Course 3 Final Project Codebook

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The function run_analysis() produces a tidy dataset in the file "tidy_dataset.csv". That file contains the following variables:

Order and Grouping Variables

The dataset is grouped and ordered by Subject, then Activity. The activity variable is a factor - it's ordering is specified by Levels.

Index	Variable	Class	Description
1	Subject	Num	Participant's identifying number. Each participant will have 6 entries, one for each activity
2	Activity	Factor	The actvities that were identified through accelerometer data. Levels = WALKING, WALKING_UPSTAIRS, WALKING_DOWNSTAIRS, SITTING, STANDING, LAYING

Mean of Motion Data Variables

The assignment called for a tidy dataset of the mean of certain variables. Only variables with measurements of

- mean

- std

are to be part of the output. All variables are numeric. Their indexes and names in the "tidy_dataset.csv" file are as follows:

Variable Index	Variable Name
1	Subject
2	Activity
3	tBodyAcc-mean()-X
4	tBodyAcc-mean()-Y
5	tBodyAcc-mean()-Z
6	tBodyAcc-std()-X
7	tBodyAcc-std()-Y
8	tBodyAcc-std()-Z
9	tGravityAcc-mean()-X
10	tGravityAcc-mean()-Y

Variable Index	Variable Name
11	tGravityAcc-mean()-Z
12	tGravityAcc-std()-X
13	tGravityAcc-std()-Y
14	tGravityAcc-std()-Z
15	tBodyAccJerk-mean()-X
16	tBodyAccJerk-mean()-Y
17	tBodyAccJerk-mean()-Z
18	tBodyAccJerk-std()-X
19	tBodyAccJerk-std()-Y
20	tBodyAccJerk-std()-Z
21	tBodyGyro-mean()-X
22	tBodyGyro-mean()-Y
23	tBodyGyro-mean()-Z
24	tBodyGyro-std()-X
25	tBodyGyro-std()-Y
26	tBodyGyro-std()-Z
27	tBodyGyroJerk-mean()-X
28	tBodyGyroJerk-mean()-Y
29	tBodyGyroJerk-mean()-Z
30	tBodyGyroJerk-std()-X
31	tBodyGyroJerk-std()-Y
32	tBodyGyroJerk-std()-Z
33	tBodyAccMag-mean()
34	tBodyAccMag-std()
35	tGravityAccMag-mean()
36	tGravityAccMag-std()
37	tBodyAccJerkMag-mean()
38	tBodyAccJerkMag-std()
39	tBodyGyroMag-mean()
40	tBodyGyroMag-std()
41	tBodyGyroJerkMag-mean()
42	tBodyGyroJerkMag-std()
43	fBodyAcc-mean()-X
44	fBodyAcc-mean()-Y
45	fBodyAcc-mean()-Z
46	fBodyAcc-std()-X
47	fBodyAcc-std()-Y
48	fBodyAcc-std()-Z
49	fBodyAcc-meanFreq()-X
50	fBodyAcc-meanFreq()-Y
51	fBodyAcc-meanFreq()-Z
52	fBodyAccJerk-mean()-X
53	fBodyAccJerk-mean()-Y
54	fBodyAccJerk-mean()-Z
55	fBodyAccJerk-std()-X
56	fBodyAccJerk-std()-Y
57	fBodyAccJerk-std()-Z
58	fBodyAccJerk-meanFreq()-X
59	fBodyAccJerk-meanFreq()-Y
60	fBodyAccJerk-meanFreq()-Z
61	fBodyGyro-mean()-X
62	fBodyGyro-mean()-Y

Variable Index	Variable Name
63	fBodyGyro-mean()-Z
64	fBodyGyro-std()-X
65	fBodyGyro-std()-Y
66	fBodyGyro-std()-Z
67	fBodyGyro-meanFreq()-X
68	fBodyGyro-meanFreq()-Y
69	fBodyGyro-meanFreq()-Z
70	fBodyAccMag-mean()
71	fBodyAccMag-std()
72	fBodyAccMag-meanFreq()
73	fBodyBodyAccJerkMag-mean()
74	fBodyBodyAccJerkMag-std()
75	fBodyBodyAccJerkMag-meanFreq()
76	fBodyBodyGyroMag-mean()
77	fBodyBodyGyroMag-std()
78	fBodyBodyGyroMag-meanFreq()
79	fBodyBodyGyroJerkMag-mean()
80	fBodyBodyGyroJerkMag-std()
81	fBodyBodyGyroJerkMag-meanFreq()
82	angle(tBodyAccMean,gravity)
83	angle(tBodyAccJerkMean),gravityMean)
84	angle(tBodyGyroMean,gravityMean)
85	angle(tBodyGyroJerkMean,gravityMean)
86	angle(X,gravityMean)
87	angle(Y,gravityMean)
88	angle(Z,gravityMean)

Small Sample of tidy_dataset structure

These are small examples of the structure of tidy_dataset. It is ordered by Activity and then by Subject. Since Activity is a factor, it is ordered by the file Activity_Labels.txt in the original data. This sample only displays the means of first 3 of 86 mean motion variables.

Subject	Activity	tBodyAcc-mean()-X	tBodyAcc-mean()-Y	tBodyAcc-mean()-Z
25	WALKING	0.2789928	-0.0186478	-0.1087376
26	WALKING	0.2792644	-0.0154260	-0.1089270
27	WALKING	0.2768495	-0.0166479	-0.1128223
28	WALKING	0.2812282	-0.0156760	-0.1037147
29	WALKING	0.2719999	-0.0162916	-0.1066324
30	WALKING	0.2764068	-0.0175880	-0.0986247
1	WALKING_UPSTAIRS	0.2554617	-0.0239531	-0.0973020
2	WALKING_UPSTAIRS	0.2471648	-0.0214121	-0.1525139
3	WALKING_UPSTAIRS	0.2608199	-0.0324109	-0.1100649
4	WALKING_UPSTAIRS	0.2708767	-0.0319804	-0.1142195
5	WALKING_UPSTAIRS	0.2684595	-0.0325270	-0.1074715

Subject	Activity	tBodyAcc-mean()-X	tBodyAcc-mean()-Y	tBodyAcc-mean()-Z
25	STANDING	0.2780137	-0.0163570	-0.1073530
26	STANDING	0.2811270	-0.0166608	-0.1102378
27	STANDING	0.2795669	-0.0165932	-0.1078358
28	STANDING	0.2777951	-0.0172635	-0.1065794
29	STANDING	0.2779651	-0.0172606	-0.1086591
30	STANDING	0.2771127	-0.0170164	-0.1087562
1	LAYING	0.2215982	-0.0405140	-0.1132036
2	LAYING	0.2813734	-0.0181587	-0.1072456
3	LAYING	0.2755169	-0.0189557	-0.1013005
4	LAYING	0.2635592	-0.0150032	-0.1106882
5	LAYING	0.2783343	-0.0183042	-0.1079376