Assignment_1

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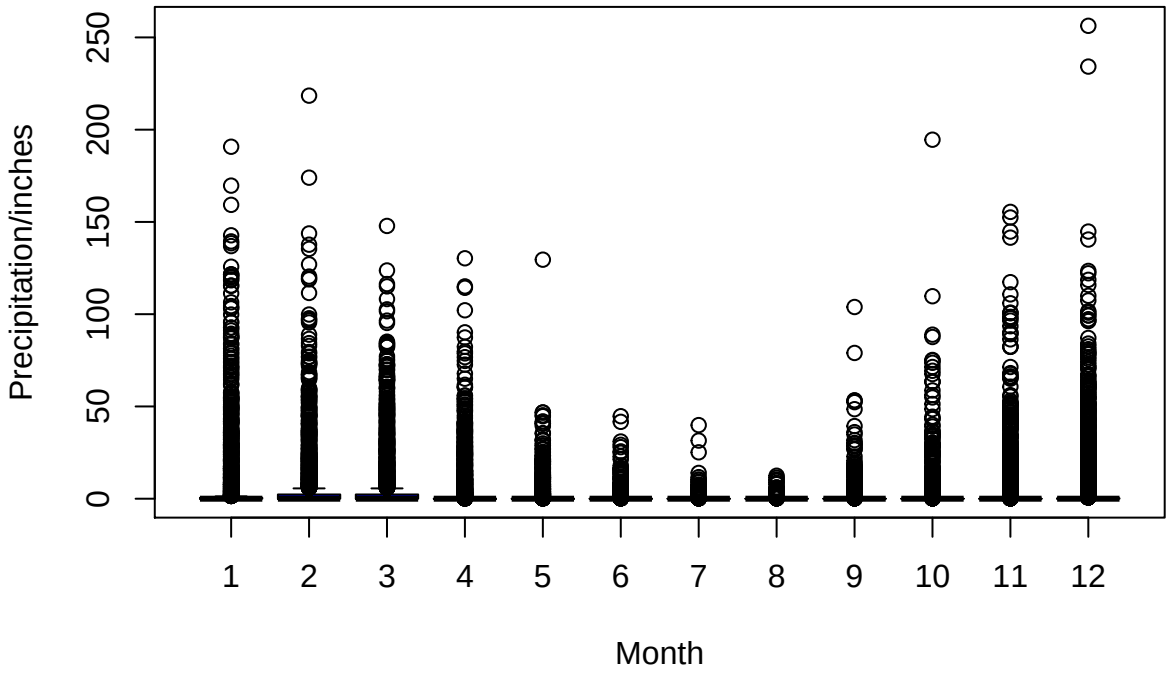
R Markdown Practice

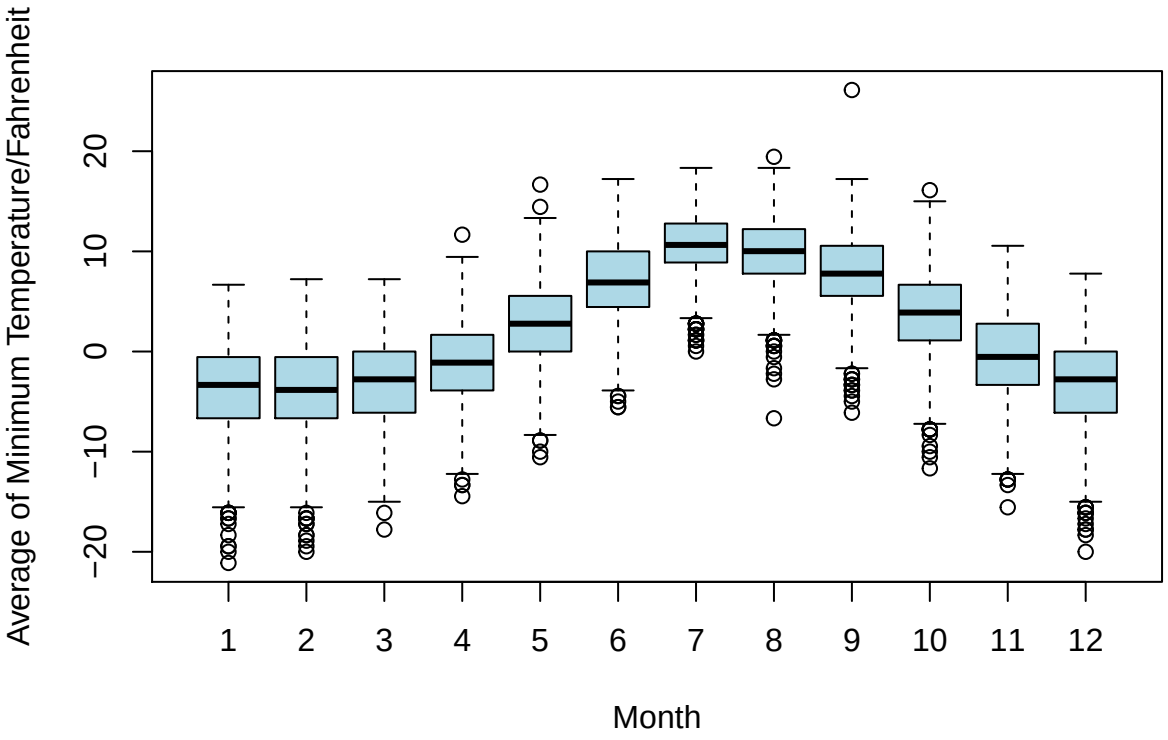
Monthly precipitation

```
climate = read.table("clim.txt", header=T)
boxplot(climate$rain~climate$month,
  ylab="Precipitation/inches",
  xlab="Month", col="blue")
```



