

Assignment 1

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Part 1

1.1

```
random.one <- floor(runif(10, min=1, max=100))
random.two <- floor(runif(10, min=1, max=100))
random.append <- append(random.one, random.two)
mean(random.append)
ifelse(random.append > mean(random.append), "True", "False")
```

The screenshot shows the RStudio interface with the following components:

- Source Editor:** Contains the R script code from the assignment.
- Console:** Shows the output of the code execution, including the mean value and the results of the `ifelse` function.
- Environment:** Displays the objects created in the global environment.

Source Editor Code:

```
1 random.one <- floor(runif(10, min=1, max=100))
2 random.two <- floor(runif(10, min=1, max=100))
3 random.append <- append(random.one, random.two)
4 mean(random.append)
5 ifelse(random.append > mean(random.append), "True", "False")
6
```

Console Output:

```
> random.one <- floor(runif(10, min=1, max=100))
> random.two <- floor(runif(10, min=1, max=100))
> random.append <- append(random.one, random.two)
> mean(random.append)
[1] 51.2
> ifelse(random.append > mean(random.append), "True", "False")
[1] "True" "True" "True" "False" "False" "False" "True"
[8] "True" "True" "True" "True" "True" "True" "False"
[15] "False" "False" "True" "False" "False" "True"
>
```

Environment Panel:

Object	Class	Attributes	Values
random.append	num	[1:20]	85 55 60 16 6 37 75...
random.one	num	[1:10]	85 55 60 16 6 37 75...
random.two	num	[1:10]	97 85 65 14 45 2 87...

1.2

```
random.num <- floor(runif(100, min=1, max=101))
M <- matrix(random.num, nrow = 10, ncol = 10)
transpose <- t(M)
print(transpose)
for (i in transpose)
{for (j in M)
{
N <- print(i * j);
}
}
"N <- transpose %*% M"
```

The screenshot displays the RStudio environment with the following components:

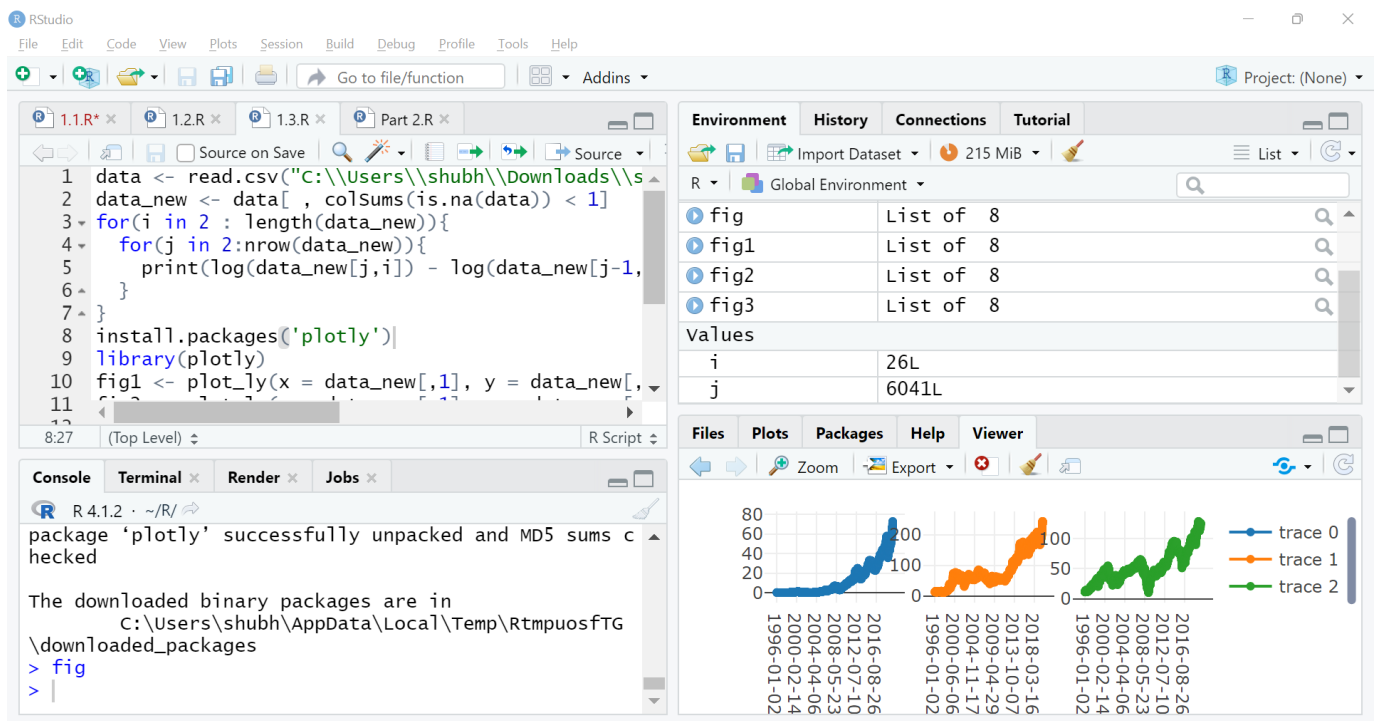
- Source Editor:** Contains the R script code from the previous block.
- Environment:** Shows the Global Environment with variables M, transpose, i, j, N, and random.num. The values for i and j are 89, and for N is 7921.
- Console:** Shows the output of the code execution, including the transpose matrix and the final print statement.
- Plots:** The Plots pane is empty, displaying the text "figure margins too large".

The R console output is as follows:

```
R 4.1.2 · ~/R/
[1] 2759
[1] 6942
[1] 4361
[1] 6141
[1] 7921
> "N <- transpose %*% M"
[1] "N <- transpose %*% M"
>
```

1.3

```
data <- read.csv("C:\\Users\\shubh\\Downloads\\stock_data.csv")
data_new <- data[, colSums(is.na(data)) < 1]
for(i in 2 : length(data_new)){
  for(j in 2:nrow(data_new)){
    print(log(data_new[j,i]) - log(data_new[j-1,i]))
  }
}
install.packages('plotly')
library(plotly)
fig1 <- plot_ly(x = data_new[,1], y = data_new[,2], text = 'AAPL', type =
'scatter', mode = 'lines+markers')
fig2 <- plot_ly(x = data_new[,1], y = data_new[,3], type = 'scatter', mode =
'lines+markers')
fig3 <- plot_ly(x = data_new[,1], y = data_new[,4], type = 'scatter', mode =
'lines+markers')
fig <- fig %>% add_trace(y = ~Tree2, name = 'Tree 2')
fig <- fig %>% add_trace(y = ~Tree3, name = 'Tree 3')
fig <- subplot(fig1,fig2,fig3)%>%
  layout(title=list(text=c("AAPL","AMGN","AXP")))
fig
```



Part 2

```
install.packages('quantmod')  
library(quantmod)
```

```
Dailystockprice <- get(getSymbols("AMZN", from = "2020-01-01", to =  
"2020-09-01"))  
write.csv(Dailystockprice,"Amazonprice" )
```

```
amazon<-diff(log(AMZN$AMZN.Adjusted))  
head(amazon)  
mean_amazon <- mean(amazon, na.rm= TRUE)  
sd_amazon <- sd(amazon, na.rm = TRUE)  
median_amazon <- median(amazon, na.rm = TRUE)  
table(amazon >= 0.01 & amazon <= 0.015)  
hist(amazon,breaks=50)
```

