Summary:

The results to question4 for this assignment is the “complete\_table” data.frame and it is made of the following cols:

* Subject
* readable\_actions
* And 60 different Measurements.

The “complete\_table” data.frame is derived from the values in the ref1: (https://d396qusza40orc.cloudfront.net/getdata%2Fprojectfiles%2FUCI%20HAR%20Dataset.zip)

while the description that follows is taken from the “features\_info.txt” of the same ref.

In the ref1, some experiments have been done where a subject performs an activity and the resulting values from a 3 axes accelerometer and 3 axis gyro are reported under measurements.

The measurements are taken using a constant sampling frequency of 50Hz and then the signal is further refined to remove noise. Finally the signal is analysed to define two parts:

Body and Gravity.

In the “complete\_table” data.frame these measurements for body acceleration are under:

* Body\_Acc\_<Mean,Str>\_<X,Y,Z>
* Gravity\_Acc<Mean,Str>\_<X,Y,Z>

while measurement from the body’s gyro attached to the body of the subject are:

* BodyGyro\_Mean\_<X,Y,Z>,
* BodyGyro\_Std\_<X,Y,Z>

Also the magnitude of these three-dimensional signals were calculated and the value reported under:

* BodyAccMag\_<Mean, Std>
* GravityAccMag\_<Mean, Std>
* BodyGyroMag\_<Mean, Std>

For the magnitude, no X,Y,Z components are defined, off course.

Other measurements have been derived from the above after manipulations. They are:

* BodyAccJerk<Mean, Std>\_<XYZ>
* BodyGyroJerk<Mean, Std>\_<X,Y,Z>

With the magnitude reported under:

* BodyAccJerkMag,
* BodyGyroMag,
* BodyGyroJerkMag

The last series of measurements are from evaluating the above measurements in the frequency domain, applying the FFT transformation for the signal in the time domain.

The result measurements can be found under:

* fBodyAcc\_<Mean,Std>\_<X,Y,Z>,
* fBodyAccJerk\_<Mean, Std>\_<X,Y,Z>,
* fBodyGyro\_<Mean, Std>\_<X,Y,Z>,
* fBodyAccJerkMag<Mean, Std>,
* fBodyGyroMag,
* fBodyGyroJerkMag.

Naming convention:

The measurement names are taken, slightly modified, from the “features.txt” of Ref1. Examples:

Example of variable names in features.txt from the web side becames :

* tBodyAcc-mean()-X becames : Body\_Acc\_Mean\_X
* tBodyAcc-mean()-Y Body\_Acc\_Mean\_Y
* tBodyAcc-mean()-Z Body\_Acc\_Mean\_Z

while:

* fBodyAcc-mean()-X fBodyAcc\_Mean\_X
* fBodyAcc-mean()-Y fBodyAcc\_Mean\_Y
* fBodyAcc-mean()-Z fBodyAcc\_Mean\_Z

Description of “complete\_table” as answer to Question4 of this assignment.:

The info is collected in a data.table 10299 obs of 62 vars

All meas. Have been mormalised, i.e. the Max value = 1. And the Min = -1. And they are of class int.

Since the values have been normalised, there is no unit associated to them.

Description of all fields:

1. Subject: Identify a person that has been used for the test.

Class: Int

|  |
| --- |
| Min. : 1.00 |
| 1st Qu.: 9.00 |
| Median:17.00 |
| Mean :16.15 |
| 3rd Qu.:24.00 |
| Max. :30.00 |

1. readable\_actions: Identify the activity during which the measurements have been taken. class: Factor w/ 6 levels "WALKING"," WALKING\_DOWNSTAIRS”, “SITTING”, “WALKING\_UPSTAIRS”, “STANDING”, “LAYING”
2. Vars: a description of all vers can be found in “summary\_complete\_table” I opened it with notepad++ to have a decent layout of the info.