Data Dictionary

Tidy Data Set 1 [stored in variable var_TidyDataSet1] and Tidy Data Set 2 [stored in variable var_TidyDataSet2]. The only difference between the two data set is that the second tidy dataset is a condensed form of the first. The second tidy data set is computed by taking a mean of all the observations (#3 onwards below) across a combination of subject (#1 below) and activity (#2 below). Code book below describes both the data sets. There are 88 variables in total, first two referring to the master combination of subject and activity. All other variables form the observational data set storing the feature observations.

Transformations

Subject

- Data Set 1 - None
- Data Set 2 - Used for aggregation purpose to compute mean of feature observation set

Activity

- Data Set 1 - Changed the numeric data from the raw data set to text based and more descriptive data
- Data Set 2 - Changed the numeric data from the raw data set to text based and more descriptive data, used for aggregation purpose to compute mean of feature observation set

Observation Feature Set

- Data Set 1 - Column Names have been changed from the raw data set to more descriptive names
- Data Set 2 - Column Names have been changed from the raw data set to more descriptive names, mean of the observation data was computed for every subject and activity combination

#	*Column Name*	*Description (Feature Data Set starts from #3)*	*Data Type*	*Typical Actual Data Elements*
1	Subject	Integer value denoting one of the subjects	int	1,2,3…
2	Activity	Text value denoting one of the activities	factor w/ 6 levels	LAYING, SITTING...
3	tBodyAcc-mean()-X	Mean of body acceleration X Axis	num	[-1,1]
4	tBodyAcc-mean()-Y	Mean of body acceleration Y Axis	num	[-1,1]
5	tBodyAcc-mean()-Z	Mean of body acceleration Z Axis	num	[-1,1]
6	tBodyAcc-std()-X	Standard Deviation of body acceleration X Axis	num	[-1,1]
7	tBodyAcc-std()-Y	Standard Deviation of body acceleration Y Axis	num	[-1,1]

8	tBodyAcc-std()-Z	Standard Deviation of body acceleration Z Axis	num	[-1,1]
9	tGravityAcc-mean()-X	Mean of gravitational acceleration X Axis	num	[-1,1]
10	tGravityAcc-mean()-Y	Mean of gravitational acceleration Y Axis	num	[-1,1]
11	tGravityAcc-mean()-Z	Mean of gravitational acceleration Z Axis	num	[-1,1]
12	tGravityAcc-std()-X	Standard Deviation of gravitational acceleration X Axis	num	[-1,1]
13	tGravityAcc-std()-Y	Standard Deviation of gravitational acceleration Y Axis	num	[-1,1]
14	tGravityAcc-std()-Z	Standard Deviation of gravitational acceleration Z Axis	num	[-1,1]
15	tBodyAccJerk-mean()-X	Mean of body linear acceleration Jerk Signal X Axis	num	[-1,1]
16	tBodyAccJerk-mean()-Y	Mean of body linear acceleration Jerk Signal Y Axis	num	[-1,1]
17	tBodyAccJerk-mean()-Z	Mean of body linear acceleration Jerk Signal Z Axis	num	[-1,1]
18	tBodyAccJerk-std()-X	Standard Deviation of body linear acceleration Jerk Signal X Axis	num	[-1,1]
19	tBodyAccJerk-std()-Y	Standard Deviation of body linear acceleration Jerk Signal Y Axis	num	[-1,1]
20	tBodyAccJerk-std()-Z	Standard Deviation of body linear acceleration Jerk Signal Z Axis	num	[-1,1]
21	tBodyGyro-mean()-X	Mean of body gyroscope signal X Axis	num	[-1,1]
22	tBodyGyro-mean()-Y	Mean of body gyroscope signal Y Axis	num	[-1,1]
23	tBodyGyro-mean()-Z	Mean of body gyroscope signal Z Axis	num	[-1,1]
24	tBodyGyro-std()-X	Standard Deviation of body gyroscope signal X Axis	num	[-1,1]
25	tBodyGyro-std()-Y	Standard Deviation of body gyroscope signal Y Axis	num	[-1,1]
26	tBodyGyro-std()-Z	Standard Deviation of body gyroscope signal Z Axis	num	[-1,1]
27	tBodyGyroJerk-mean()-X	Mean of gyroscopic Jerk Signal X Axis	num	[-1,1]
28	tBodyGyroJerk-mean()-Y	Mean of gyroscopic Jerk Signal Y Axis	num	[-1,1]
29	tBodyGyroJerk-mean()-Z	Mean of gyroscopic Jerk Signal Z Axis	num	[-1,1]
30	tBodyGyroJerk-std()-X	Standard Deviation of gyroscopic Jerk Signal X Axis	num	[-1,1]
31	tBodyGyroJerk-std()-Y	Standard Deviation of gyroscopic Jerk Signal Y Axis	num	[-1,1]
32	tBodyGyroJerk-std()-Z	Standard Deviation of gyroscopic Jerk Signal Z Axis	num	[-1,1]
33	tBodyAccMag-mean()	Mean of Euclidean norm of body acceleration	num	[-1,1]
34	tBodyAccMag-std()	Standard Deviation of Euclidean norm of body acceleration	num	[-1,1]
35	tGravityAccMag-mean()	Mean of Euclidean norm of gravitational acceleration	num	[-1,1]
36	tGravityAccMag-std()	Standard Deviation of Euclidean norm of gravitational acceleration	num	[-1,1]
37	tBodyAccJerkMag-mean()	Mean of Euclidean norm of body linear acceleration Jerk Signal	num	[-1,1]
38	tBodyAccJerkMag-std()	Standard Deviation of Euclidean norm of body linear acceleration Jerk Signal	num	[-1,1]

