Homework1

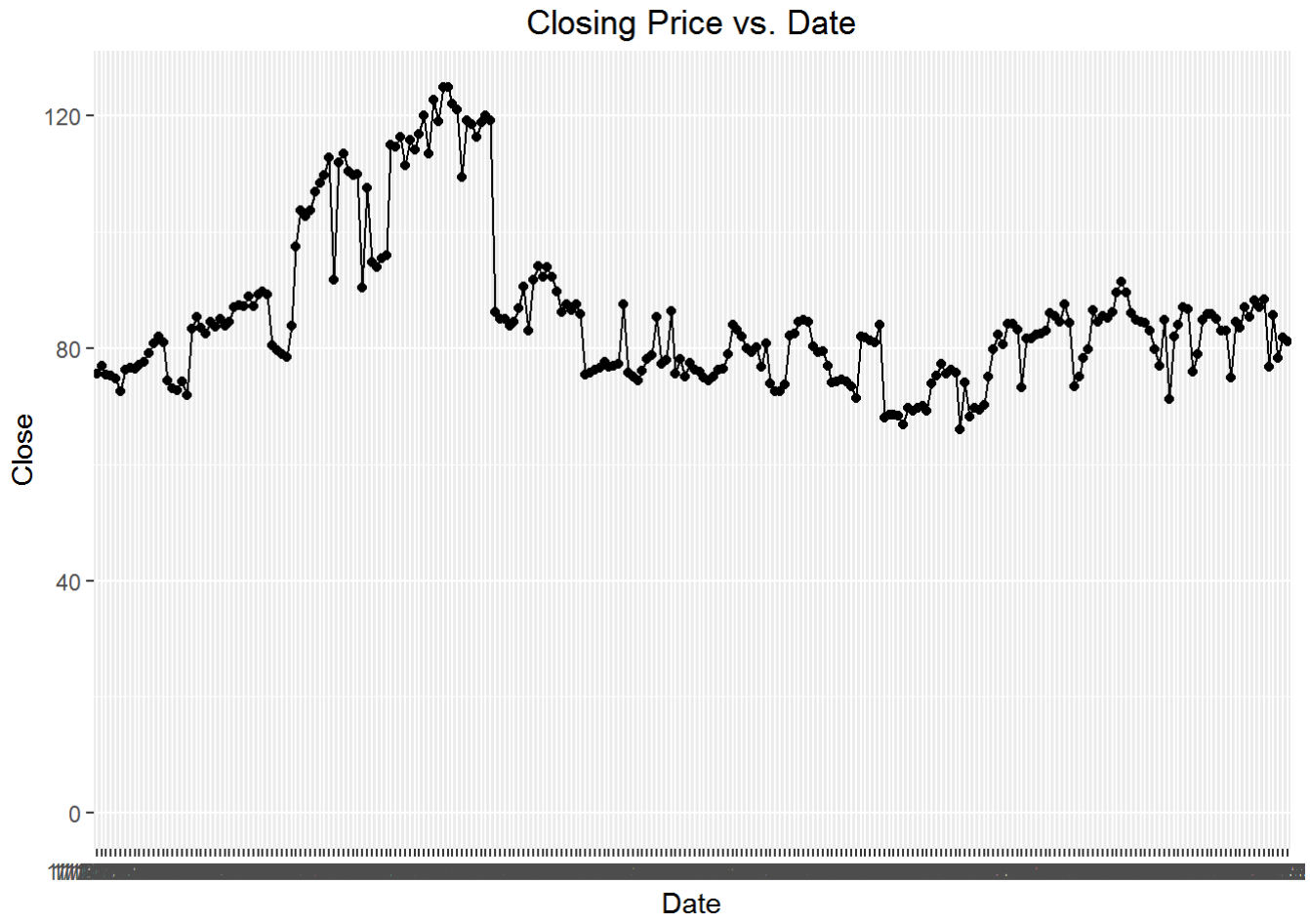
Read Datasets

```
#Intel Dataset
intel <- read.csv(file="C:/Users/dglownia/Documents/GitHub/CSC-465-Data-Visualization/Homework1/Datasets/Intel-1998.csv",head=TRUE,sep=",")

experiment <- read.csv(file="C:/Users/dglownia/Documents/GitHub/CSC-465-Data-Visualization/Homework1/Datasets/PerceptionExperiment2007-2015Fall.csv",head=TRUE,sep=",")
```

