Assignment 0

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1/29/2017

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A very Short introduction to R

The overall purpose of this assignment is to increase ones knowladge of the r programming language by doing the exercises found in the document "A (very) short introduction to R" by Paul Torfs & Claudia Brauer. Below can be found the code used to complete the to do exercises found within the introduction to R 3.1

```
((2014-2014)/(2014-1995))*100
```

```
## [1] 0
```

3.2

```
a <- 2014-2014
b <- 2014-1995
c <- 100
d <- (a/b)*c
d
```

```
## [1] 0
```

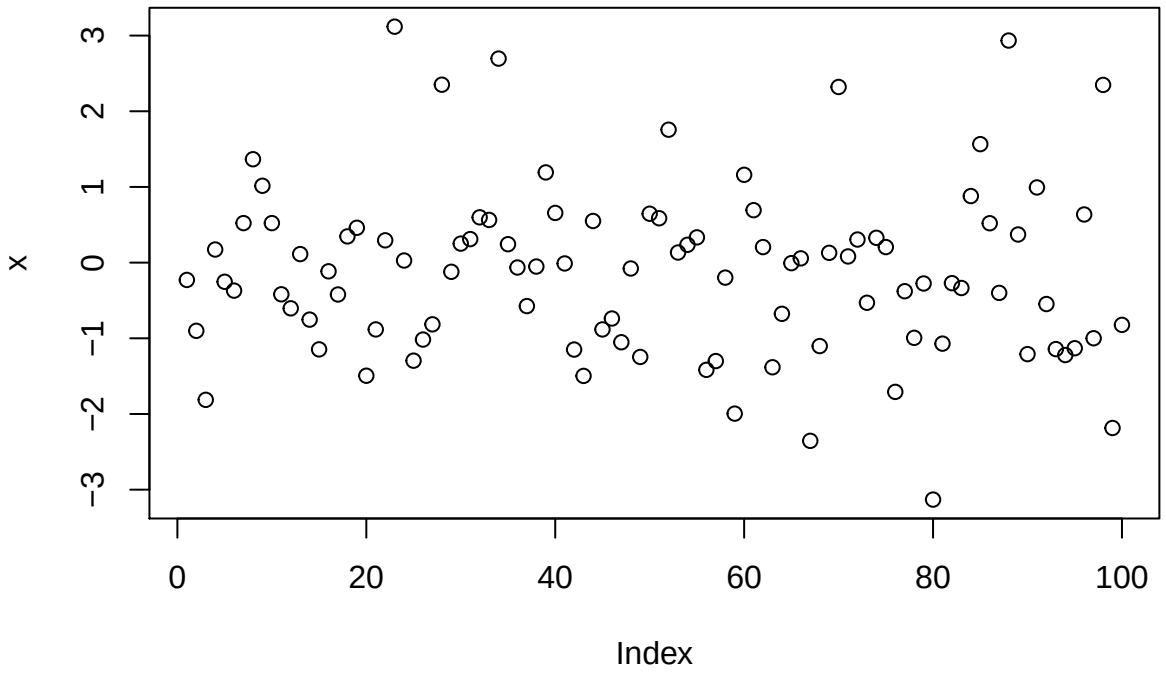
