Statistical Inference - Exercise 2

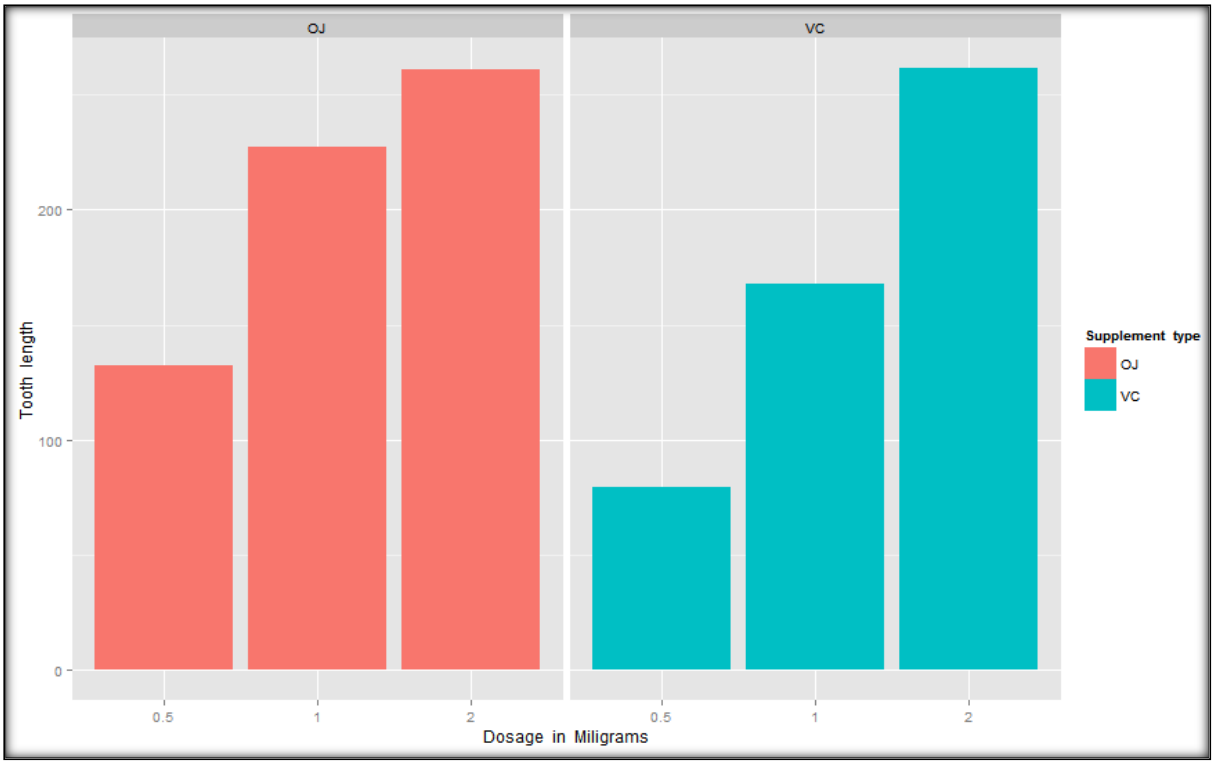
Now in the second portion of the class, we're going to analyze the ToothGrowth data in the R datasets package.

1. Load the ToothGrowth data and perform some basic exploratory data analyses
2. Provide a basic summary of the data.
3. Use confidence intervals and/or hypothesis tests to compare tooth growth by supp and dose. (Only use the techniques from class, even if there are other approaches worth considering)
4. State your conclusions and the assumptions needed for your conclusions.

Solution Part 1: Load the Tooth Growth data and perform some basic exploratory data analyses

```
library(datasets)
library(ggplot2)

ggplot(data=ToothGrowth, aes(x=as.factor(dose), y=len, fill=supp)) +
geom_bar(stat="identity",) +
facet_grid(. ~ supp) +
xlab("Dosage in Miligrams") +
ylab("Tooth length") +
guides(fill=guide_legend(title="Supplement type"))
```



The above plot shows that there is a clear co-relation between the nutrients and the tooth length

Solution Part 2: Basic Summary of Data

From the data provided in "ToothGrowth", we can say when we execute the command

```
table(ToothGrowth$supp, ToothGrowth$dose)
```

There are:

- 60 subjects of study
- 30 are given OJ & 30 are given VC doses
- Among the 30 subjects (mentioned above), 10 each are given 0.5, 1 & 2 mg dosages

Solution Part 3: Could not complete ☹
Solution Part 4: Could not get started ☹