAcc-mean()-Z tBodyAcc-std()-X
1         2            5            0.2572          -0.02329          -0.01465          -0.9384
2         2            5            0.2860          -0.01316          -0.11908          -0.9754
3         2            5            0.2755          -0.02605          -0.11815          -0.9938
4         2            5            0.2703          -0.03261          -0.11752          -0.9947
2016-08-28 19:31:51 : Enriching the dataset with the Activity Names that match to codes...
[1] "Tidy Dataset - 4X6 Upper Corner - Shows the data for visual review"
  SubjectID ActivityCode ActivityName tBodyAcc-mean()-X tBodyAcc-mean()-Y tBodyAcc-mean()-Z
1         2            5     STANDING            0.2572          -0.02329          -0.01465
2         2            5     STANDING            0.2860          -0.01316          -0.11908
3         2            5     STANDING            0.2755          -0.02605          -0.11815
4         2            5     STANDING            0.2703          -0.03261          -0.11752
[1] "There are multpliple records per activity, per subject, as shown here."

    LAYING SITTING STANDING WALKING WALKING_DOWNSTAIRS WALKING_UPSTAIRS
1       50      47       53      95                 49               53
2       48      46       54      59                 47               48
3       62      52       61      58                 49               59
4       54      50       56      60                 45               52
5       52      44       56      56                 47               47
6       57      55       57      57                 48               51
7       52      48       53      57                 47               51
8       54      46       54      48                 38               41
9       50      50       45      52                 42               49
10      58      54       44      53                 38               47
11      57      53       47      59                 46               54
12      60      51       61      50                 46               52
13      62      49       57      57                 47               55
14      51      54       60      59                 45               54
15      72      59       53      54                 42               48
16      70      69       78      51                 47               51
17      71      64       78      61                 46               48
18      65      57       73      56                 55               58
19      83      73       73      52                 39               40
20      68      66       73      51                 45               51
```

```
  21     90      85       89      52                45                47
  22     72      62       63      46                36                42
  23     72      68       68      59                54                51
  24     72      68       69      58                55                59
  25     73      65       74      74                58                65
  26     76      78       74      59                50                55
  27     74      70       80      57                44                51
  28     80      72       79      54                46                51
  29     69      60       65      53                48                49
  30     70      62       59      65                62                65
2016-08-28 19:31:51 : Writing the Tidy dataset as a CSV file...
[1] "Tidy Dataset (CSV) - 4X6 Upper Corner - Shows the data for visual review"
  SubjectID ActivityCode ActivityName tBodyAcc.mean...X tBodyAcc.mean...Y tBodyAcc.mean...Z
1         2            5     STANDING           0.2572          -0.02329          -0.01465
2         2            5     STANDING           0.2860          -0.01316          -0.11908
3         2            5     STANDING           0.2755          -0.02605          -0.11815
4         2            5     STANDING           0.2703          -0.03261          -0.11752
[1] "Tidy CSV Dataset dimensions match the Tidy Data Frame dimenstions. -- GOOD"
2016-08-28 19:31:54 : QED - Script ended successfully.
>
```