3.4

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

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

3.5

```
x = rnorm(100)
plot(x)
```

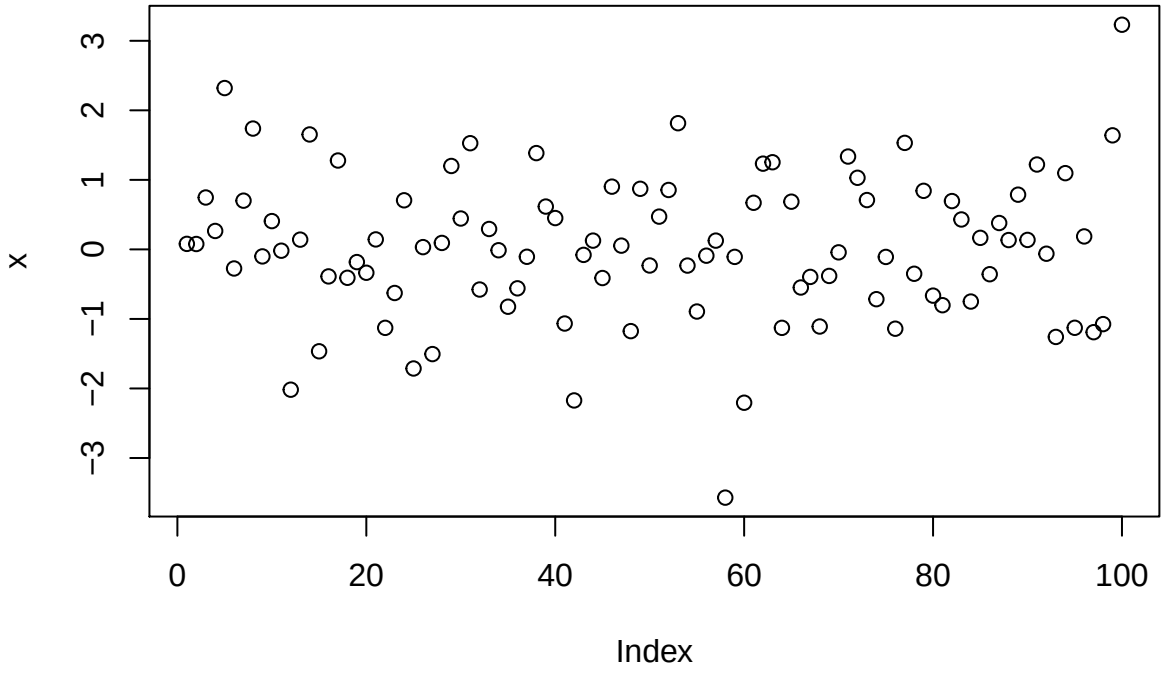


4

```
help(sqrt)
```

5

```
source("firstscript.R")
```



6.2

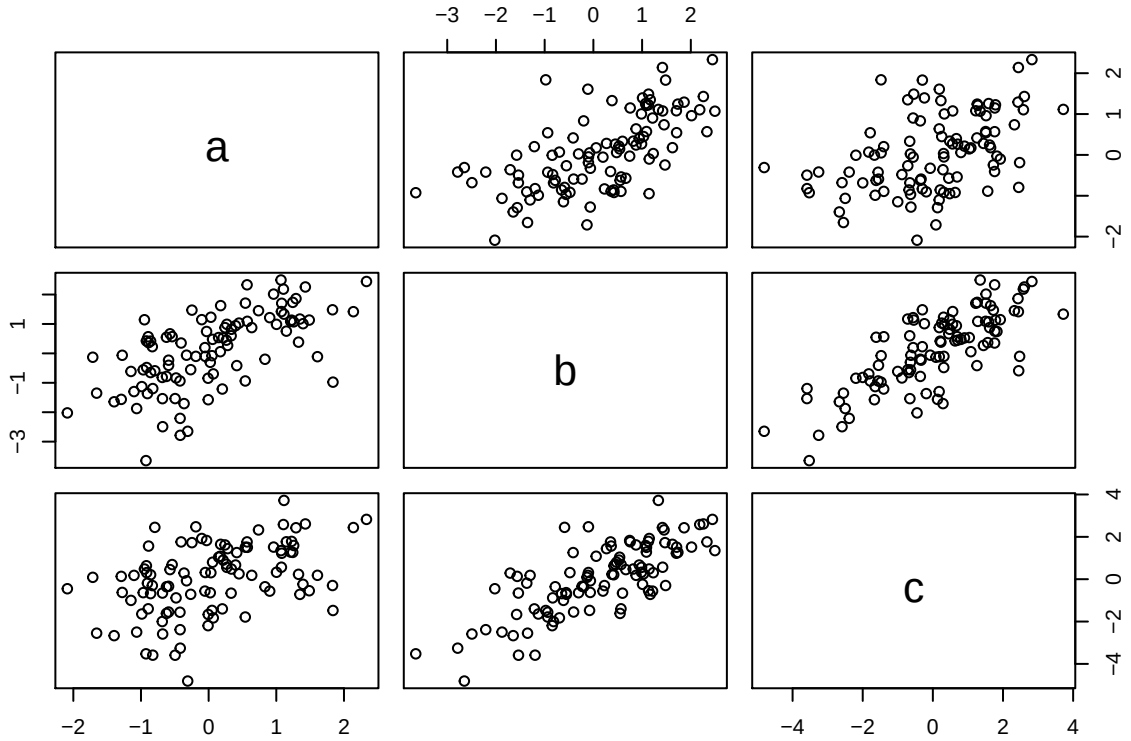
```
P <- seq(from=31, to=60, by=1)
Q <- matrix(P, ncol=5, nrow=6)
Q
```

```
##      [,1] [,2] [,3] [,4] [,5]
```

```
## [1,]   31   37   43   49   55
## [2,]   32   38   44   50   56
## [3,]   33   39   45   51   57
## [4,]   34   40   46   52   58
## [5,]   35   41   47   53   59
## [6,]   36   42   48   54   60
```

