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| **Variable** | **Type** | **Description** |
| "Activity" | character | The features selected for this database come from the accelerometer and gyroscope 3-axial raw signals tAcc-XYZ and tGyro-XYZ. These time domain signals (prefix 't' to denote time) were captured at a constant rate of 50 Hz. Then they were filtered using a median filter and a 3rd order low pass Butterworth filter with a corner frequency of 20 Hz to remove noise. Similarly, the acceleration signal was then separated into body and gravity acceleration signals (tBodyAcc-XYZ and tGravityAcc-XYZ) using another low pass Butterworth filter with a corner frequency of 0.3 Hz.  Subsequently, the body linear acceleration and angular velocity were derived in time to obtain Jerk signals (tBodyAccJerk-XYZ and tBodyGyroJerk-XYZ). Also the magnitude of these three-dimensional signals were calculated using the Euclidean norm (tBodyAccMag, tGravityAccMag, tBodyAccJerkMag, tBodyGyroMag, tBodyGyroJerkMag).  Finally a Fast Fourier Transform (FFT) was applied to some of these signals producing fBodyAcc-XYZ, fBodyAccJerk-XYZ, fBodyGyro-XYZ, fBodyAccJerkMag, fBodyGyroMag, fBodyGyroJerkMag. (Note the 'f' to indicate frequency domain signals).  These signals were used to estimate variables of the feature vector for each pattern:  '-XYZ' is used to denote 3-axial signals in the X, Y and Z directions.  tBodyAcc-XYZ  tGravityAcc-XYZ  tBodyAccJerk-XYZ  tBodyGyro-XYZ  tBodyGyroJerk-XYZ  tBodyAccMag  tGravityAccMag  tBodyAccJerkMag  tBodyGyroMag  tBodyGyroJerkMag  fBodyAcc-XYZ  fBodyAccJerk-XYZ  fBodyGyro-XYZ  fBodyAccMag |
| "Subject" | integer |
| "tBodyAcc-mean()-X" | double |
| "tBodyAcc-mean()-Y" | double |
| "tBodyAcc-mean()-Z" | double |
| "tGravityAcc-mean()-X" | double |
| "tGravityAcc-mean()-Y" | double |
| "tGravityAcc-mean()-Z" | double |
| "tBodyAccJerk-mean()-X" | double |
| "tBodyAccJerk-mean()-Y" | double |
| "tBodyAccJerk-mean()-Z" | double |
| "tBodyGyro-mean()-X" | double |
| "tBodyGyro-mean()-Y" | double |
| "tBodyGyro-mean()-Z" | double |
| "tBodyAccMag-mean()" | double |
| "tGravityAccMag-mean()" | double |
| "tBodyAccJerkMag-mean()" | double |
| "tBodyGyroMag-mean()" | double |
| "tBodyGyroJerkMag-mean()" | double |
| "fBodyAcc-mean()-X" | double |
| "fBodyAcc-mean()-Y" | double |
| "fBodyAcc-mean()-Z" | double |
| "fBodyAcc-meanFreq()-X" | double |
| "fBodyAcc-meanFreq()-Y" | double |
| "fBodyAcc-meanFreq()-Z" | double |
| "fBodyAccJerk-mean()-X" | double |
| "fBodyAccJerk-mean()-Y" | double |
| "fBodyAccJerk-mean()-Z" | double |
| "fBodyAccJerk-meanFreq()-X" | double |
| "fBodyAccJerk-meanFreq()-Y" | double |
| "fBodyAccJerk-meanFreq()-Z" | double |
| "fBodyGyro-mean()-X" | double |
| "fBodyGyro-mean()-Y" | double |
| "fBodyGyro-mean()-Z" | double |
| "fBodyGyro-meanFreq()-X" | double |
| "fBodyGyro-meanFreq()-Y" | double |
| "fBodyGyro-meanFreq()-Z" | double |
| "fBodyAccMag-mean()" | double |
| "fBodyAccMag-meanFreq()" | double |
| "fBodyBodyAccJerkMag-mean()" | double |
| "fBodyBodyAccJerkMag-meanFreq()" | double |
| "fBodyBodyGyroMag-mean()" | double |
| "fBodyBodyGyroMag-meanFreq()" | double |
| "fBodyBodyGyroJerkMag-mean()" | double |
| "fBodyBodyGyroJerkMag-meanFreq()" | double | fBodyAccJerkMag  fBodyGyroMag  fBodyGyroJerkMag  The set of variables that were estimated from these signals are:  mean(): Mean value  std(): Standard deviation  Additional vectors obtained by averaging the signals in a signal window sample. These are used on the angle() variable:  gravityMean  tBodyAccMean  tBodyAccJerkMean  tBodyGyroMean  tBodyGyroJerkMean |
| "angle(tBodyAccMean,gravity)" | double |
| "angle(tBodyAccJerkMean),gravityMean)" | double |
| "angle(tBodyGyroMean,gravityMean)" | double |
| "angle(tBodyGyroJerkMean,gravityMean)" | double |
| "angle(X,gravityMean)" | double |
| "angle(Y,gravityMean)" | double |
| "angle(Z,gravityMean)" | double |
| "tBodyAcc-std()-X" | double |
| "tBodyAcc-std()-Y" | double |
| "tBodyAcc-std()-Z" | double |
| "tGravityAcc-std()-X" | double |
| "tGravityAcc-std()-Y" | double |
| "tGravityAcc-std()-Z" | double |
| "tBodyAccJerk-std()-X" | double |
| "tBodyAccJerk-std()-Y" | double |
| "tBodyAccJerk-std()-Z" | double |
| "tBodyGyro-std()-X" | double |
| "tBodyGyro-std()-Y" | double |
| "tBodyGyro-std()-Z" | double |
| "tBodyAccMag-std()" | double |
| "tGravityAccMag-std()" | double |
| "tBodyAccJerkMag-std()" | double |
| "tBodyGyroMag-std()" | double |
| "tBodyGyroJerkMag-std()" | double |
| "fBodyAcc-std()-X" | double |
| "fBodyAcc-std()-Y" | double |
| "fBodyAcc-std()-Z" | double |
| "fBodyAccJerk-std()-X" | double |
| "fBodyAccJerk-std()-Y" | double |
| "fBodyAccJerk-std()-Z" | double |
| "fBodyGyro-std()-X" | double |
| "fBodyGyro-std()-Y" | double |
| "fBodyGyro-std()-Z" | double |
| "fBodyAccMag-std()" | double |
| "fBodyBodyAccJerkMag-std()" | double |
| "fBodyBodyGyroMag-std()" | double |
| "fBodyBodyGyroJerkMag-std()" | double |