Assignment 0

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R Assignment 0

This assignment is to finish the 14 todos in "A (very) short introduction to R" by Paul Torfs & Claudia Brauer, which can be found here https://cran.r-project.org/doc/contrib/Torfs+Brauer-Short-R-Intro.pdf

The main resource I used was the document itself, as well as the turorials at https://www.tutorialspoint.com/r/

Other resources used to assemble this report and create the repository are below: https://nicercode.github.io/guides/reports/

http://kbroman.org/knitr_knutshell/pages/Rmarkdown.html

https://www.rstudio.com/wp-content/uploads/2015/02/rmarkdown-cheatsheet.pdf

Finally, a link to my repositary where all files are stored is here: https://github.com/acook13seneca/Assignment-0

Todo 1

```
((2018 - 2016) / (2018 - 1997)) * 100
```

```
## [1] 9.52381
```

Todo 2

```
school <- 2018 - 2016
born <- 2018 - 1997
(school / born) * 100
```

```
## [1] 9.52381
```

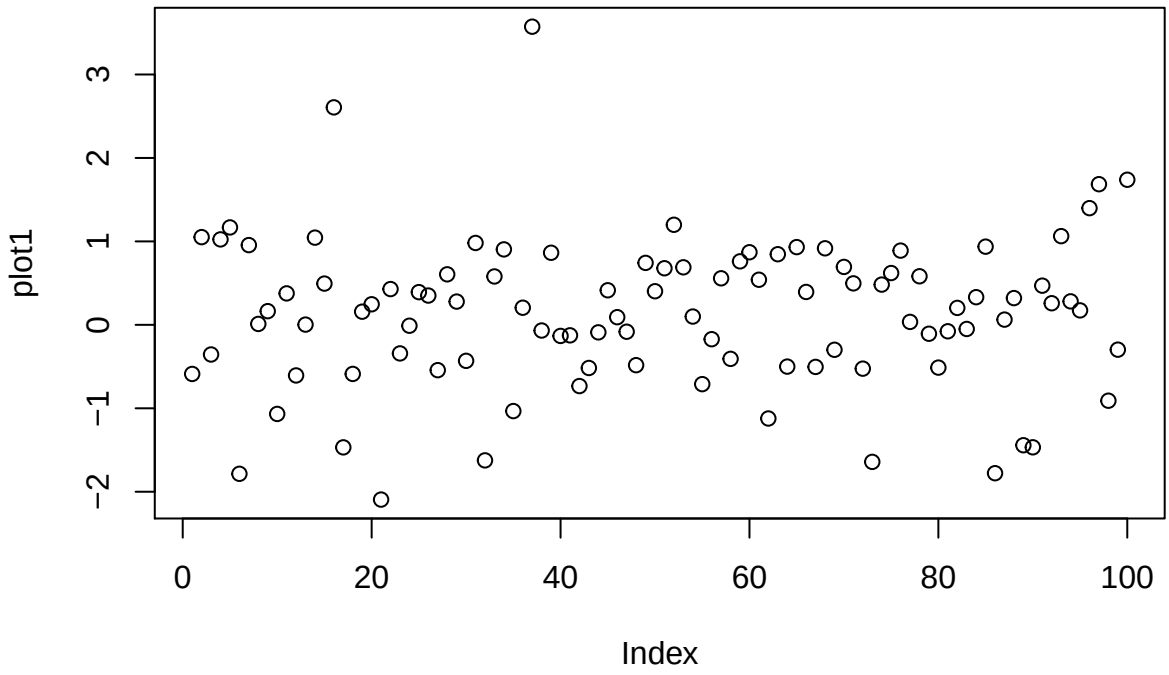
Todo 3

```
func1 <- c(4,5,8,11)
sum(func1)
```

```
## [1] 28
```

