CODEBOOK

ME

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## Codebook describing variables

# Data Set Information

30 volunteers aged 19-48 are part of this experiment.WALKING, WALKING\_UPSTAIRS, WALKING\_DOWNSTAIRS, SITTING, STANDING, LAYING were done wearing a smartphone (Samsung Galaxy S II) on the waist. Using its embedded accelerometer and gyroscope, we captured 3-axial linear acceleration and 3-axial angular velocity at a constant rate of 50Hz. The experiments have been video-recorded to label the data manually. The obtained dataset has been randomly partitioned into two sets, where 70% of the volunteers was selected for generating the training data and 30% the test data.

The sensor signals (accelerometer and gyroscope) were pre-processed by applying noise filters and then sampled in fixed-width sliding windows of 2.56 sec and 50% overlap (128 readings/window). The sensor acceleration signal, which has gravitational and body motion components, was separated using a Butterworth low-pass filter into body acceleration and gravity. The gravitational force is assumed to have only low frequency components, therefore a filter with 0.3 Hz cutoff frequency was used. From each window, a vector of features was obtained by calculating variables from the time and frequency domain.

Attribute Information For each record in the dataset it is provided:

1.Triaxial acceleration from the accelerometer (total acceleration) and the estimated body acceleration. 2.Triaxial Angular velocity from the gyroscope. 3.A 561-feature vector with time and frequency domain variables. 4.Its activity label. 5.An identifier of the subject who carried out the experiment.