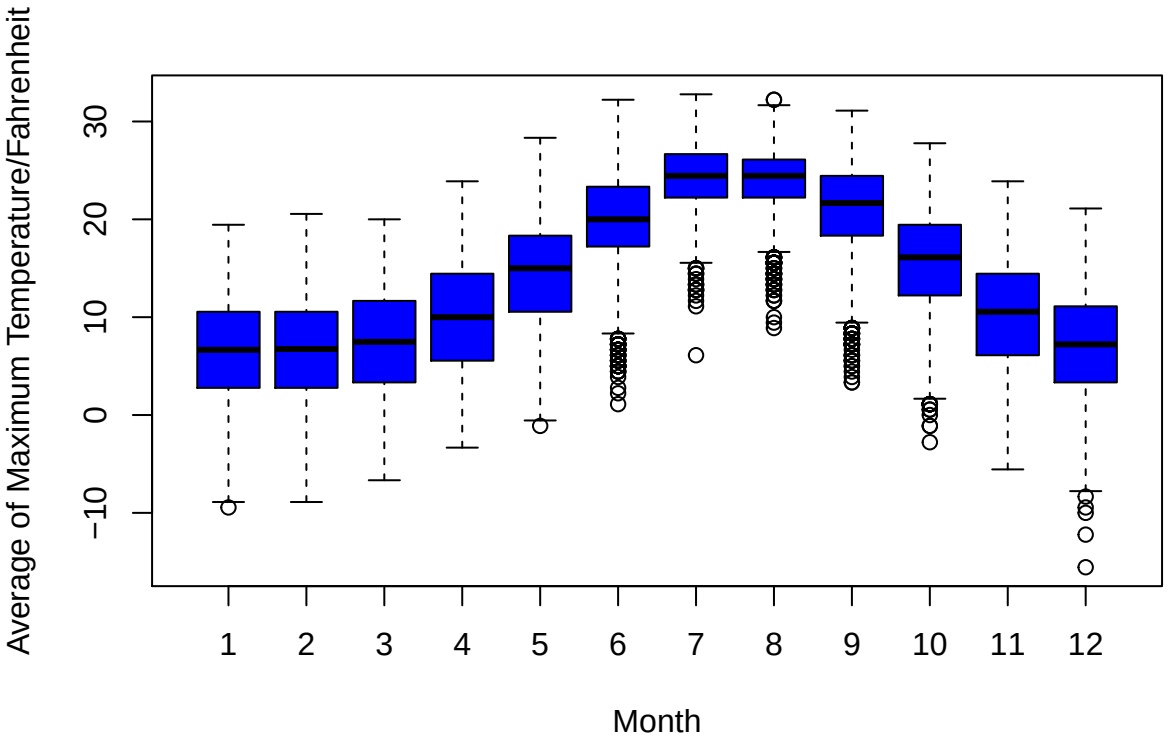
Monthly minimum average temperature

```
climate = read.table("clim.txt", header=T)
boxplot(climate$tmin~climate$month,
  ylab="Average of Minimum Temperature/Fahrenheit",
  xlab="Month", col="lightblue")
```



