Codebook

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Study Design

The data represents data collected from the accelerometers from the Samsung Galaxy S smartphone. A full description is available at the site where the data was obtained: link

The data is obtained from: link

A script `run_analysis_R` loads the data into R and creates a tidy data set (described in the "Code book" section of this document), assuming that the contents of the above zip file has been unzipped in the current working directory.

This tidy data set is stored as a text file in the repository `UCI_HAR_tidy.txt`

If loaded into R using `read.table()` it should result in a data frame of 180 observations of 68 variables.

The script also creates the complete data set in a R object called `data`

Code book

1. Subject

- Class integer
- Each row identifies the subject who performed the activity for each window sample.
- Its range is from 1 to 30.

2. Activity_Label

- Class Factor

    1. WALKING
    2. WALKING_UPSTAIRS
    3. WALKING_DOWNSTAIRS
    4. SITTING
    5. STANDING
    6. LAYING

3. tBodyAcc.mean_value.X

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated body acceleration (from accelerometer)
- time domain
- X axis

4. tBodyAcc.mean_value.Y

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated body acceleration (from accelerometer)
- time domain
- Y axis

5. tBodyAcc.mean_value.Z

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated body acceleration (from accelerometer)
- time domain
- Z axis

6. tGravityAcc.mean_value.X

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated gravity acceleration (from accelerometer)
- time domain
- X axis

7. tGravityAcc.mean_value.Y

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated gravity acceleration (from accelerometer)
- time domain
- Y axis

8. tGravityAcc.mean_value.Z

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated gravity acceleration (from accelerometer)
- time domain
- Z axis

9. tBodyAccJerk.mean_value.X

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated body acceleration jerk
- time domain
- X axis

10. tBodyAccJerk.mean_value.Y

- Class numeric

- Mean of measurements for each subject and activity label combination
- Mean estimated body acceleration jerk
- time domain
- Y axis

11. tBodyAccJerk.mean_value.Z

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated body acceleration jerk
- time domain
- Z axis

12. tBodyGyro.mean_value.X

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated body angular velocity (from gyroscope)
- time domain
- X axis

13. tBodyGyro.mean_value.Y

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated body angular velocity (from gyroscope)
- time domain
- Y axis

14. tBodyGyro.mean_value.Z

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated body angular velocity (from gyroscope)
- time domain
- Z axis

15. tBodyGyroJerk.mean_value.X

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated body angular velocity jerk (from gyroscope)
- time domain
- X axis

16. tBodyGyroJerk.mean_value.Y

- Class numeric
- Mean of measurements for each subject and activity label combination

- Mean estimated body angular velocity jerk (from gyroscope)
- time domain
- Y axis

17. tBodyGyroJerk.mean_value.Z

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated body angular velocity jerk (from gyroscope)
- time domain
- Z axis

18. tBodyAccMag.mean_value

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated body acceleration magnitude
- time domain

19. tGravityAccMag.mean_value

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated gravity acceleration magnitude
- time domain

20. tBodyAccJerkMag.mean_value

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated body acceleration jerk magnitude
- time domain

21. tBodyGyroMag.mean_value

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated gyroscope (angular velocity) magnitude
- time domain

22. tBodyGyroJerkMag.mean_value

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated gyroscope (angular velocity) jerk magnitude
- time domain

23. fBodyAcc.mean_value.X

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated body acceleration (from accelerometer)
- frequency domain
- X axis

24. fBodyAcc.mean_value.Y

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated body acceleration (from accelerometer)
- frequency domain
- Y axis

25. fBodyAcc.mean_value.Z

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated body acceleration (from accelerometer)
- frequency domain
- Z axis

26. fBodyAccJerk.mean_value.X

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated body acceleration jerk
- frequency domain
- X axis

27. fBodyAccJerk.mean_value.Y

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated body acceleration jerk
- frequency domain
- Y axis

28. fBodyAccJerk.mean_value.Z

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated body acceleration jerk
- frequency domain
- Z axis

29. fBodyGyro.mean_value.X

- Class numeric

- Mean of measurements for each subject and activity label combination
- Mean estimated body angular velocity (from gyroscope)
- frequency domain
- X axis

30. fBodyGyro.mean_value.Y

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated body angular velocity (from gyroscope)
- frequency domain
- Y axis

