ToothGrowth Data Exploratory Analysis

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1 Synopsis

We are now moving to the part 2 of the task. Below we will exlore the `ToothGrowth` dataset from R `datasets` package. The headers below will correspond to the tasks. The data comes from the study The Effect of Vitamin C on Tooth Growth in Guinea Pigs". The data is described as: *The response is the length of odontoblasts (teeth) in each of 10 guinea pigs at each of three dose levels of Vitamin C (0.5, 1, and 2 mg) with each of two delivery methods (orange juice or ascorbic acid).*

2 Load the ToothGrowth data and perform some basic exploratory data analyses

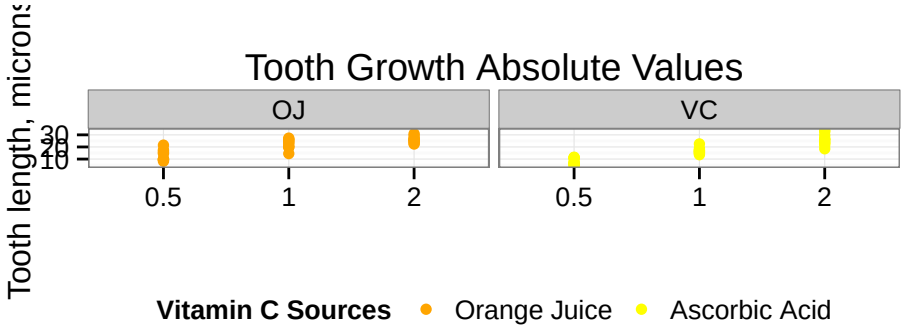
```
library(datasets)
library(gridExtra)
library(ggplot2)
library(dplyr)
data("ToothGrowth")
```

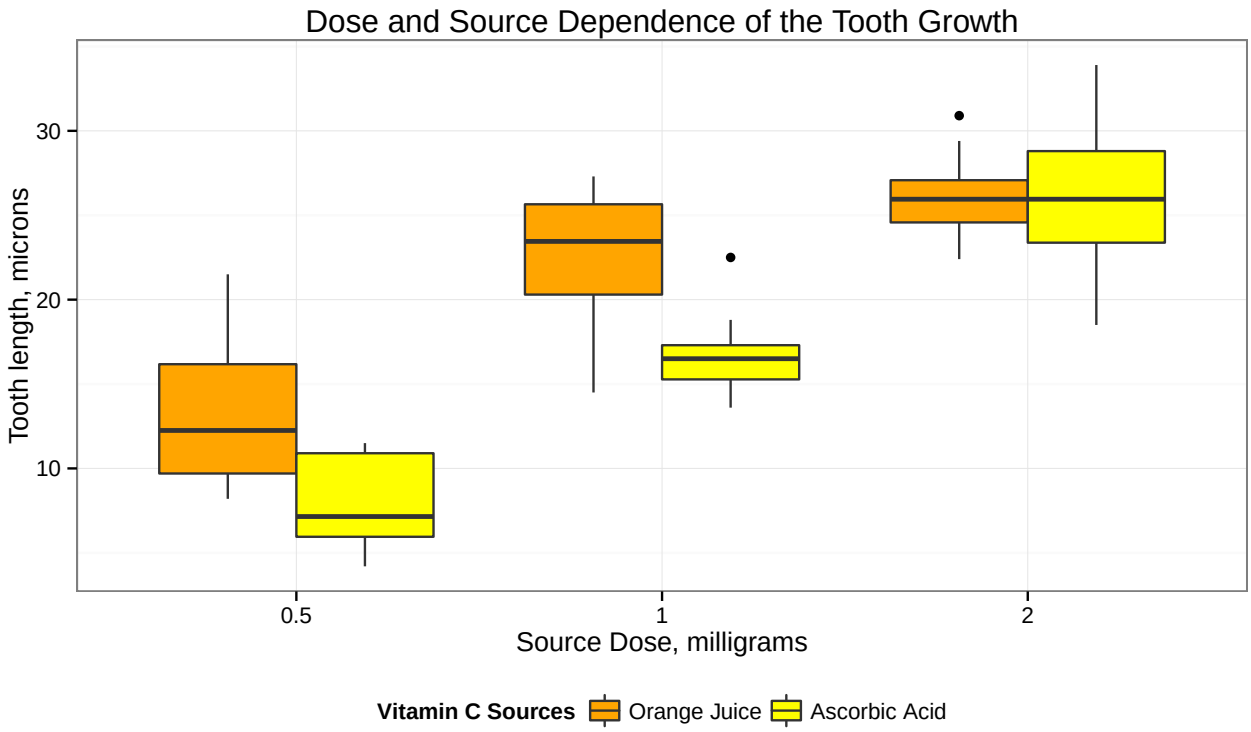
3 Provide a basic summary of the data

Well, the data is presented as a `data.frame` of 60 samples in 3 rows: len, supp, dose;

- **len** is the tooth length (microns)
- **supp** is the supplement type (VC or OJ)
- **dose** is the dose (milligrams)

```
##       len        supp     dose
##  Min.   : 4.20   OJ:30   0.5:20
##  1st Qu.:13.07   VC:30   1  :20
##  Median :19.25           2  :20
##  Mean   :18.81
##  3rd Qu.:25.27
##  Max.   :33.90
```





There obviously exists a positive and proportionate effect of orange juice as compared with the ascorbic acid, however, this effect can only be observed at dose levels below 2 mg. We can also demonstrate this in numeric values (see below, see **Code Block 1**)

```
ToothGrowth %>% filter(supp=="OJ") -> oj.data
ToothGrowth %>% filter(supp=="VC") -> vc.data
```

4 References

5 Related R Code

5.1 Code Block 1