STUDY DESIGN

A raw data set was downloaded from
https://d396qusza40orc.cloudfront.net/getdata%2Fprojectfiles%2FUCI%20HAR%20Dataset.zip

The raw data set consists of positional measurements taken for 30 subjects while they were performing one of six activities

The subjects are identified by unique number (1 to 30)

The activities they engaged in consisted of (WALKING, WALKING_UPSTAIRS, WALKING_DOWNSTAIRS, SITTING, STANDING, LAYING)

The positional measurements consist of sensor signals (accelerometer and gyroscope) that were recorded by a smart phone the subjects carried during these activities

The values of the positional measurements denote the following kinds of information:
    Triaxial acceleration from the accelerometer (total acceleration) and the estimated body
    acceleration.
    Triaxial Angular velocity from the gyroscope.

The raw data set consist of 561 measurement values for each subject for each activity. From this raw data set, only the 86 values indicating averages or standard deviations for measurements were extracted into the tidy data set

The raw data set separated subject identifiers and the measurement data into separate files.
The tidy data set merges these into a single file.

The raw data set normalized data by using identifier codes (1 through 6) for the activities (WALKING, WALKING_UPSTAIRS, WALKING_DOWNSTAIRS, SITTING, STANDING, LAYING). The tidy data set replaces the lookup codes with the more "friendly" labels for these activities.

The tidy data set is produced by a script that summarizes the data by grouping it by subject and activity and then calculating the mean for each of the 86 measurements for each subject and activity.

CODE BOOK:

Column Number	Column Name	Data Type	Possible Values
1	subject	integer	1 to 30
2	activity	character	WALKING
			WALKING_UPSTAIRS
			WALKING_DOWNSTAIRS
			SITTING
			STANDING
			LAYING

3	tBodyAcc-mean()-X	number	-1 to 1
4	tBodyAcc-mean()-Y	number	-1 to 1
5	tBodyAcc-mean()-Z	number	-1 to 1
6	tBodyAcc-std()-X	number	-1 to 1
7	tBodyAcc-std()-Y	number	-1 to 1
8	tBodyAcc-std()-Z	number	-1 to 1
9	tGravityAcc-mean()-X	number	-1 to 1
10	tGravityAcc-mean()-Y	number	-1 to 1
11	tGravityAcc-mean()-Z	number	-1 to 1
12	tGravityAcc-std()-X	number	-1 to 1
13	tGravityAcc-std()-Y	number	-1 to 1
14	tGravityAcc-std()-Z	number	-1 to 1
15	tBodyAccJerk-mean()-X	number	-1 to 1
16	tBodyAccJerk-mean()-Y	number	-1 to 1
17	tBodyAccJerk-mean()-Z	number	-1 to 1
18	tBodyAccJerk-std()-X	number	-1 to 1
19	tBodyAccJerk-std()-Y	number	-1 to 1
20	tBodyAccJerk-std()-Z	number	-1 to 1
21	tBodyGyro-mean()-X	number	-1 to 1
22	tBodyGyro-mean()-Y	number	-1 to 1
23	tBodyGyro-mean()-Z	number	-1 to 1
24	tBodyGyro-std()-X	number	-1 to 1
25	tBodyGyro-std()-Y	number	-1 to 1
26	tBodyGyro-std()-Z	number	-1 to 1
27	tBodyGyroJerk-mean()-X	number	-1 to 1
28	tBodyGyroJerk-mean()-Y	number	-1 to 1
29	tBodyGyroJerk-mean()-Z	number	-1 to 1
30	tBodyGyroJerk-std()-X	number	-1 to 1
31	tBodyGyroJerk-std()-Y	number	-1 to 1
32	tBodyGyroJerk-std()-Z	number	-1 to 1
33	tBodyAccMag-mean()	number	-1 to 1
34	tBodyAccMag-std()	number	-1 to 1
35	tGravityAccMag-mean()	number	-1 to 1
36	tGravityAccMag-std()	number	-1 to 1
37	tBodyAccJerkMag-mean()	number	-1 to 1
38	tBodyAccJerkMag-std()	number	-1 to 1
39	tBodyGyroMag-mean()	number	-1 to 1
40	tBodyGyroMag-std()	number	-1 to 1
41	tBodyGyroJerkMag-mean()	number	-1 to 1
42	tBodyGyroJerkMag-std()	number	-1 to 1
43	fBodyAcc-mean()-X	number	-1 to 1
44	fBodyAcc-mean()-Y	number	-1 to 1
45	fBodyAcc-mean()-Z	number	-1 to 1

46	fBodyAcc-std()-X	number	-1 to 1
47	fBodyAcc-std()-Y	number	-1 to 1
48	fBodyAcc-std()-Z	number	-1 to 1
49	fBodyAcc-meanFreq()-X	number	-1 to 1
50	fBodyAcc-meanFreq()-Y	number	-1 to 1
51	fBodyAcc-meanFreq()-Z	number	-1 to 1
52	fBodyAccJerk-mean()-X	number	-1 to 1
53	fBodyAccJerk-mean()-Y	number	-1 to 1
54	fBodyAccJerk-mean()-Z	number	-1 to 1
55	fBodyAccJerk-std()-X	number	-1 to 1
56	fBodyAccJerk-std()-Y	number	-1 to 1
57	fBodyAccJerk-std()-Z	number	-1 to 1
58	fBodyAccJerk-meanFreq()-X	number	-1 to 1
59	fBodyAccJerk-meanFreq()-Y	number	-1 to 1
60	fBodyAccJerk-meanFreq()-Z	number	-1 to 1
61	fBodyGyro-mean()-X	number	-1 to 1
62	fBodyGyro-mean()-Y	number	-1 to 1
63	fBodyGyro-mean()-Z	number	-1 to 1
64	fBodyGyro-std()-X	number	-1 to 1
65	fBodyGyro-std()-Y	number	-1 to 1
66	fBodyGyro-std()-Z	number	-1 to 1
67	fBodyGyro-meanFreq()-X	number	-1 to 1
68	fBodyGyro-meanFreq()-Y	number	-1 to 1
69	fBodyGyro-meanFreq()-Z	number	-1 to 1
70	fBodyAccMag-mean()	number	-1 to 1
71	fBodyAccMag-std()	number	-1 to 1
72	fBodyAccMag-meanFreq()	number	-1 to 1
73	fBodyBodyAccJerkMag-mean()	number	-1 to 1
74	fBodyBodyAccJerkMag-std()	number	-1 to 1
75	fBodyBodyAccJerkMag-meanFreq()	number	-1 to 1
76	fBodyBodyGyroMag-mean()	number	-1 to 1
77	fBodyBodyGyroMag-std()	number	-1 to 1
78	fBodyBodyGyroMag-meanFreq()	number	-1 to 1
79	fBodyBodyGyroJerkMag-mean()	number	-1 to 1
80	fBodyBodyGyroJerkMag-std()	number	-1 to 1
81	fBodyBodyGyroJerkMag-meanFreq()	number	-1 to 1
82	angle(tBodyAccMean,gravity)	number	-1 to 1
83	angle(tBodyAccJerkMean),gravityMean)	number	-1 to 1
84	angle(tBodyGyroMean,gravityMean)	number	-1 to 1
85	angle(tBodyGyroJerkMean,gravityMean)	number	-1 to 1
86	angle(X,gravityMean)	number	-1 to 1
87	angle(Y,gravityMean)	number	-1 to 1
88	angle(Z,gravityMean)	number	-1 to 1