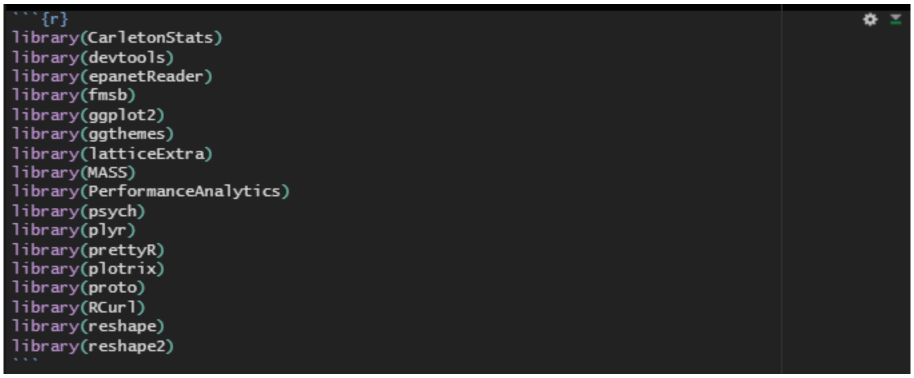
Module # 11 Assignment

Step 1: Load Libraries



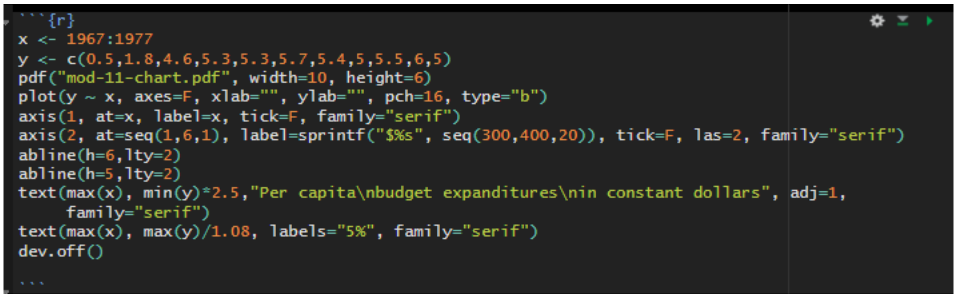
~~~~
```{r}
library(CarletonStats)
library(devtools)
library(epanetReader)
library(fmsb)
library(ggplot2)
library(ggthemes)
library(latticeExtra)
library(MASS)
library(PerformanceAnalytics)
library(psych)
library(plyr)
library(prettyR)
library(plotrix)
library(proto)
library(RCurl)
library(reshape)
library(reshape2)
```
~~~~

The hardest part of this assignment was getting all the R libraries loaded correctly. I ran into multiple issues along the way, and at one point, I nearly bricked my program entirely by accident. I've never managed to get Devtools working before, so it's a relief to finally have it running, though I honestly couldn't tell you exactly how I got it working this time. I didn't end up using all the libraries I loaded, but I had to load them one by one to troubleshoot each issue. Despite the hassle, it felt rewarding to finally have everything functioning properly in my program. In the past, I've had to work around certain libraries, especially Devtools, so having it all work smoothly for once was a nice change.

