Student Project Bike Sharing:

Please make an explorative data analysis and build a model for the hourly utilization "cnt" of the given data set:

Report the mean absolute deviations.

Data Description:

Abstract: This dataset contains the hourly and daily count of rental bikes between years 2011 and 2012 in Capital bike share system with the corresponding weather and seasonal information.

Data Set Information:

Bike sharing systems are new generation of traditional bike rentals where whole process from membership, rental and return back has become automatic. Through these systems, user is able to easily rent a bike from a particular position and return back at another position. Currently, there are about over 500 bike-sharing programs around the world which is composed of over 500 thousands bicycles. Today, there exists great interest in these systems due to their important role in traffic, environmental, social, public, eco and health issues.

Apart from interesting real world applications of bike sharing systems, the characteristics of data being generated by these systems make them attractive for the research. Opposed to other transport services such as bus or subway, the duration of travel, departure and arrival position is explicitly recorded in these systems. This feature turns bike sharing system into a virtual sensor network that can be used for sensing mobility in the city. Hence, it is expected that most of important events in the city could be detected via monitoring these data.

Attribute Information:

Both hour.csv and day.csv have the following fields, except hr which is not available in day.csv

❖ instant: record index.

❖ dteday : date.

❖ season : season (1:springer, 2:summer, 3:fall, 4:winter)

❖ yr : year (0: 2011, 1:2012).

❖ mnth : month (1 to 12).

❖ hr : hour (0 to 23).

❖ holiday : weather day is holiday or not.

❖ weekday : day of the week.

❖ workingday : if day is neither weekend nor holiday is 1, otherwise is 0.

❖ weathersit :
  - 1: Clear, Few clouds, Partly cloudy, Partly cloudy
  - 2: Mist + Cloudy, Mist + Broken clouds, Mist + Few clouds, Mist
  - 3: Light Snow, Light Rain + Thunderstorm + Scattered clouds, Light Rain + Scatteredclouds.
  - 4: Heavy Rain + Ice Pallets + Thunderstorm + Mist, Snow + Fog

❖ temp : Normalized temperature in Celsius.

  o The values are derived via (t-t_min)/(t_max-t_min), t_min=-8, t_max=+39 (only in hourly scale)

❖ atemp: Normalized feeling temperature in Celsius. The values are derived via (t-t_min)/(t_max-t_min), t_min=-16, t_max=+50 (only in hourly scale)

❖ hum: Normalized humidity. The values are divided to 100 (max)

❖ windspeed: Normalized wind speed. The values are divided to 67 (max)

❖ casual: count of casual users.

❖ registered: count of registered users.

❖ cnt: count of total rental bikes including both casual and registered