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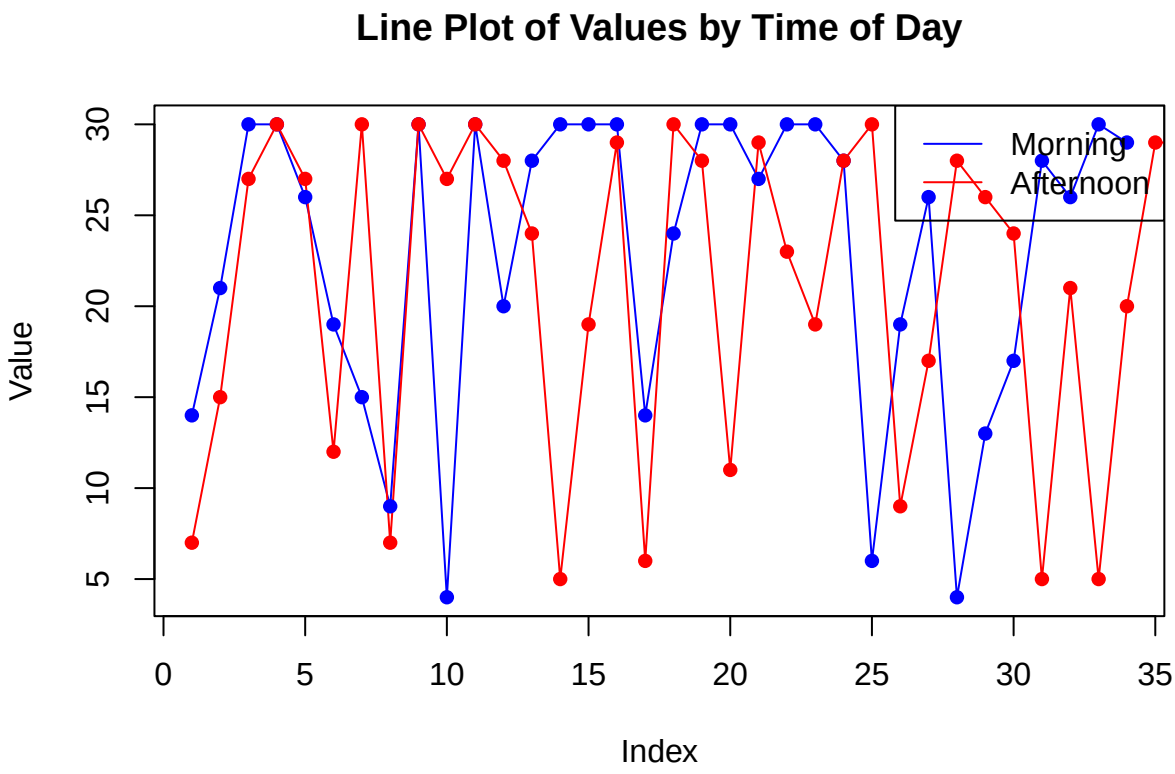
2023-12-21

1. Stroop test

Import the data and plot them in a useful way:

```
#import the data
data1<-read.csv('/Users/shennuo/ADS_2023/stroop_test.csv')
morning_data <- subset(data1, Time == "Morning")
afternoon_data <- subset(data1, Time == "Afternoon")

#plot
plot(morning_data$Score, type = "l", col = "blue",
     main = "Line Plot of Values by Time of Day", xlab = "Index", ylab = "Value")
lines(afternoon_data$Score, col = "red")
points(morning_data$Score, col = "blue", pch = 16)
points(afternoon_data$Score, col = "red", pch = 16)
legend("topright", legend = unique(data1$Time), col = c("blue", "red"), lty = 1)
```



Is there a difference in performance on the Stroop task between the morning and afternoon group?

```
stroop_test<-t.test(data1$Time == 'Morning', data1$Time == 'Afternoon')
print(stroop_test)
```

```
##
##  Welch Two Sample t-test
##
## data:  data1$Time == "Morning" and data1$Time == "Afternoon"
## t = -0.98294, df = 146, p-value = 0.3273
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.24410608  0.08194392
## sample estimates:
## mean of x mean of y
## 0.4594595 0.5405405
```

P-value>0.05 No difference

##2. Marathon finishing times

```
#import the data
data2<-read.csv('/Users/shennuo/ADS_2023/Chicago2013_random_finishers.csv')

#plot
plot(data2$Age, data2$Time,
```

```
    col = ifelse(data2$Gender == "M", "blue", "pink"),
    pch = 16, xlab = "Age", ylab = "Finishing Time",
    main = "Finishing Time vs. Age by Gender")
```