Todo 4

```
plot1 <- rnorm(100)
plot(plot1)
```

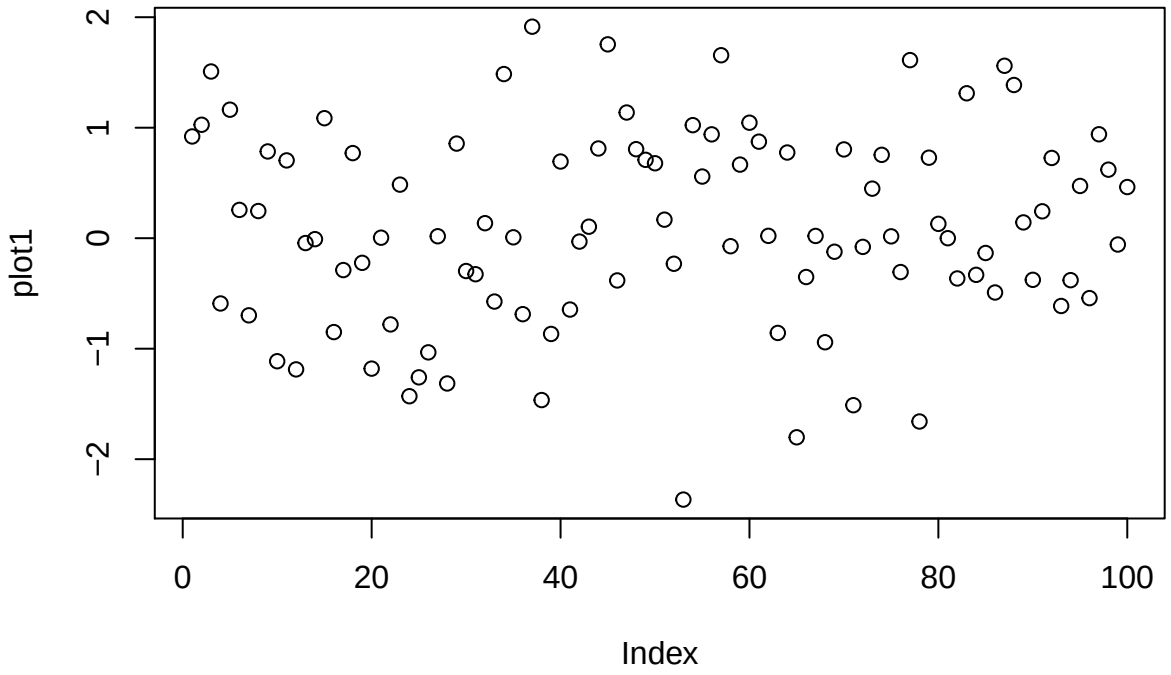


Todo 5

```
help.search("sqrt")
```

Todo 6

```
plot1 <- rnorm(100)
plot(plot1)
```

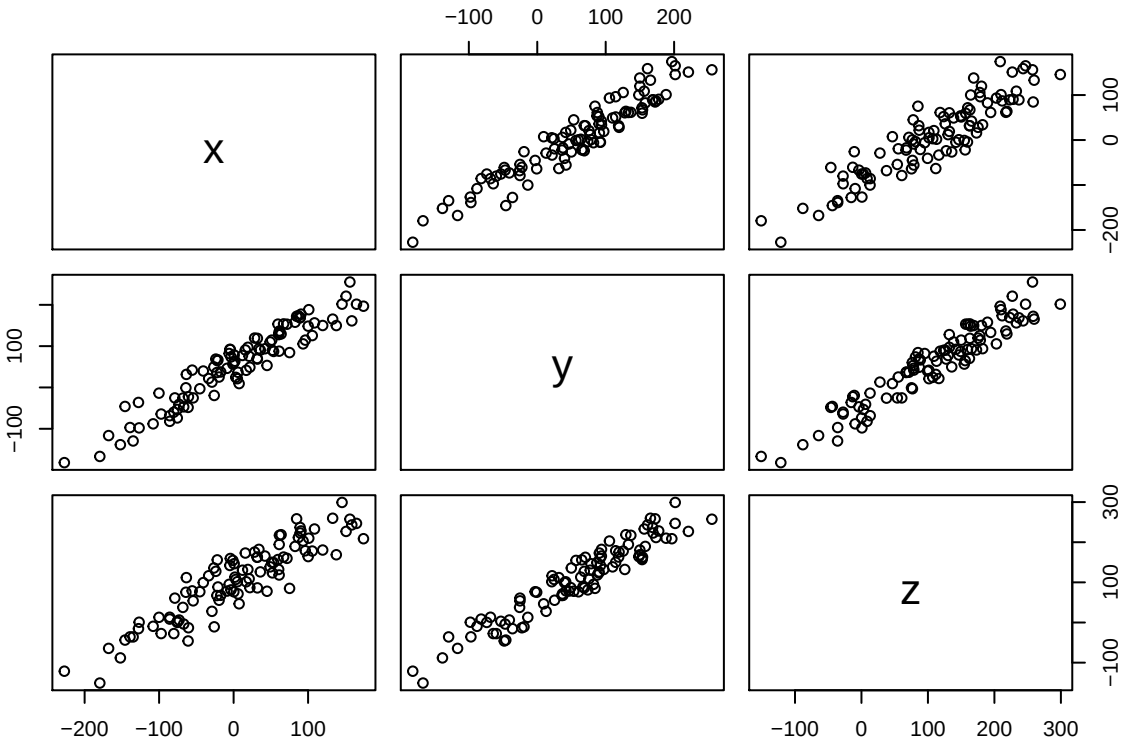


Todo 7

```
P <- seq(from=31,to=60, by=1)
Q <- matrix(data=seq(from=31, to=60, by=1), ncol=5)
```

Todo 8

```
y1 <- rnorm(100,0, 100)
y2 <- runif(100, min=0, max=100)
y3 <- runif(100, min=0, max=100)
t <- data.frame(x = c(y1), y = c(y1 + y2), z = c(y1 + y2 + y3))