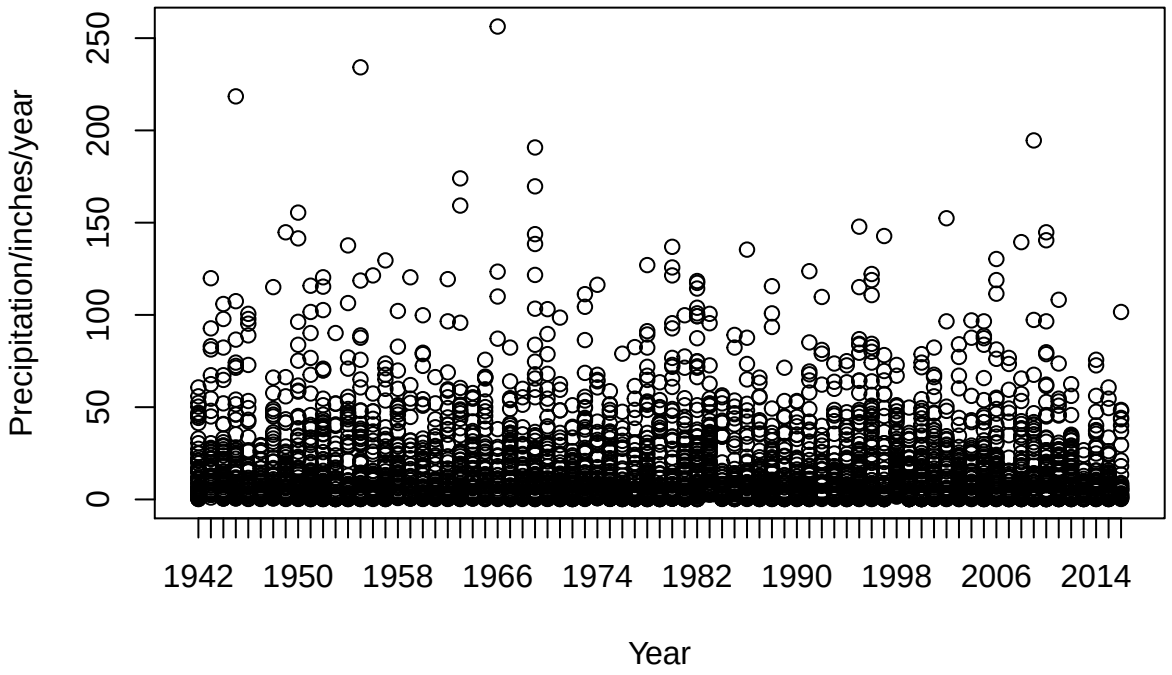
Monthly maximum average temperature

```
climate = read.table("clim.txt", header=T)
boxplot(climate$tmax~climate$month,
  ylab="Average of Maximum Temperature/Fahrenheit",
  xlab="Month", col="blue")
```



Annual rain A

```
rainfall= read.table("clim.txt", header=T)
boxplot(rainfall$rain~rainfall$year,
  ylab="Precipitation/inches/year",
  xlab="Year", col="orange")
```