31. fBodyGyro.mean_value.Z

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated body angular velocity (from gyroscope)
- frequency domain
- Z axis

32. fBodyAccMag.mean_value

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated body acceleration magnitude
- frequency domain

33. fBodyAccJerkMag.mean_value

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated body acceleration jerk magnitude
- frequency domain

34. fBodyGyroMag.mean_value

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated gyroscope (angular velocity) magnitude
- frequency domain

35. fBodyGyroJerkMag.mean_value

- Class numeric
- Mean of measurements for each subject and activity label combination
- Mean estimated gyroscope (angular velocity) jerk magnitude
- frequency domain

36. tBodyAcc.std_value.X

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated body acceleration (from accelerometer)
- time domain
- X axis

37. tBodyAcc.std_value.Y

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated body acceleration (from accelerometer)
- time domain
- Y axis

38. tBodyAcc.std_value.Z

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated body acceleration (from accelerometer)
- time domain
- Z axis

39. tGravityAcc.std_value.X

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated gravity acceleration (from accelerometer)
- time domain
- X axis

40. tGravityAcc.std_value.Y

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated gravity acceleration (from accelerometer)
- time domain
- Y axis

41. tGravityAcc.std_value.Z

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated gravity acceleration (from accelerometer)
- time domain
- Z axis

42. tBodyAccJerk.std_value.X

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated body acceleration jerk
- time domain
- X axis

43. tBodyAccJerk.std_value.Y

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated body acceleration jerk
- time domain
- Y axis

44. tBodyAccJerk.std_value.Z

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated body acceleration jerk
- time domain
- Z axis

45. tBodyGyro.std_value.X

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated body angular velocity (from gyroscope)
- time domain
- X axis

46. tBodyGyro.std_value.Y

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated body angular velocity (from gyroscope)
- time domain
- Y axis

47. tBodyGyro.std_value.Z

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated body angular velocity (from gyroscope)
- time domain
- Z axis

48. tBodyGyroJerk.std_value.X

- Class numeric

- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated body angular velocity jerk (from gyroscope)
- time domain
- X axis

49. tBodyGyroJerk.std_value.Y

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated body angular velocity jerk (from gyroscope)
- time domain
- Y axis

50. tBodyGyroJerk.std_value.Z

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated body angular velocity jerk (from gyroscope)
- time domain
- Z axis

51. tBodyAccMag.std_value

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated body acceleration magnitude
- time domain

52. tGravityAccMag.std_value

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated gravity acceleration magnitude
- time domain

53. tBodyAccJerkMag.std_value

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated body acceleration jerk magnitude
- time domain

54. tBodyGyroMag.std_value

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated gyroscope (angular velocity) magnitude
- time domain

55. tBodyGyroJerkMag.std_value

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated gyroscope (angular velocity) jerk magnitude
- time domain

56. fBodyAcc.std_value.X

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated body acceleration (from accelerometer)
- frequency domain
- X axis

57. fBodyAcc.std_value.Y

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated body acceleration (from accelerometer)
- frequency domain
- Y axis

58. fBodyAcc.std_value.Z

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated body acceleration (from accelerometer)
- frequency domain
- Z axis

59. fBodyAccJerk.std_value.X

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated body acceleration jerk
- frequency domain
- X axis

60. fBodyAccJerk.std_value.Y

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated body acceleration jerk
- frequency domain
- Y axis

61. fBodyAccJerk.std_value.Z

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated body acceleration jerk
- frequency domain
- Z axis

62. fBodyGyro.std_value.X

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated body angular velocity (from gyroscope)
- frequency domain
- X axis

63. fBodyGyro.std_value.Y

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated body angular velocity (from gyroscope)
- frequency domain
- Y axis

64. fBodyGyro.std_value.Z

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated body angular velocity (from gyroscope)
- frequency domain
- Z axis

65. fBodyAccMag.std_value

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated body acceleration magnitude
- frequency domain

66. fBodyAccJerkMag.std_value

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated body acceleration jerk magnitude
- frequency domain

67. fBodyGyroMag.std_value

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated gyroscope (angular velocity) magnitude

- frequency domain

68. fBodyGyroJerkMag.std_value

- Class numeric
- Mean of measurements for each subject and activity label combination
- Standard deviation of estimated gyroscope (angular velocity) jerk magnitude
- frequency domain