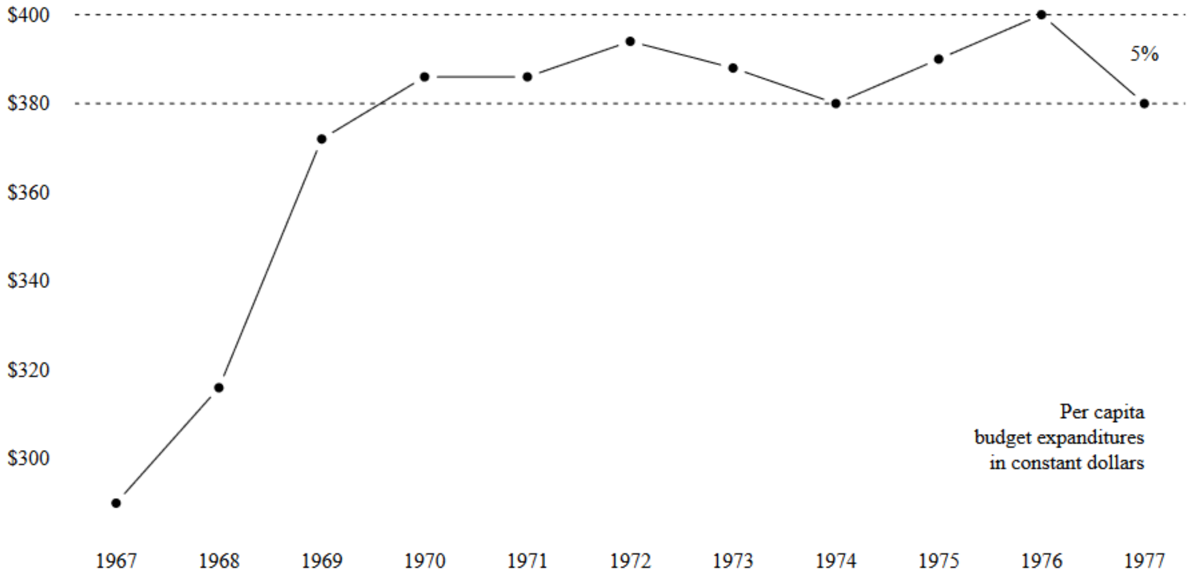
Step 2: Plotting the Charts

These code examples were provided by Dr. Piwek's blog post on Tufte and C. Minard in R, but it was great practice writing out the code and working through what each part did. It's a little embarrassing to admit, but I actually have limited experience plotting in base R, as I primarily stick with ggplot2—it's the library I first learned and feel most comfortable with. Working through plotting in base R, though, turned out to be surprisingly insightful. I also found the process of opening a graphical device, executing commands, and then closing and saving it as a PDF to be both interesting and new. I've always manually saved plots with functions like ggsave, so learning about this approach was eye-opening. I still don't fully understand it, but I'm excited to know it's an option and am already thinking of ways I can use it in future projects.

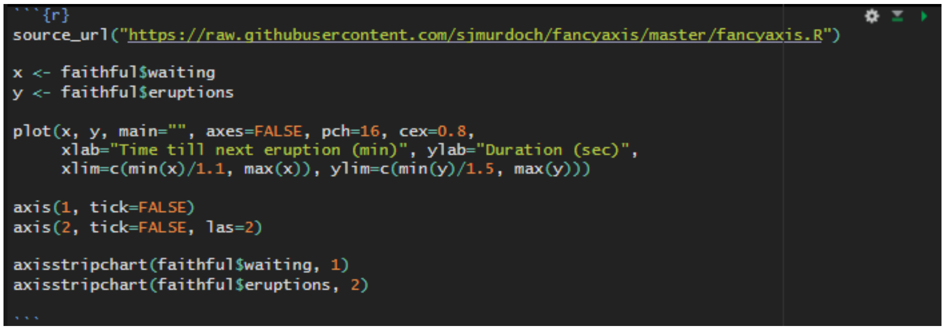
Minimal line plot in Base Graphics



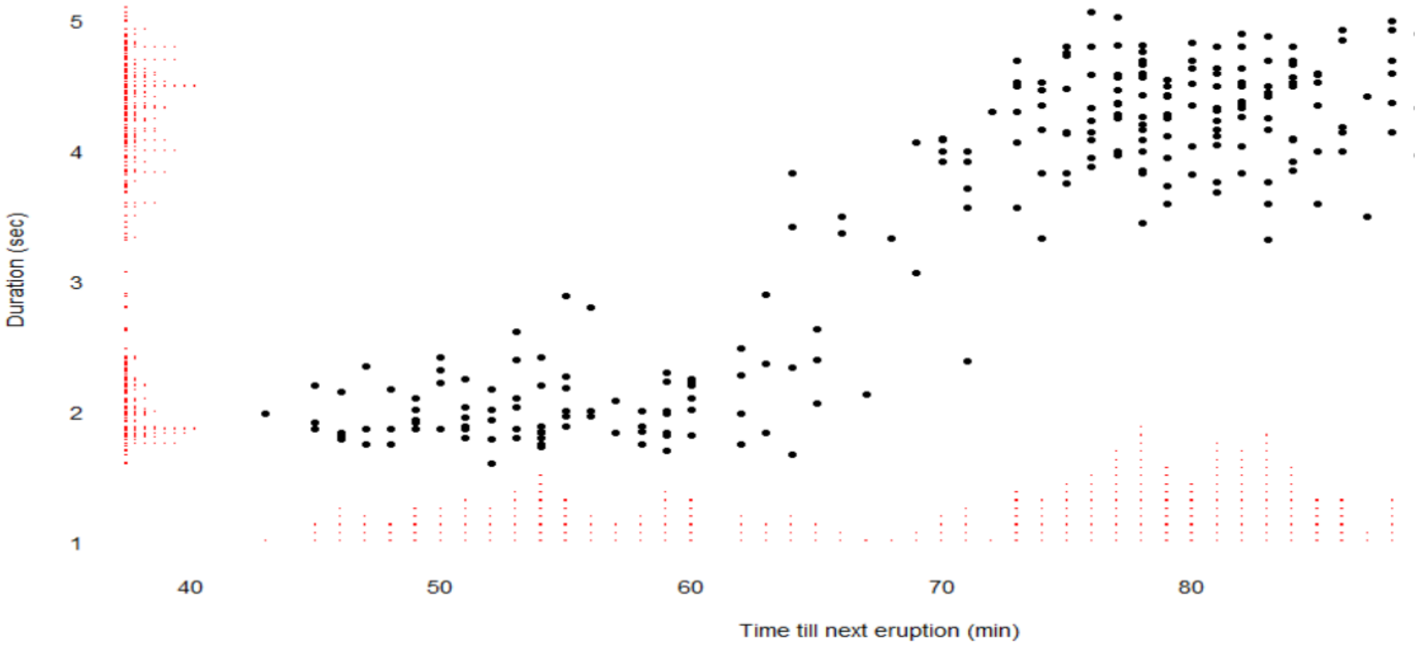
~~~~
```{r}
x <- 1967:1977
y <- c(0.5,1.8,4.6,5.3,5.3,5.7,5.4,5,5.5,6,5)
pdf("mod-11-chart.pdf", width=10, height=6)
plot(y ~ x, axes=F, xlab="", ylab="", pch=16, type="b")
axis(1, at=x, label=x, tick=F, family="serif")
axis(2, at=seq(1,6,1), label=sprintf("$%s", seq(300,400,20)), tick=F, las=2, family="serif")
abline(h=6,lty=2)
abline(h=5,lty=2)
text(max(x), min(y)*2.5,"Per capita\nbudget expanditures\nin constant dollars", adj=1,
     family="serif")
text(max(x), max(y)/1.08, labels="5%", family="serif")
dev.off()

```
~~~~



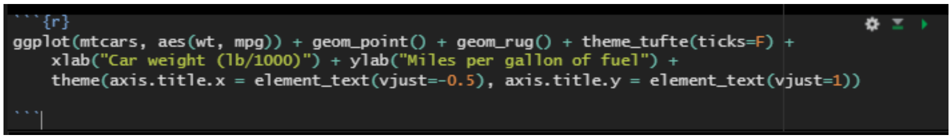
Marginal histogram scatter plot in Base Graphics



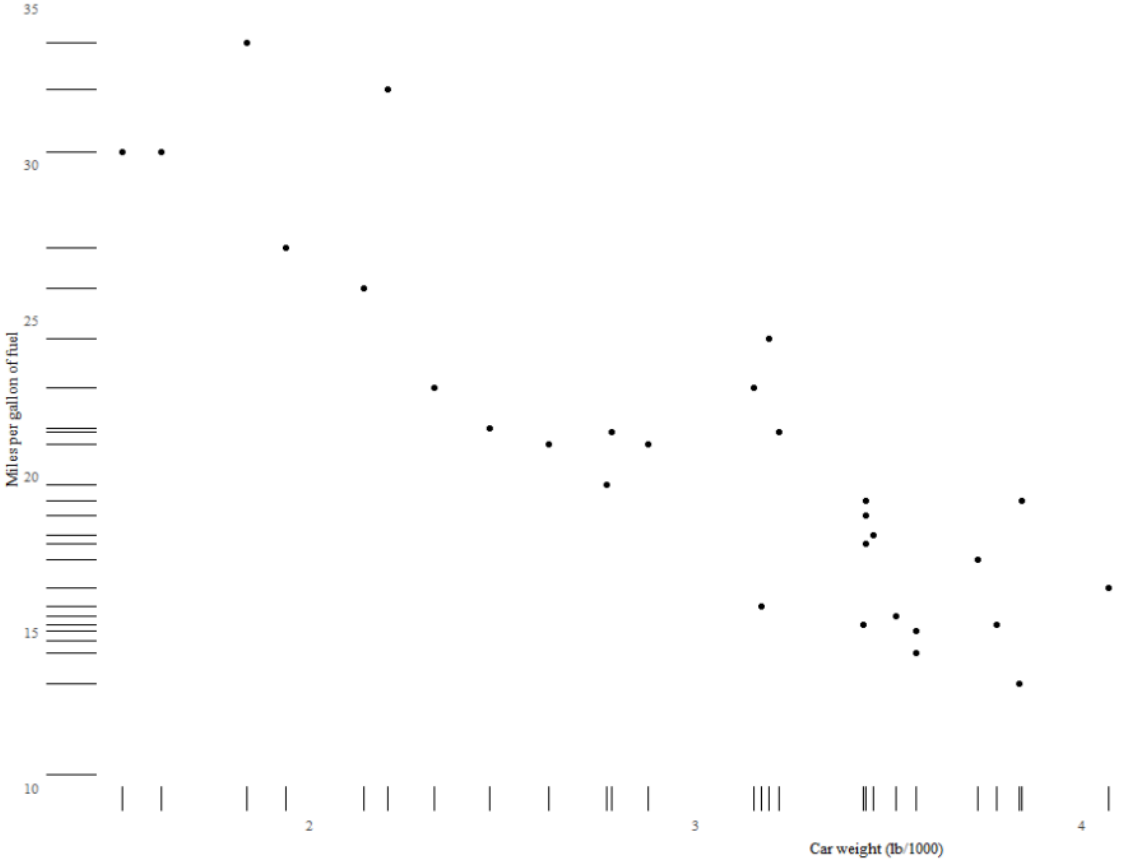
~~~
```{r}
source_url("https://raw.githubusercontent.com/sjmurdoch/fancyaxis/master/fancyaxis.R")

x <- faithful$waiting
y <- faithful$eruptions

plot(x, y, main="", axes=FALSE, pch=16, cex=0.8,
     xlab="Time till next eruption (min)", ylab="Duration (sec)",
     xlim=c(min(x)/1.1, max(x)), ylim=c(min(y)/1.5, max(y)))

axis(1, tick=FALSE)
axis(2, tick=FALSE, las=2)

axisstripchart(faithful$waiting, 1)
axisstripchart(faithful$eruptions, 2)
```
~~~



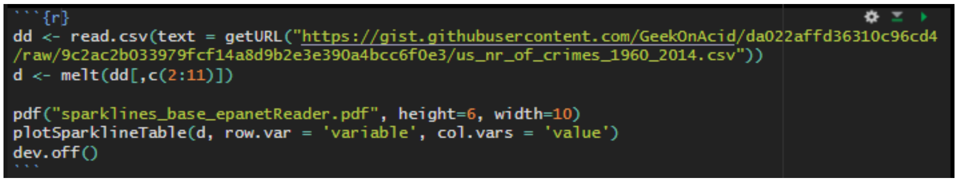
Dot-dash plot in ggplot2



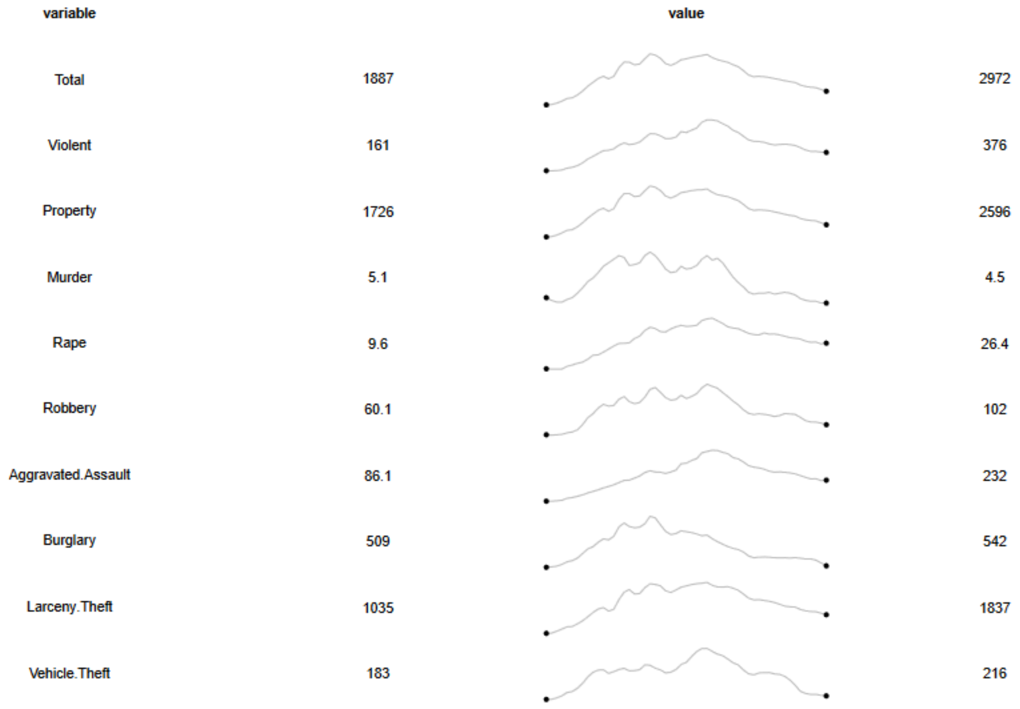
~~~
```{r}
ggplot(mtcars, aes(wt, mpg)) + geom_point() + geom_rug() + theme_tufte(ticks=F) +
    xlab("Car weight (lb/1000)") + ylab("Miles per gallon of fuel") +
    theme(axis.title.x = element_text(vjust=-0.5), axis.title.y = element_text(vjust=1))

```
~~~



Sparklines in base graphics with plotSparklineTable



~~~
```{r}
dd <- read.csv(text = getURL("https://gist.githubusercontent.com/GeekOnAcid/da022affd36310c96cd4
/raw/9c2ac2b033979fcf14a8d9b2e3e390a4bcc6f0e3/us_nr_of_crimes_1960_2014.csv"))
d <- melt(dd[,c(2:11)])

pdf("sparklines_base_epanetReader.pdf", height=6, width=10)
plotSparklineTable(d, row.var = 'variable', col.vars = 'value')
dev.off()
```
~~~



variable		value	
Total	1887		2972
Violent	161		376
Property	1726		2596
Murder	5.1		4.5
Rape	9.6		26.4
Robbery	60.1		102
Aggravated.Assault	86.1		232
Burglary	509		542
Larceny.Theft	1035		1837
Vehicle.Theft	183		216

November 10th, 2024 6:02pm