plot(t)
```



Todo 9

1 plots the first column in a coloured plot, #2 plots column 2 in a similar way with different colours, and #3 plots column 3 with

Todo 10

```
d1 <- read.table(file="tst1.txt", header=TRUE)
new <- (d1 * 5)
write.table(new, file="tst2.txt", row.names=FALSE)
```

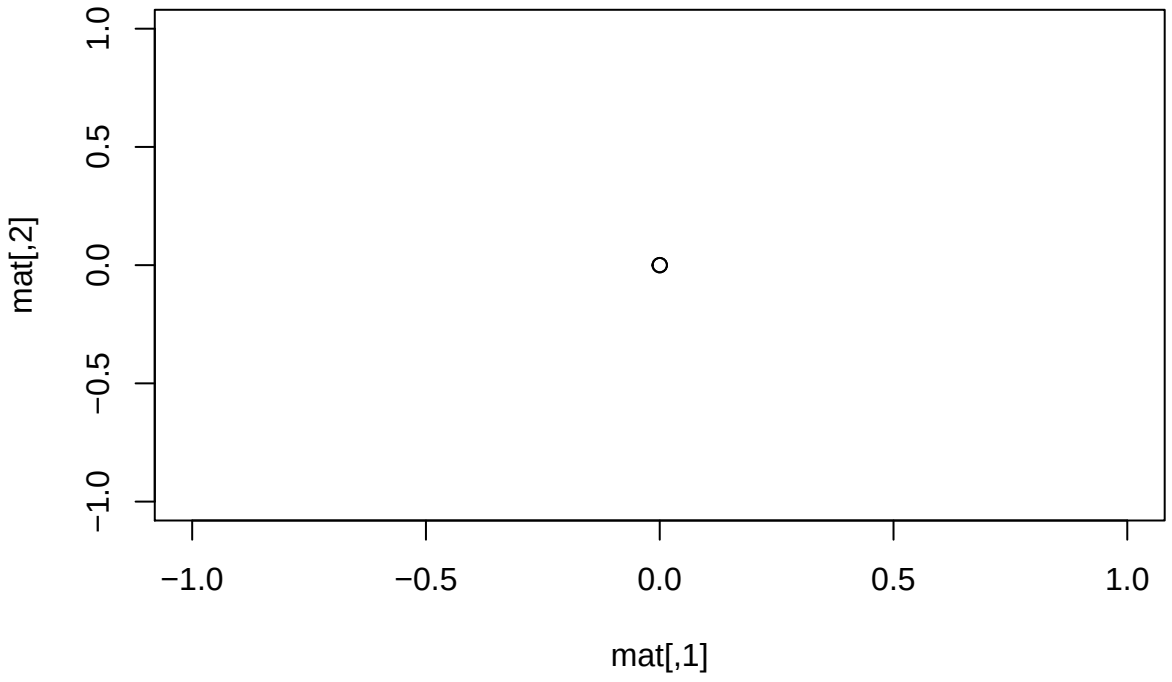
Todo 11

```
x1 <- runif(100, min=0, max=100)
value <- (sqrt(mean(x1)))
value <- c(sqrt(x1))
mean(value)
```

```
## [1] 6.79419
```

