1. **Description of the data.**
   1. **Dataset Information**

The experiments have been carried out with a group of 30 volunteers within an age bracket of 19-48 years. Each person performed six activities (WALKING, WALKING\_UPSTAIRS, WALKING\_DOWNSTAIRS, SITTING, STANDING, LAYING) wearing a smartphone (Samsung Galaxy S II) on the waist. Using its embedded accelerometer and gyroscope, 3-axial linear acceleration and 3-axial angular velocity at a constant rate of 50Hz were captured. 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 and30%thetestdata.   
  
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.

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| **Data Set Characteristics:** | Multivariate, Time-Series | **Number of Instances:** | 10299 | **Area:** | Computer |
| **Attribute Characteristics:** | N/A | **Number of Attributes:** | 561 | **Date Donated** | 2012-12-10 |
| **Associated Tasks:** | Classification, Clustering | **Missing Values?** | N/A | **Number of Web Hits:** | 801276 |