6.3

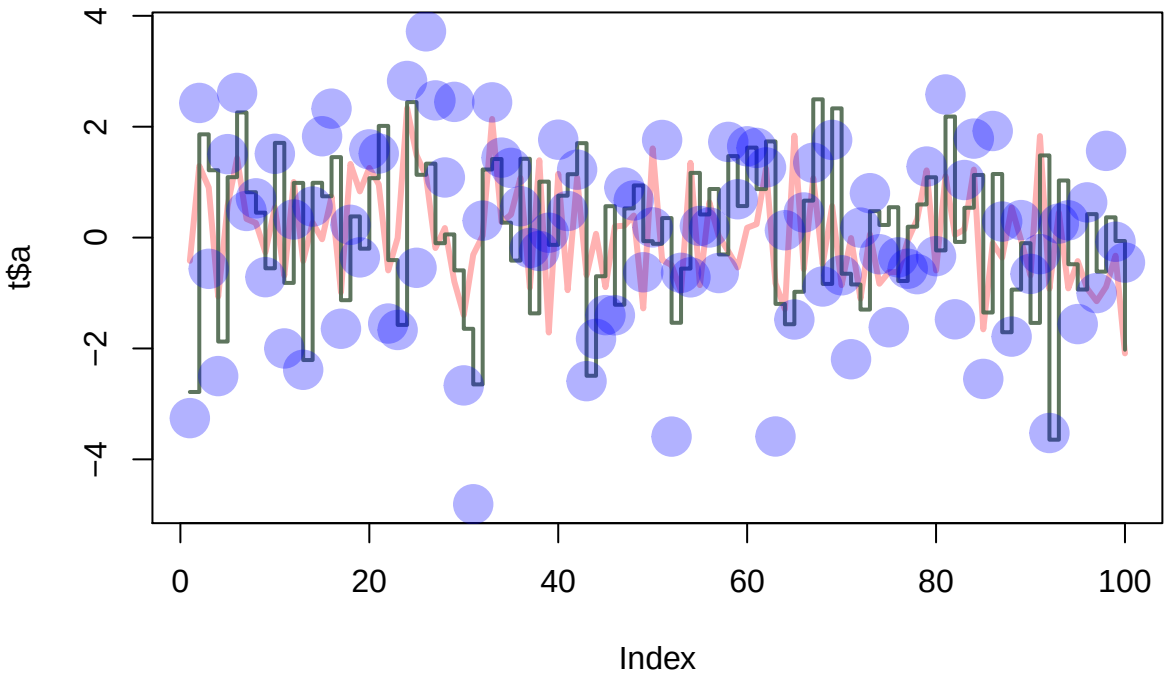
```
x1 <- rnorm(100)
x2 <- rnorm(100)
x3 <- rnorm(100)
t <- data.frame(a= x1, b= x1+x2, c= x1+x2+x3)
plot(t)
```



The results of the script run shows the plotting of 3 variables denoting 100 random numbers each. For each variable in the data frame are added to each other as the variables continue. The plot shows the result of the random number variable being added together.

