Tooth Growth Inferential Data Analysis

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July 22, 2015

1 Overview

This project analyzes the influence of supplement type and dose level on tooth growth of guinea pigs. To do this, ee consider two types of supplement (Vitamin C and Orange Juice) and three levels of dose (0.5mg, 1mg and 2mg) and we examine the difference of tooth length among different groups by hypothesis testing.

2 Dataset Description

Each observation of the corresponds to the measure of length of odontoblasts 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).

1. **len**: is the length of odontoblasts (teeth) in each of 10 guinea pigs.
2. **supp**: corresponds to the two delivery methods (orange juice or ascorbic acid).
3. **dose**: corresponds the levels of Vitamin C (0.5, 1, and 2 mg)

3 Exploratory Analysis

The table shows the mean length of the t

supp	dose	mean(len)
OJ	0.5	13.23
OJ	1	22.70
OJ	2	26.06
VC	0.5	7.98
VC	1	16.77
VC	2	26.14

```
ggplot(ToothGrowth) + geom_boxplot(aes(x = supp, y = len, fill =dose))
```

You can also embed plots, for example:

Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.

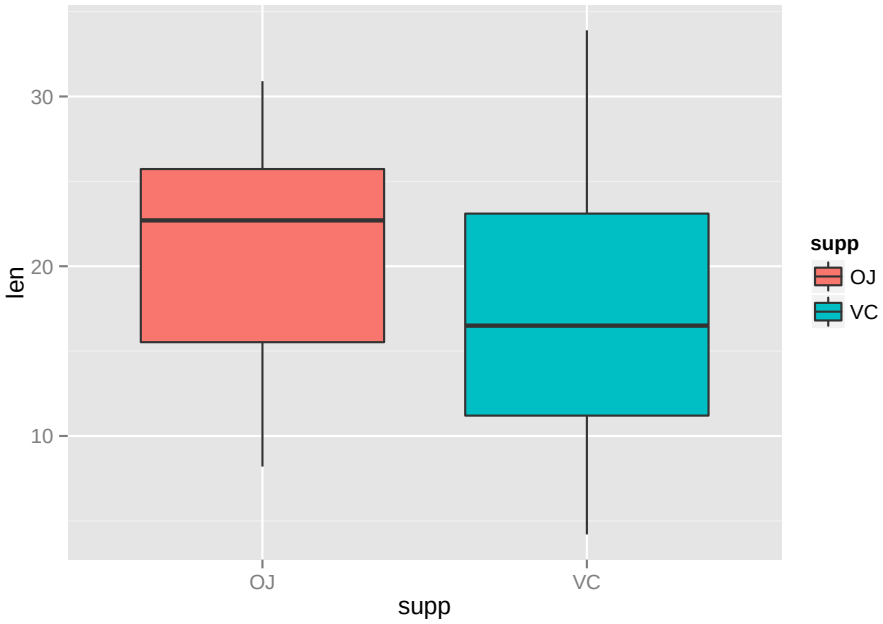

Figure 1: Boxplot by supplement type

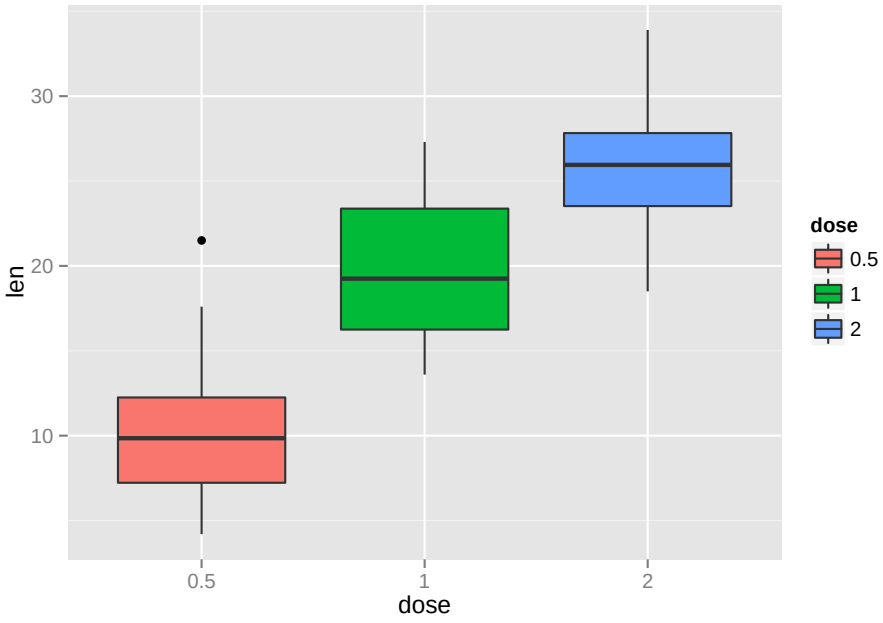

Figure 2: Boxplot by dose

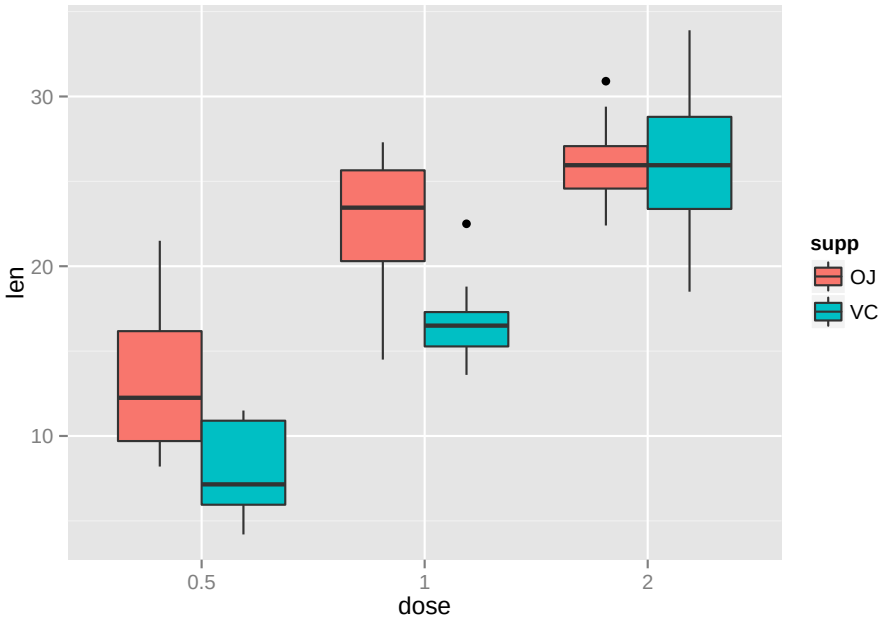

Figure 3: Boxplot by dose

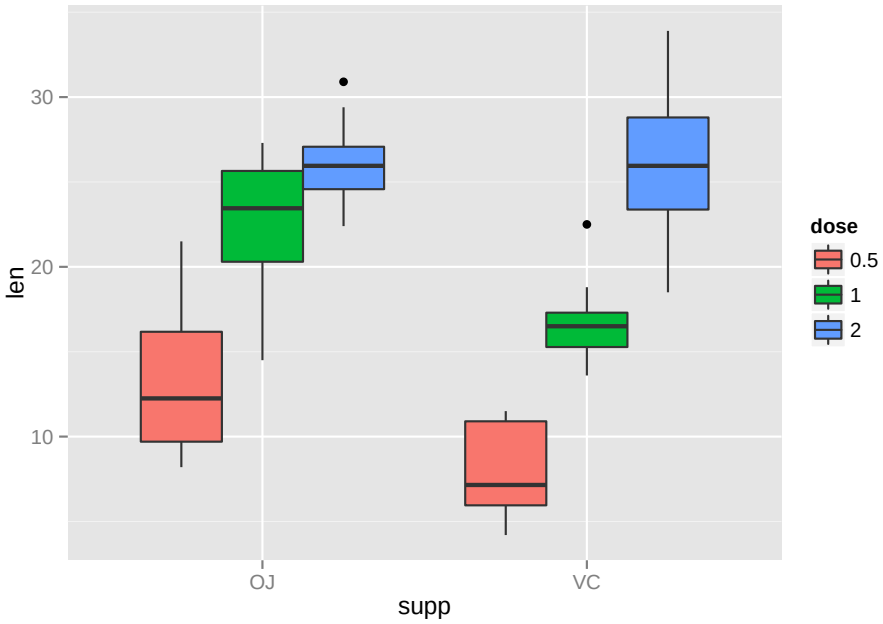

Figure 4: Boxplot by dose

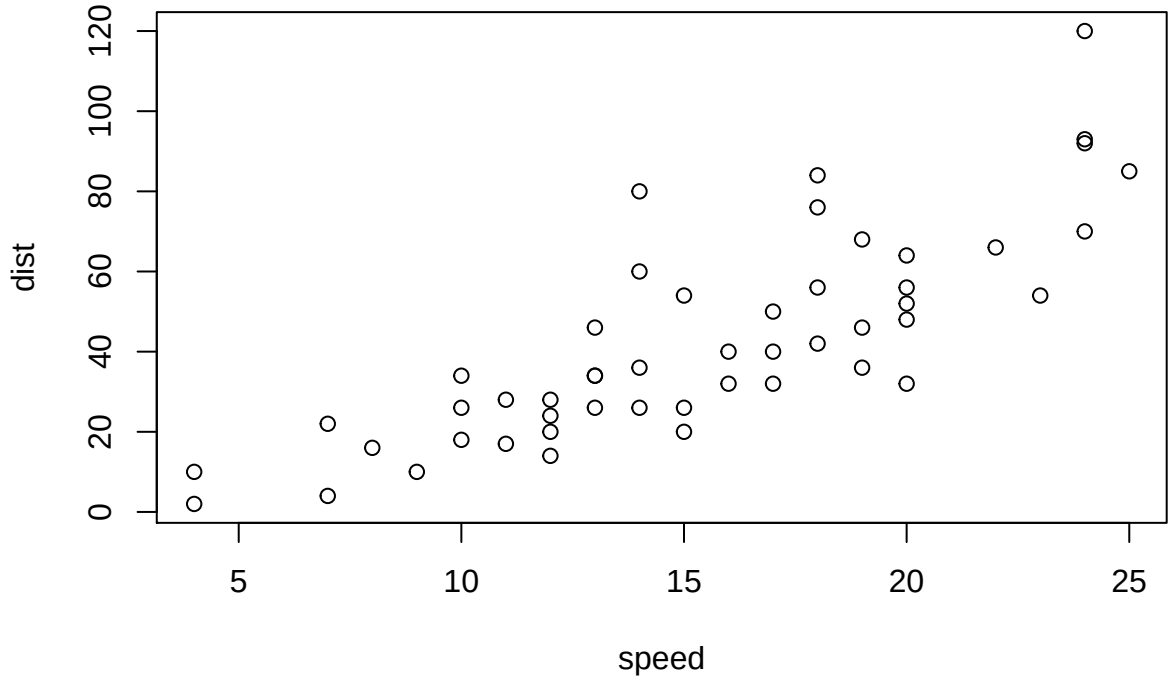

Figure 5: