Assignment 2

Due: Wednesday, September 25, 2019

In order to answer problems in Assignment 2, you need to use the ‘Carseat’ data, which is part of the ‘ISLR’ library. The goal of this assignment is to predict ‘Sales (child car seat sales)’ in 400 locations based on a number of predictors.

1. Which of the predictors are quantitative, and which are qualitative?

Hint: str() or summary ()

1. Using Quantitative variables, describe the distributions in terms of shape, symmetry, and potential outlier. Do you think it is required to transform some variable(s)? If so, transform the variable(s) and justify your answer (Since the Advertising includes 1 missing value, please delete the Advertising variable when you compute correlation).

Hint: gpair(), cor()

1. Fit four **separate** simple regression models to predict ‘Sales’ using ‘Income’, ‘Population’ and ‘Price’ and US. Then, **write out the estimated model in equation form**.

Hint: lm ()

1. Provide an interpretation of coefficients in each separate model. Be careful-some of the variables in the model are qualitative!
2. For which of the predictors can you reject the null hypothesis ?
3. Using the models Question 3, obtain 95% confidence intervals for the coefficient(s). Using the confidence intervals, test the null hypothesis .

Hint: confint()

1. Check the assumptions of the models using plot(). Is there evidence of outliers in the models? If so, please inspect the outliers.

Hint: plot()