Problem 1 (Intel Dataset)

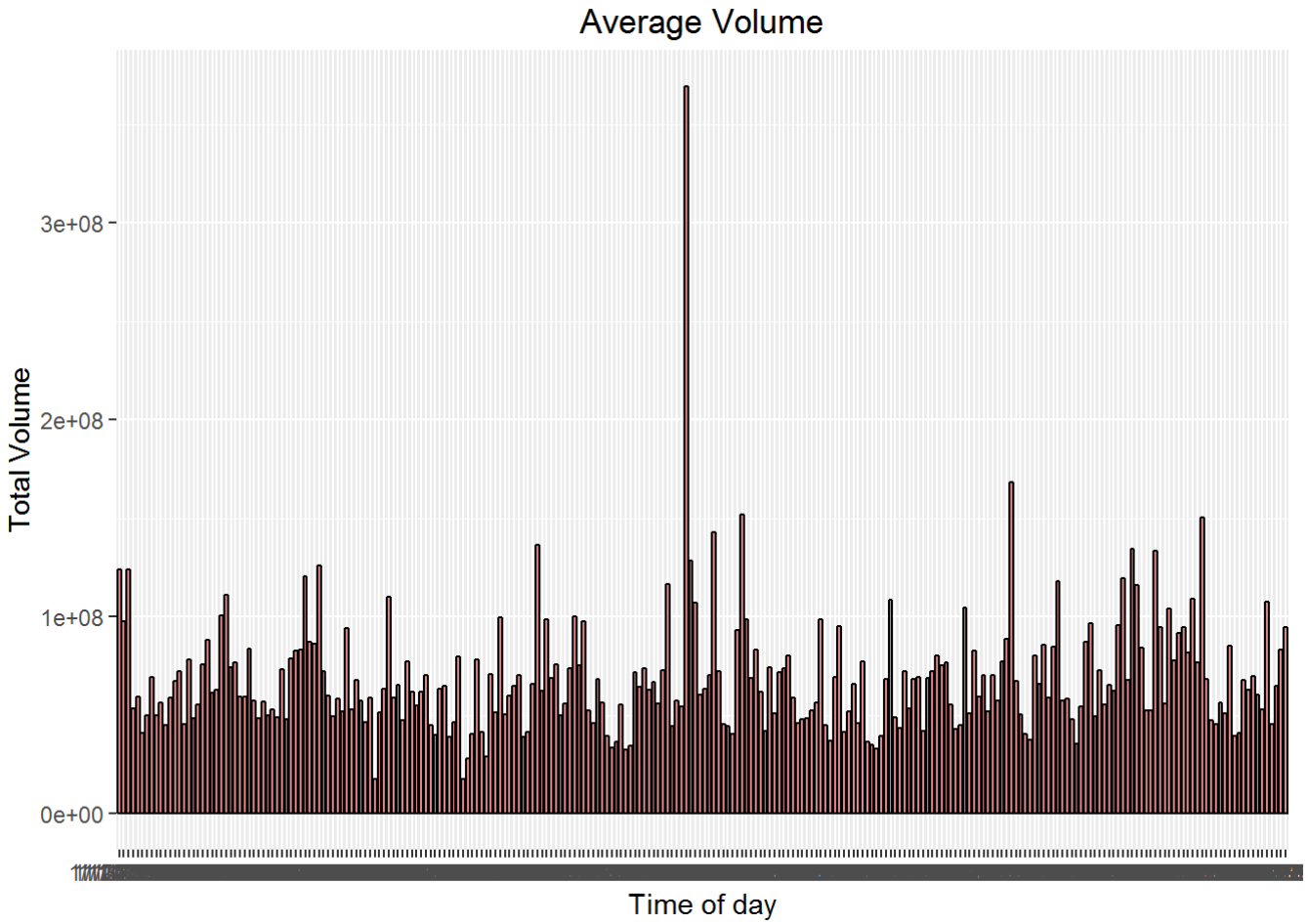
a.

```
library(ggplot2)

ggplot(data=intel, aes(x=Date, y=Close, group=1)) +
  geom_line() +
  geom_point() +
  expand_limits(y=0) +
  xlab("Date") + ylab("Close") +
  ggtitle("Closing Price vs. Date")
```



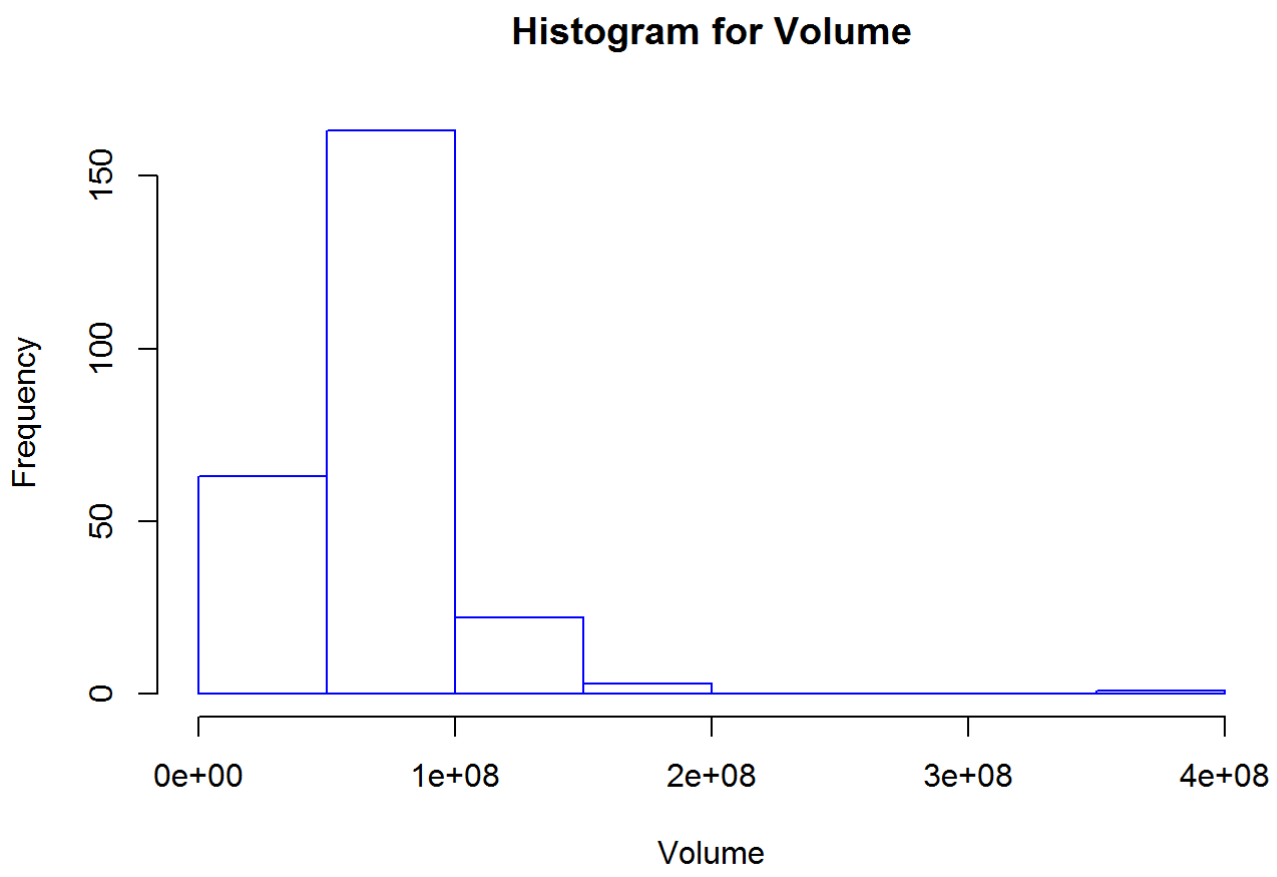
b.

```
library(ggplot2)

ggplot(data=intel, aes(x=Date, y=Volume)) +
    geom_bar(colour="black", fill="#DD8888", width=.8, stat="identity") +
    guides(fill=TRUE) +
    xlab("Time of day") + ylab("Total Volume") +
    ggtitle("Average Volume")
```



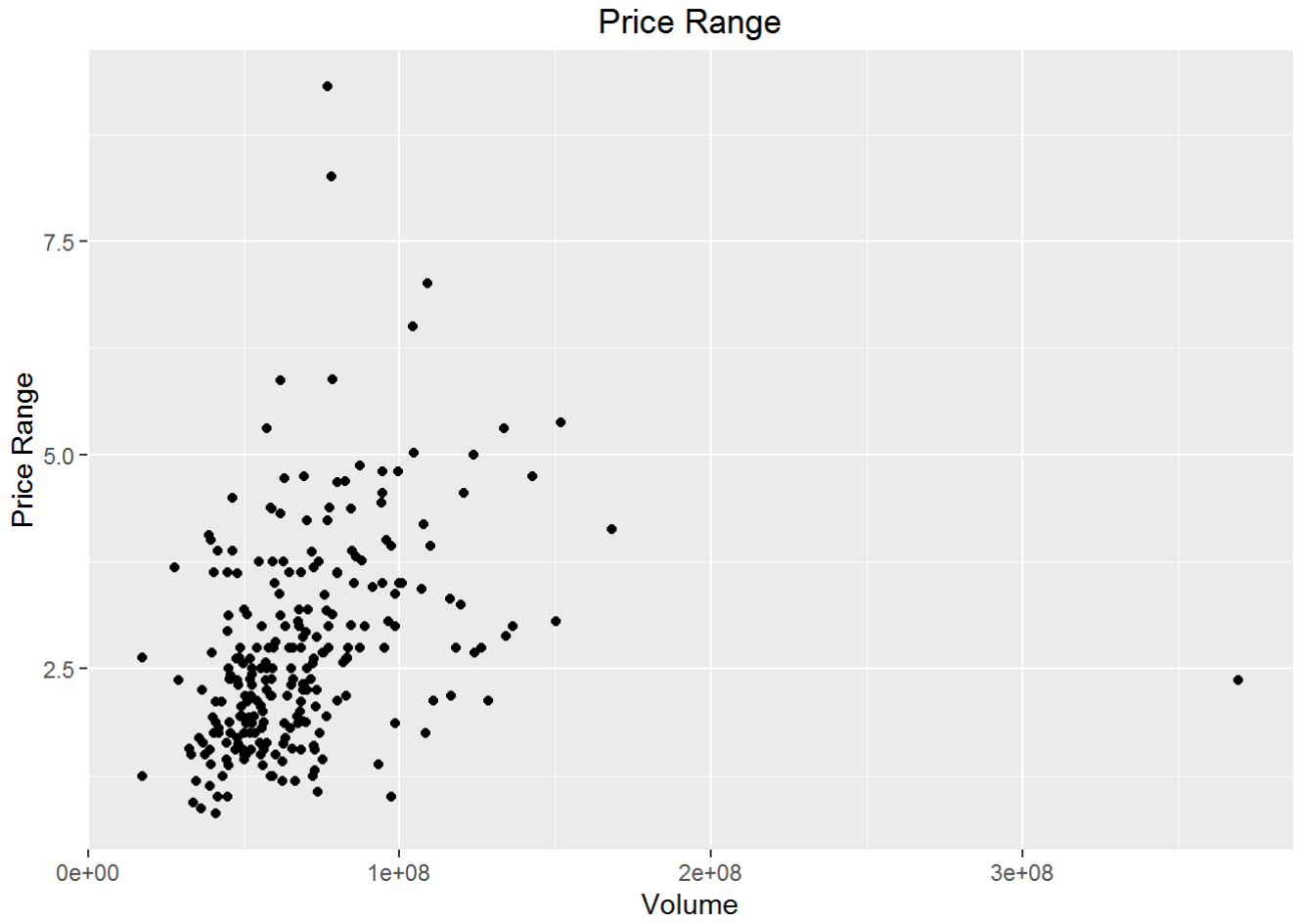
c.

```
hist(intel$Volume,
     main="Histogram for Volume",
     xlab="Volume",
     border="blue")
```



d.

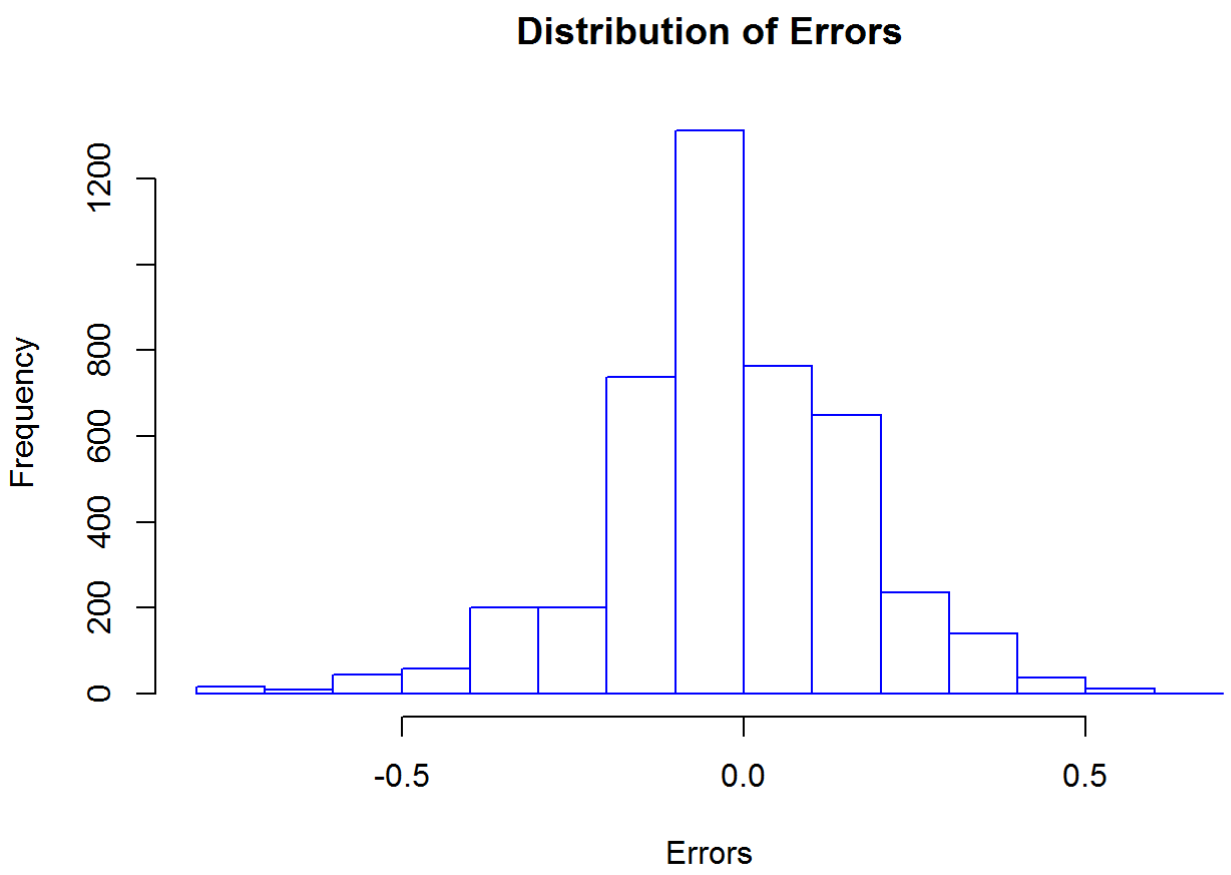
```
library(ggplot2)

intel[, "PriceRange"] <- NA
intel$PriceRange <- intel$High - intel$Low

p1 <- ggplot(intel, aes(x = Volume, y = PriceRange)) +
xlab("Volume") + ylab("Price Range") +
    ggtitle("Price Range")
p1 + geom_point()
```



Problem 2 (experiment.xls)

a.

```
experiment[, "Error"] <- NA
experiment$Error <- experiment$Response - experiment$TrueValue

hist(experiment$Error,
     main="Distribution of Errors",
     xlab="Errors",
     border="blue")
```



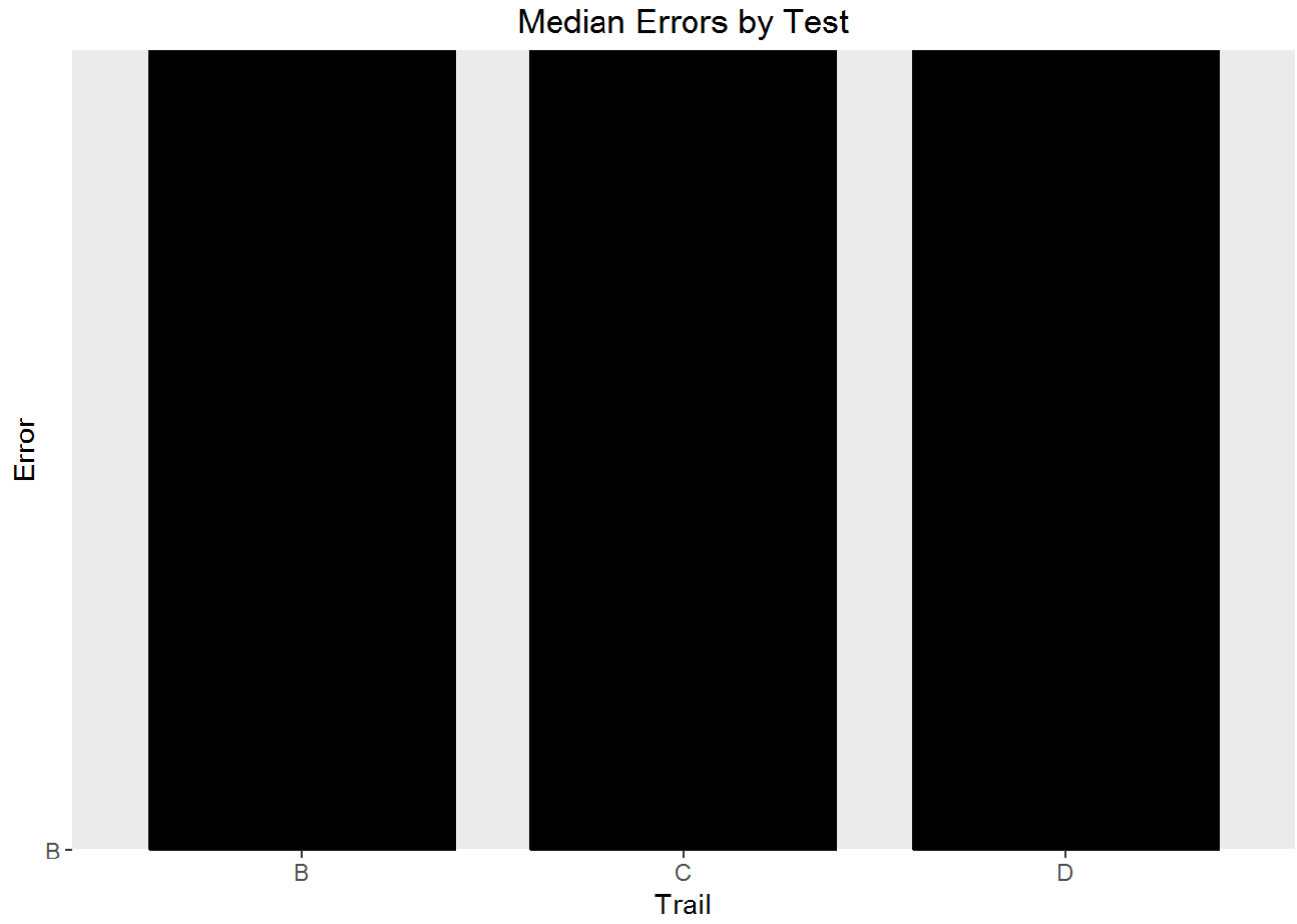
b.

```
library(ggplot2)

ggplot(data=experiment, aes(x=Trial, y=Error)) +
    geom_bar(colour="black", fill="#DD8888", width=.8, stat="identity") +
    xlab("Trail") + ylab("Error") +
    ggtitle("Median Errors by Test")
```

```
## Warning: Stacking not well defined when ymin != 0
```