7

```
plot(t$a, type="l", ylim=range(t),
 lwd=3, col=rgb(1,0,0,0.3))
lines(t$b, type="s", lwd=2,
 col=rgb(0.3,0.4,0.3,0.9))
points(t$c, pch=20, cex=4,
 col=rgb(0,0,1,0.3))
```



The meainging of the rgb variable denotes the color of certain aspects of the plot that is designated. The lwd variable denotes the width of the line within the plot. The variable pch denotes the type of symbol to use within the plot. The variable cex denotes the size of the symbols used within the plot.

8

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

9

```
v <- rnorm(100)
v2 <- sqrt(v)
```

```
## Warning in sqrt(v): NaNs produced
```

```
mean(v2)
```

```
## [1] NaN
```

```
v2
```

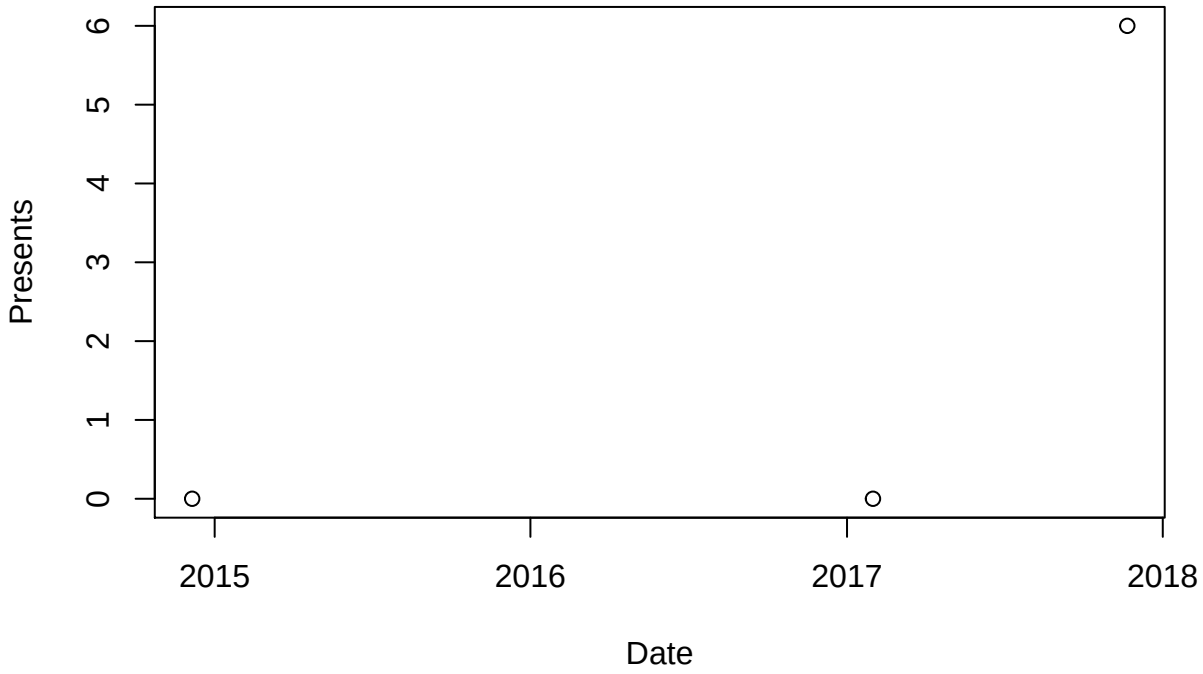
```
##   [1]        NaN 1.44373090        NaN 0.44158525 0.43302347 1.49833372
##   [7] 0.07477219        NaN 0.93425662 0.68115365 0.41658016 1.11830126
##  [13]        NaN        NaN        NaN 0.46116118 0.14212333 1.20012242
##  [19]        NaN 0.38180820        NaN        NaN        NaN 0.51081022
##  [25]        NaN 1.00389282        NaN        NaN 0.41509485 0.91560168
##  [31] 0.90968360        NaN 1.40128041        NaN        NaN 1.01138315
##  [37]        NaN 0.45156916 0.36933036        NaN 1.25835745 0.56676072
##  [43] 0.53050935 0.96908710 1.14481261 1.15288283 0.95933736        NaN
##  [49]        NaN        NaN        NaN        NaN        NaN        NaN
##  [55] 0.67224525        NaN 1.00347676 1.07739161 0.30151777        NaN
##  [61]        NaN 0.46981495 0.74424272        NaN 1.20673227        NaN
##  [67] 0.93633669 0.84555939 0.25850033        NaN        NaN 0.78368607
##  [73]        NaN 0.42799043        NaN 1.03878606        NaN 0.87244855
```

```
##  [79] 1.22414394        NaN 0.51742282 0.73614116 1.08013533 0.71205289
##  [85]        NaN 0.55951654 0.12968018 0.41725128 1.18716872        NaN
##  [91]        NaN 0.65478130 0.18725898        NaN 0.93973816 0.43192805
##  [97]        NaN 0.90121976 1.02145623        NaN
```