Todo 12

```
dates <- strptime(c("20180202", "20171225", "20180922"), format="%Y%m%d")
pres <- c(0, 4, 4)
m <- list(c(dates), c(pres))
mat <- matrix( unlist(m), nrow=length(m))
plot(mat)
```



Todo 13

```
vect <- seq(from=1, to=100, by=1)
for(i in vect) {
  if((i < 5) && (i > 90)){
    print(i * 5)
  } else {
    print(i * 0.1)
  }}
```

```
## [1] 0.1
## [1] 0.2
## [1] 0.3
## [1] 0.4
## [1] 0.5
## [1] 0.6
## [1] 0.7
## [1] 0.8
## [1] 0.9
## [1] 1
## [1] 1.1
## [1] 1.2
```

```
## [1] 1.3
## [1] 1.4
## [1] 1.5
## [1] 1.6
## [1] 1.7
## [1] 1.8
## [1] 1.9
## [1] 2
## [1] 2.1
## [1] 2.2
## [1] 2.3
## [1] 2.4
## [1] 2.5
## [1] 2.6
## [1] 2.7
## [1] 2.8
## [1] 2.9
## [1] 3
## [1] 3.1
## [1] 3.2
## [1] 3.3
## [1] 3.4
## [1] 3.5
## [1] 3.6
## [1] 3.7
## [1] 3.8
## [1] 3.9
## [1] 4
## [1] 4.1
## [1] 4.2
## [1] 4.3
## [1] 4.4
## [1] 4.5
## [1] 4.6
## [1] 4.7
## [1] 4.8
## [1] 4.9
## [1] 5
## [1] 5.1
## [1] 5.2
## [1] 5.3
## [1] 5.4
## [1] 5.5
## [1] 5.6
## [1] 5.7
## [1] 5.8
## [1] 5.9
## [1] 6
## [1] 6.1
## [1] 6.2
## [1] 6.3
## [1] 6.4
## [1] 6.5
## [1] 6.6
```

```
## [1] 6.7
## [1] 6.8
## [1] 6.9
## [1] 7
## [1] 7.1
## [1] 7.2
## [1] 7.3
## [1] 7.4
## [1] 7.5
## [1] 7.6
## [1] 7.7
## [1] 7.8
## [1] 7.9
## [1] 8
## [1] 8.1
## [1] 8.2
## [1] 8.3
## [1] 8.4
## [1] 8.5
## [1] 8.6
## [1] 8.7
## [1] 8.8
## [1] 8.9
## [1] 9
## [1] 9.1
## [1] 9.2
## [1] 9.3
## [1] 9.4
## [1] 9.5
## [1] 9.6
## [1] 9.7
## [1] 9.8
## [1] 9.9
## [1] 10
```

Todo 14

```
fun1 = function(arg1) {
  vect <- arg1
  for(i in vect) {
    if((i < 5) && (i > 90)){
      print(i * 5)
    } else {
      print(i * 0.1)
    }
  }
}
```

Bonus Todo, without a loop!

```
x <- seq(1, 100, by=1)
x <- ifelse(x < 5, x*5, ifelse(x>90, x*10, x*0.1))
print(x)
```

```
##   [1]    5.0   10.0   15.0   20.0    0.5    0.6    0.7    0.8    0.9    1.0
##  [11]    1.1    1.2    1.3    1.4    1.5    1.6    1.7    1.8    1.9    2.0
##  [21]    2.1    2.2    2.3    2.4    2.5    2.6    2.7    2.8    2.9    3.0
##  [31]    3.1    3.2    3.3    3.4    3.5    3.6    3.7    3.8    3.9    4.0
##  [41]    4.1    4.2    4.3    4.4    4.5    4.6    4.7    4.8    4.9    5.0
##  [51]    5.1    5.2    5.3    5.4    5.5    5.6    5.7    5.8    5.9    6.0
##  [61]    6.1    6.2    6.3    6.4    6.5    6.6    6.7    6.8    6.9    7.0
##  [71]    7.1    7.2    7.3    7.4    7.5    7.6    7.7    7.8    7.9    8.0
##  [81]    8.1    8.2    8.3    8.4    8.5    8.6    8.7    8.8    8.9    9.0
##  [91]  910.0  920.0  930.0  940.0  950.0  960.0  970.0  980.0  990.0 1000.0
```