39	tBodyGyroMag-mean()	Mean of Euclidean norm of body gyroscope signal	num	[-1,1]
40	tBodyGyroMag-std()	Standard Deviation of Euclidean norm of body gyroscope signal	num	[-1,1]
41	tBodyGyroJerkMag-mean()	Mean of Euclidean norm of gyroscopic Jerk Signal	num	[-1,1]
42	tBodyGyroJerkMag-std()	Standard Deviation of Euclidean norm of gyroscopic Jerk Signal	num	[-1,1]
43	fBodyAcc-mean()-X	Fast Fourier Transform of Mean of body acceleration X Axis	num	[-1,1]
44	fBodyAcc-mean()-Y	Fast Fourier Transform of Mean of body acceleration Y Axis	num	[-1,1]
45	fBodyAcc-mean()-Z	Fast Fourier Transform of Mean of body acceleration Z Axis	num	[-1,1]
46	fBodyAcc-std()-X	Fast Fourier Transform of Standard Deviation of body acceleration X Axis	num	[-1,1]
47	fBodyAcc-std()-Y	Fast Fourier Transform of Standard Deviation of body acceleration Y Axis	num	[-1,1]
48	fBodyAcc-std()-Z	Fast Fourier Transform of Standard Deviation of body acceleration Z Axis	num	[-1,1]
49	fBodyAcc-meanFreq()-X	Fast Fourier Transform of Mean Frequency of body acceleration X Axis	num	[-1,1]
50	fBodyAcc-meanFreq()-Y	Fast Fourier Transform of Mean Frequency of body acceleration Y Axis	num	[-1,1]
51	fBodyAcc-meanFreq()-Z	Fast Fourier Transform of Mean Frequency of body acceleration Z Axis	num	[-1,1]
52	fBodyAccJerk-mean()-X	Fast Fourier Transform of Mean of body linear acceleration Jerk Signal X Axis	num	[-1,1]
53	fBodyAccJerk-mean()-Y	Fast Fourier Transform of Mean of body linear acceleration Jerk Signal Y Axis	num	[-1,1]
54	fBodyAccJerk-mean()-Z	Fast Fourier Transform of Mean of body linear acceleration Jerk Signal Z Axis	num	[-1,1]
55	fBodyAccJerk-std()-X	Fast Fourier Transform of Standard Deviation of body linear acceleration Jerk Signal X Axis	num	[-1,1]
56	fBodyAccJerk-std()-Y	Fast Fourier Transform of Standard Deviation of body linear acceleration Jerk Signal Y Axis	num	[-1,1]
57	fBodyAccJerk-std()-Z	Fast Fourier Transform of Standard Deviation of body linear acceleration Jerk Signal Z Axis	num	[-1,1]
58	fBodyAccJerk-meanFreq()-X	Fast Fourier Transform of Mean Frequency of body linear acceleration Jerk Signal X Axis	num	[-1,1]
59	fBodyAccJerk-meanFreq()-Y	Fast Fourier Transform of Mean Frequency of body linear acceleration Jerk Signal Y Axis	num	[-1,1]
60	fBodyAccJerk-meanFreq()-Z	Fast Fourier Transform of Mean Frequency of body linear acceleration Jerk Signal Z Axis	num	[-1,1]
61	fBodyGyro-mean()-X	Fast Fourier Transform of Mean of body gyroscope signal X Axis	num	[-1,1]
62	fBodyGyro-mean()-Y	Fast Fourier Transform of Mean of body gyroscope signal Y Axis	num	[-1,1]
63	fBodyGyro-mean()-Z	Fast Fourier Transform of Mean of body gyroscope signal Z Axis	num	[-1,1]
64	fBodyGyro-std()-X	Fast Fourier Transform of Standard Deviation of body gyroscope signal X Axis	num	[-1,1]
65	fBodyGyro-std()-Y	Fast Fourier Transform of Standard Deviation of body gyroscope signal Y Axis	num	[-1,1]
66	fBodyGyro-std()-Z	Fast Fourier Transform of Standard Deviation of body gyroscope signal Z Axis	num	[-1,1]
67	fBodyGyro-meanFreq()-X	Fast Fourier Transform of Mean Frequency of body gyroscope signal X Axis	num	[-1,1]
68	fBodyGyro-meanFreq()-Y	Fast Fourier Transform of Mean Frequency of body gyroscope signal Y Axis	num	[-1,1]
69	fBodyGyro-meanFreq()-Z	Fast Fourier Transform of Mean Frequency of body gyroscope signal Z Axis	num	[-1,1]

