The `run_analysis.R` script performs the data preparation and then followed by the 5 steps required as described in the course project's definition.

1. **Download and extract the dataset**
   - Dataset downloaded and extracted under the folder called `UCI HAR Dataset` inside the `Data` folder.

2. **Assign each data to variables**
   - `features` <- `features.txt` : 561 rows, 2 columns
     The features selected for this database come from the accelerometer and gyroscope 3-axial raw signals tAcc-XYZ and tGyro-XYZ.
   - `activities` <- `activity_labels.txt` : 6 rows, 2 columns
     List of activities performed when the corresponding measurements were taken and its codes (labels)
   - `subject_test` <- `test/subject_test.txt` : 2947 rows, 1 column
     contains test data of 9/30 volunteer test subjects being observed
   - `x_test` <- `test/X_test.txt` : 2947 rows, 561 columns
     contains recorded features test data
   - `y_test` <- `test/y_test.txt` : 2947 rows, 1 columns
     contains test data of activities'code labels
   - `subject_train` <- `test/subject_train.txt` : 7352 rows, 1 column
     contains train data of 21/30 volunteer subjects being observed
   - `x_train` <- `test/X_train.txt` : 7352 rows, 561 columns
     contains recorded features train data
   - `y_train` <- `test/y_train.txt` : 7352 rows, 1 columns
     contains train data of activities'code labels

3. **Merges the training and the test sets to create one data set**
   - `X` (10299 rows, 561 columns) is created by merging `x_train` and `x_test` using **rbind()** function
   - `Y` (10299 rows, 1 column) is created by merging `y_train` and `y_test` using **rbind()** function
   - `Subject` (10299 rows, 1 column) is created by merging `subject_train` and `subject_test` using **rbind()** function
   - `Merged_Data` (10299 rows, 563 column) is created by merging `Subject`, `Y` and `X` using **cbind()** function

4. **Extracts only the measurements on the mean and standard deviation for each measurement**
   - `TidyData` (10299 rows, 88 columns) is created by subsetting `Merged_Data`, selecting only columns: `subject`, `code` and the measurements on the `mean` and *standard deviation* (`std`) for each measurement

5. **Uses descriptive activity names to name the activities in the data set**
   - The `activity` variable of the `activities` data frame is merge to the `TidyData` data frame, taking `code` as the key variable.

6. **Appropriately labels the data set with descriptive variable names**
    - All `Acc` in column's name replaced by `Accelerometer`
    - All `Gyro` in column's name replaced by `Gyroscope`
    - All `BodyBody` in column's name replaced by `Body`
    - All `Mag` in column's name replaced by `Magnitude`
    - All start with character `f` in column's name replaced by `Frequency`
    - All start with character `t` in column's name replaced by `Time`

7. **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**
    - `TidyData` (180 rows, 88 columns) is created by sumarizing `TidyData` taking the means of each variable for each activity and each subject, after groupped by subject and activity.
    - Export `TidyData` into `TidyData.txt` file.