The results display all the result whether or not they can be calculated. If they can be calculated then they are displayed, if the numbers cannot be calculated then the results are displayed as NaN.

10.2

```
Date <- strptime( c("20170131","20141206","20171121"),format="%Y%m%d")
Presents <- c(0,0,6)
plot(Date,Presents)
```



11.2

```
num <- seq(from = 1, to = 100, by=1)
f=c()
for(l in 1:100)
{
if(num[l]<5 | num[l]>90)
  {f[l]=num[l]*10}
else
  {f[l]=num[l]*0.1}
}
f
```

```
##   [1]   10.0   20.0   30.0   40.0    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
```

11.3

```
fun1 = function(arg1)
{len = length(arg1)
  for(q in 1:len)
{if (arg1[q] < 5 | arg1[q] > 90)
{arg1[q] = arg1[q] * 10}
else
{arg1[q] = arg1[q] * 0.1}}
  return (arg1)
}
m=4:32
fun1(arg1=m)
```

```
##  [1] 40.0  0.5  0.6  0.7  0.8  0.9  1.0  1.1  1.2  1.3  1.4  1.5  1.6  1.7
## [15]  1.8  1.9  2.0  2.1  2.2  2.3  2.4  2.5  2.6  2.7  2.8  2.9  3.0  3.1
## [29]  3.2
```

11.3 Footer

```
fun1 = function(arg1)
{
{if (arg1 < 5 | arg1 > 90)
{arg1 = arg1 * 10}
ifelse
{arg1 = arg1 * 0.1}}
  return (arg1)
}
m=1:100
fun1(arg1=m)
```

```
## Warning in if (arg1 < 5 | arg1 > 90) {: the condition has length > 1 and
## only the first element will be used
```

```
##   [1]   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17
##  [18]  18  19  20  21  22  23  24  25  26  27  28  29  30  31  32  33  34
##  [35]  35  36  37  38  39  40  41  42  43  44  45  46  47  48  49  50  51
##  [52]  52  53  54  55  56  57  58  59  60  61  62  63  64  65  66  67  68
##  [69]  69  70  71  72  73  74  75  76  77  78  79  80  81  82  83  84  85
##  [86]  86  87  88  89  90  91  92  93  94  95  96  97  98  99 100
```

Work Cited

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Torfs, Paul, and Claudia Brauer. “A (very) Short Introduction to R.” A (very) Short Introduction to R (n.d.): 1-12. Cran.r-preogect.org. Rstudio, 3 Mar. 2014. Web. 1 Feb. 2017.