70	fBodyAccMag-mean()	Fast Fourier Transform of Mean of Euclidean norm of body acceleration	num	[-1,1]
71	fBodyAccMag-std()	Fast Fourier Transform of Standard Deviation of Euclidean norm of body acceleration	num	[-1,1]
72	fBodyAccMag-meanFreq()	Fast Fourier Transform of Mean Frequency of Euclidean norm of body acceleration	num	[-1,1]
73	fBodyBodyAccJerkMag-mean()	Fast Fourier Transform of Mean of Euclidean norm of body linear acceleration Jerk Signal	num	[-1,1]
74	fBodyBodyAccJerkMag-std()	Fast Fourier Transform of Standard Deviation of Euclidean norm of body linear acceleration Jerk Signal	num	[-1,1]
75	fBodyBodyAccJerkMag-meanFreq()	Fast Fourier Transform of Mean Frequency of Euclidean norm of body linear acceleration Jerk Signal	num	[-1,1]
76	fBodyBodyGyroMag-mean()	Fast Fourier Transform of Mean of Euclidean norm of body gyroscope signal	num	[-1,1]
77	fBodyBodyGyroMag-std()	Fast Fourier Transform of Standard Deviation of Euclidean norm of body gyroscope signal	num	[-1,1]
78	fBodyBodyGyroMag-meanFreq()	Fast Fourier Transform of Mean Frequency of Euclidean norm of body gyroscope signal	num	[-1,1]
79	fBodyBodyGyroJerkMag-mean()	Fast Fourier Transform of Mean of Euclidean norm of gyroscopic Jerk Signal	num	[-1,1]
80	fBodyBodyGyroJerkMag-std()	Fast Fourier Transform of Standard Deviation of Euclidean norm of gyroscopic Jerk Signal	num	[-1,1]
81	fBodyBodyGyroJerkMag-meanFreq()	Fast Fourier Transform of Mean Frequency of Euclidean norm of gyroscopic Jerk Signal	num	[-1,1]
82	angle(tBodyAccMean,gravity)	Angle between average signal pertinent to BodyAccMean and gravity	num	[-1,1]
83	angle(tBodyAccJerkMean),gravityMean)	Angle between average signal pertinent to BodyAccJerk and gravitymean	num	[-1,1]
84	angle(tBodyGyroMean,gravityMean)	Angle between average signal pertinent to BodyGyro and gravity	num	[-1,1]
85	angle(tBodyGyroJerkMean,gravityMean)	Angle between average signal pertinent to BodyGyroJerk and gravity	num	[-1,1]
86	angle(X,gravityMean)	Angle between X axis and average of gravity signal	num	[-1,1]
87	angle(Y,gravityMean)	Angle between Y axis and average of gravity signal	num	[-1,1]
88	angle(Z,gravityMean)	Angle between Z axis and average of gravity signal	num	[-1,1]