DATA211 Homework 11

1) The **marketing_data** on d2l recorded the impact of the advertising media, Facebook, on sales. Data are the advertising budget in thousands of dollars along with the sales. Use the data to answer the following:
   a) Generate an appropriate graph using ggplot to show the relationship between the Facebook advertisement amount (x) and sales amount (y); Color the points red; Fit a linear model to the points without showing the confidence interval band; Color the line blue.
   b) Based on a), generate an interactive plot.

2) The **Estriol and Birthweight** data on d2l recorded the mothers' estriol levels at pregnancy and the newborns' birthweight.
   a) Use the data to generate an appropriate graph to show the five-number summary for **birth weight.**
   b) Based on a), create an interactive plot.
   c) Based on the plot, is there any outlier? If so, what is the birth weight of that outlier? Use a comment to write it in R Markdown.

3)
   a) Create the following table as a data frame named as StudentGrades

ID	HomeworkGrades	MidtermGrades	FinalGrades
A	99	82	80
B	90	89	83
C	87	75	70
D	95	91	92

   b) Create an interactive table of a)

4)
   a) Create a character vector, a, with these store names: Walmart, Walmart-marketplace, Walmart-online, Target, Target-marketplace, Amazon, Amazon.com, AmazonFresh;
   b) Create a for-loop with the index goes from 1 to the end of the vector a; if the first five letters of the store names are the same (think about using substr()), then those are the same store. We want to count the number of unique stores in the vector, a. You may want to create two for-loops, with one to scrape the first five letters of each element of a and the other loop to compare whether the scraped phrases are the same. At the end, you should get **3** stores.

5) Use the text on https://www.nytimes.com/2023/03/16/business/media/tiktok-buyer-biden.html to generate a word cloud, following along with what we did in class for text mining (create VectorSource, Corpus, remove all numbers, punctuations, white space, English common words, etc.), generate a word cloud.