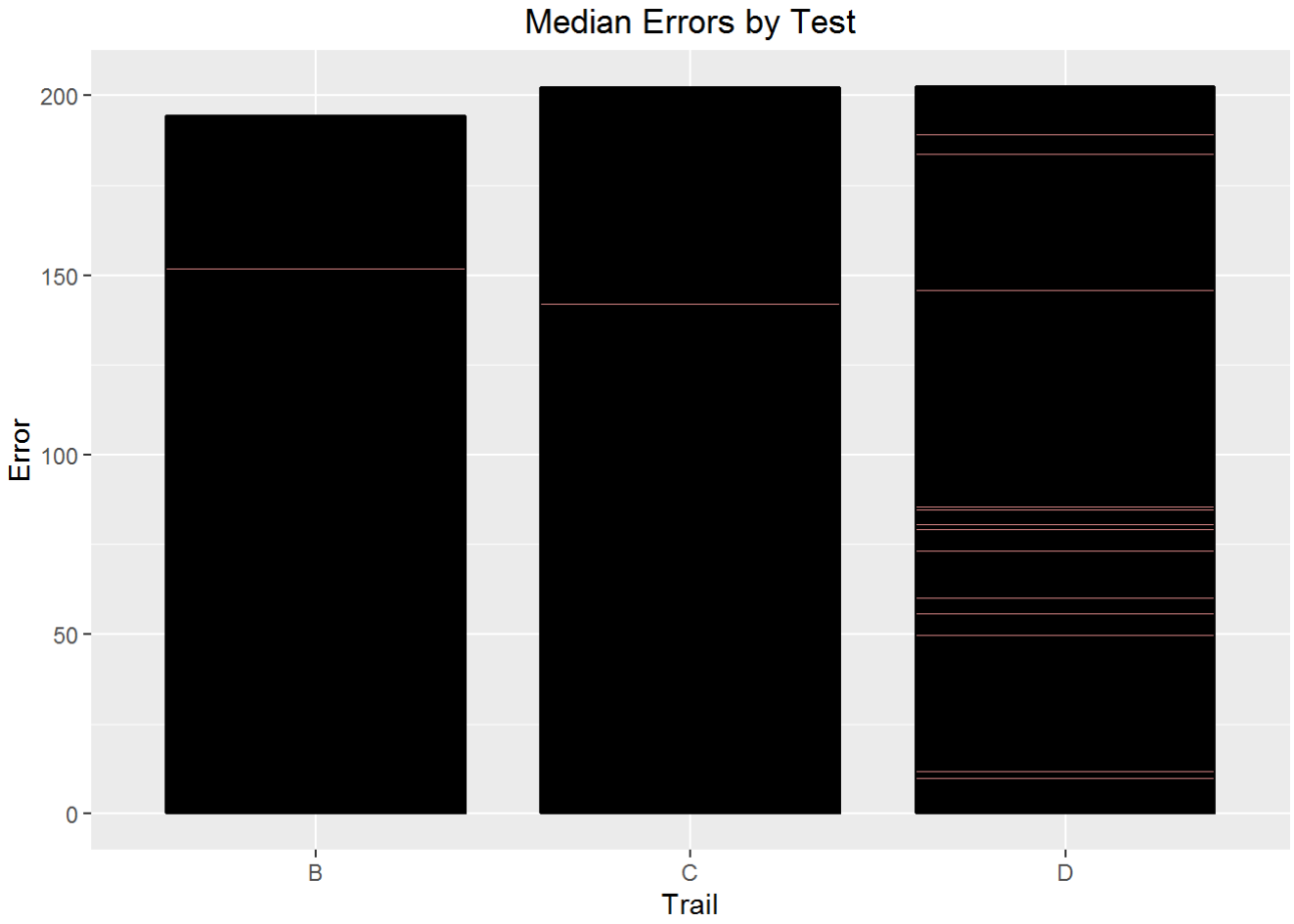
c.

```
experiment[, "stdErrorCategory"] <- NA
experiment$stdErrorCategory <- ifelse(experiment$Error > 0.5,"A", "NAN")
experiment$stdErrorCategory <- ifelse(experiment$Error < -0.5,"C", "NAN")
experiment$stdErrorCategory <- ifelse(experiment$Error >= -0.5 || experiment$Error <= 0.5 ,"B",
"NAN")

ggplot(data=experiment, aes(x=Trial, y=stdErrorCategory)) +
    geom_bar(colour="black", fill="#DD8888", width=.8, stat="identity") +
    xlab("Trail") + ylab("Error") +
    ggtitle("Median Errors by Test")
```



d.

```
experiment[, "absError"] <- NA
experiment$absError <- abs(experiment$Error)

ggplot(data=experiment, aes(x=Trial, y=absError)) +
    geom_bar(colour="black", fill="#DD8888", width=.8, stat="identity") +
    xlab("Trail") + ylab("Error") +
    ggtitle("Median Errors by Test")
```



e.

Conclusion:

Problem 3

a.
b.
c.

Problem 4

a.
b.

Problem 5

a.
b.
c.