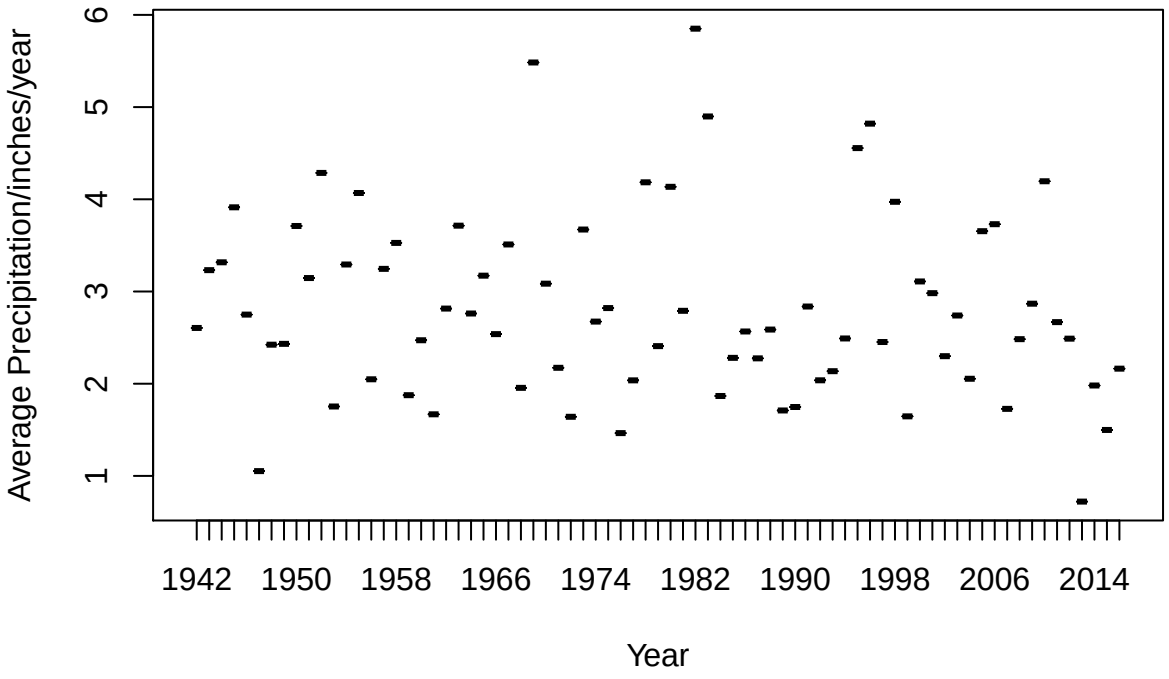


Annual Mean Rainfall

```
YearMeanST <- aggregate (rainfall$rain ~ year, data = rainfall, FUN = function(x) {c(MEAN = mean(x), SD=
names(YearMeanST)
```

```
## [1] "year"          "rainfall$rain"
```

```
YearMeanSTTable <- do.call(data.frame, YearMeanST)
colnames(YearMeanSTTable) <- c("Year", "Mean", "SD")
View(YearMeanSTTable)
boxplot(YearMeanSTTable$Mean~YearMeanSTTable$Year,
 ylab="Average Precipitation/inches/year",
 xlab="Year", col="blue")
```



Wettest year using the mean

```
result=which.max(YearMeanSTTable$Mean)
YearMeanSTTable[result,]
```

```
##    Year     Mean       SD
## 41 1982 5.850351 18.62009
```

Driest year using the mean

```
result=which.min(YearMeanSTTable$Mean)
YearMeanSTTable[result,]
```

```
##    Year      Mean       SD
## 72 2013 0.7216384 2.850297
```

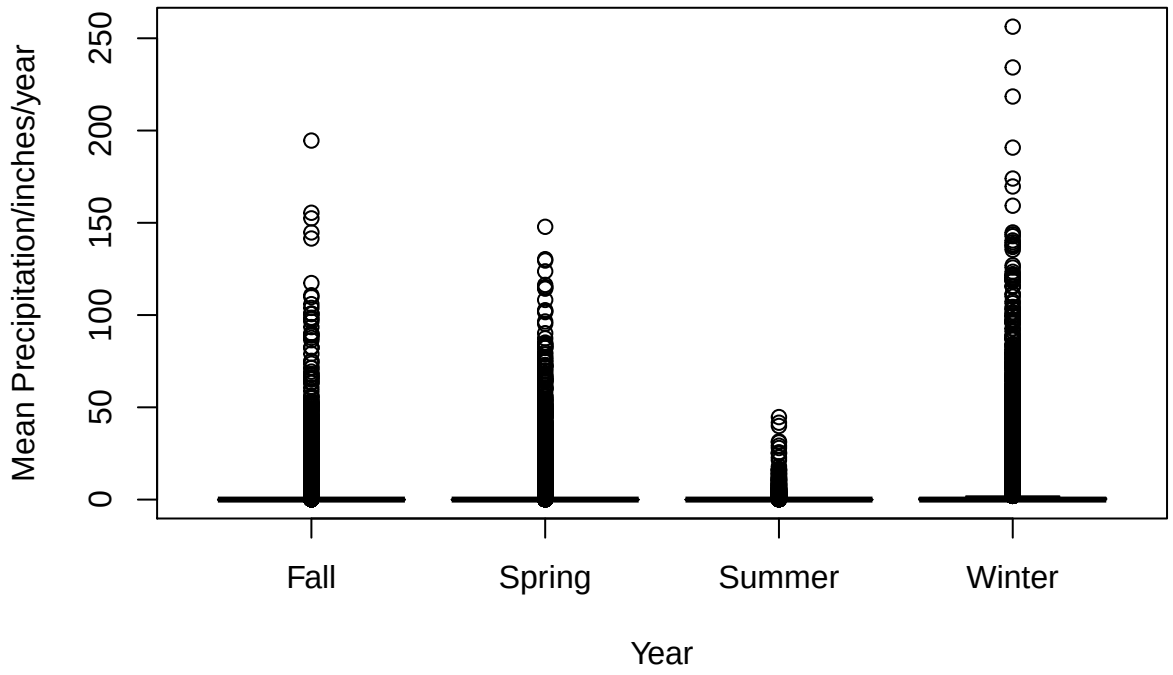
Wet and Dry Season Picture from Guanacaste, Costa Rica. Tropical Dry Forest

Subsetting seasons

```
View(climate)
range(climate$month)
```

```
## [1]  1 12
```

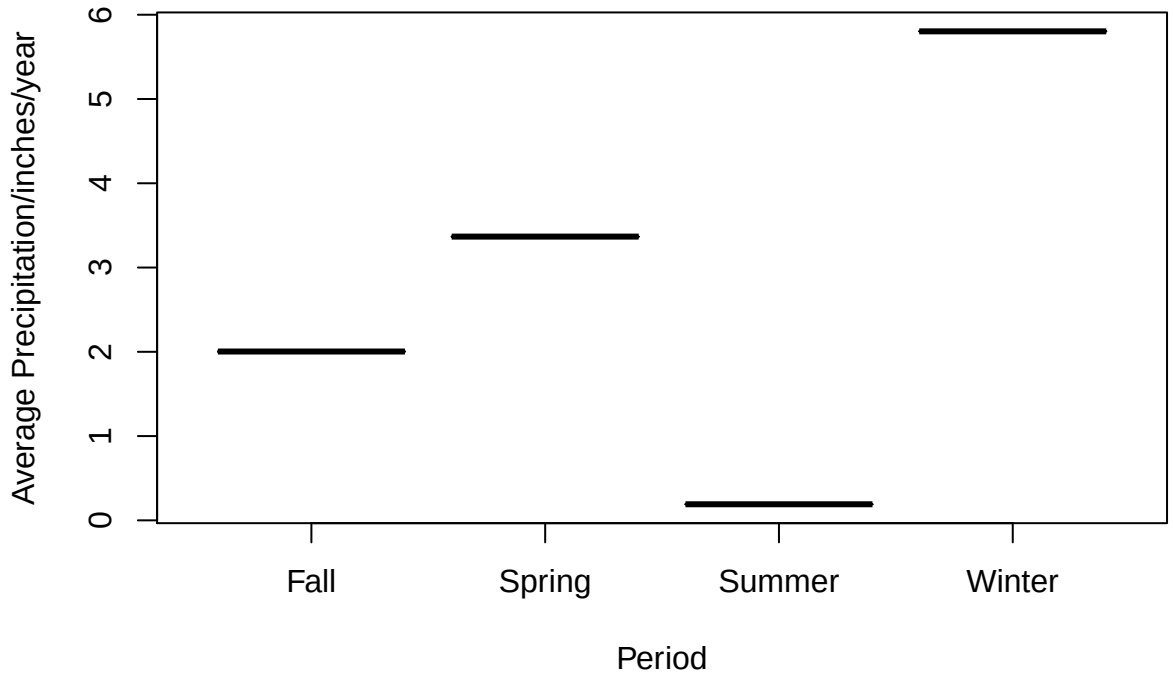
```
climate$period <- ifelse(climate$month %in% c(3,4,5),"Spring",
ifelse(climate$month %in% c(6,7,8), "Summer",
ifelse(climate$month %in% c(9,10,11), "Fall", "Winter")))
boxplot(climate$rain~climate$period,
ylab="Mean Precipitation/inches/year",
xlab="Year", col="blue")
```




```
SeasonMeanSD <- aggregate (climate$rain ~ period, data = climate, FUN = function(x) {c(MEAN = mean(x), S
names(SeasonMeanSD)
```

```
## [1] "period"       "climate$rain"
```

```
SeasonMeanSTTable <- do.call(data.frame, SeasonMeanSD)
colnames(SeasonMeanSTTable) <- c("Period", "Mean", "SD")
View(SeasonMeanSTTable)
boxplot(SeasonMeanSTTable$Mean~SeasonMeanSTTable$Period,
 ylab="Average Precipitation/inches/year",
 xlab="Period", col="blue")
```



Driest season using the mean

```
result=which.min(SeasonMeanSD$`climate$rain`)
SeasonMeanSD[result,]
```

```
##   period climate$rain.MEAN climate$rain.SD
## 3 Summer         0.1909786       1.6607996
```