CSE3020 – Data Visualization (ELA), Winter Semester 2021-2022

Lab Assignment IA1 – Slot L43-L44

By: Jonathan Rufus Samuel (20BCT0332) Dos: 18.01.2022

Lab Assignment – IA1

Note on Software used for following Visualizations: (R-Studio and the R language)

RStudio is an Integrated Development Environment (IDE) for R, a programming language for statistical computing and graphics. R is an integrated suite of software facilities for data manipulation, calculation and graphical display. It includes:

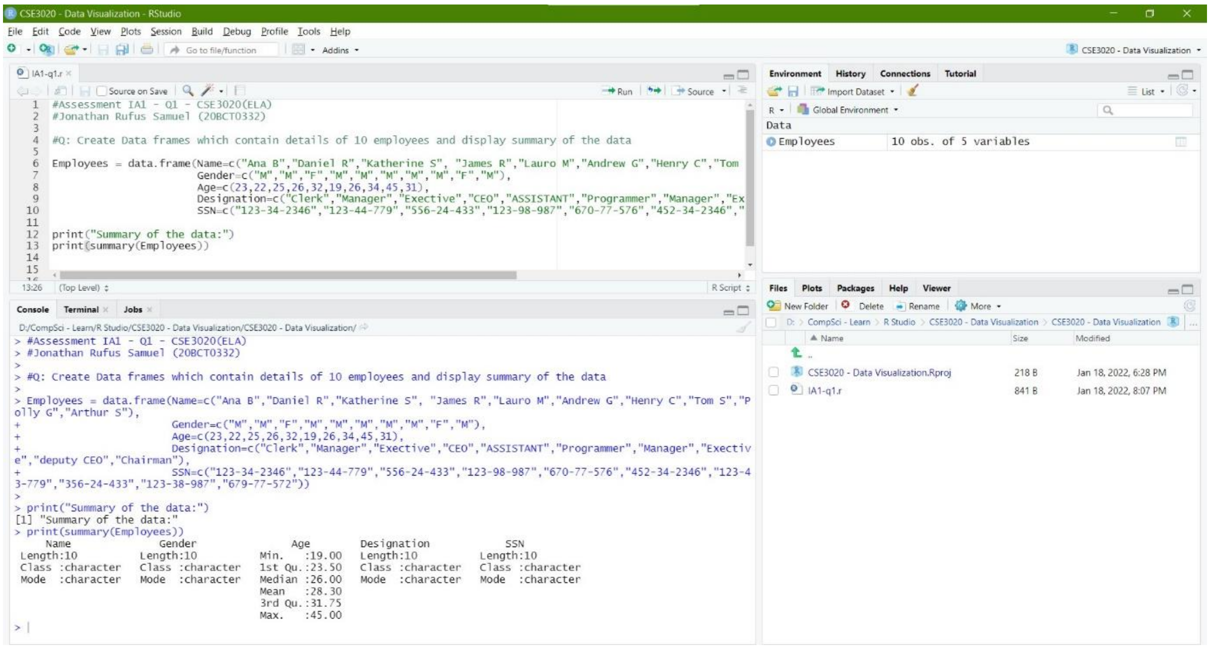
- an effective data handling and storage facility,
- a suite of operators for calculations on arrays, in particular matrices,
- a large, coherent, integrated collection of intermediate tools for data analysis,
- graphical facilities for data analysis and display either on-screen or on hardcopy, and
- a well-developed, simple and effective programming language which includes conditionals, loops, user-defined recursive functions and input and output facilities.

Q1) Create Data frames which contain details of 10 employees and display summary of the data:

Code:

```
#Assessment IA1 - Q1 - CSE3020(ELA)
#Jonathan Rufus Samuel (20BCT0332)

#Q1: Create Data frames which contain details of 10 employees and display summary of the data

Employees = data.frame(Name=c("Ana B","Daniel R","Katherine S", "James R","Lauro M","Andrew G","Henry C","Tom S","Polly G","Arthur S"),
                Gender=c("M","M","F","M","M","M","M","M","F","M"),
                Age=c(23,22,25,26,32,19,26,34,45,31),

Designation=c("Clerk","Manager","Exective","CEO","ASSISTANT","Programmer","Manager","Exective","deputy CEO","Chairman"),
                SSN=c("123-34-2346","123-44-779","556-24-433","123-98-987","670-77-576","452-34-2346","123-43-779","356-24-433","123-38-987","679-77-572"))

print("Summary of the data:")
print(summary(Employees))
```

Output:


CSE3020 - Data Visualization - RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function
Addins
IA1-q1.r
Source on Save
Run
Source
Environment History Connections Tutorial
Import Dataset
Global Environment
List
Files Plots Packages Help Viewer
New Folder Delete Rename More
Console Terminal Jobs
R Script

```
#Assessment IA1 - Q1 - CSE3020(ELA)
#Jonathan Rufus Samuel (20BCT0332)

#Q: Create Data frames which contain details of 10 employees and display summary of the data

Employees = data.frame(Name=c("Ana B","Daniel R","Katherine S", "James R","Lauro M","Andrew G","Henry C","Tom
                       Gender=c("M","M","F","M","M","M","M","M","F","M"),
                       Age=c(23,22,25,26,32,19,26,34,45,31),
                       Designation=c("Clerk","Manager","Exective","CEO","ASSISTANT","Programmer","Manager","Ex
                       SSN=c("123-34-2346","123-44-779","556-24-433","123-98-987","670-77-576","452-34-2346","

print("Summary of the data:")
print(summary(Employees))
```

13:26 (Top Level)

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```
> #Assessment IA1 - Q1 - CSE3020(ELA)
> #Jonathan Rufus Samuel (20BCT0332)
>
> #Q: Create Data frames which contain details of 10 employees and display summary of the data
>
> Employees = data.frame(Name=c("Ana B","Daniel R","Katherine S", "James R","Lauro M","Andrew G","Henry C","Tom S","P
olly G","Arthur S"),
+                        Gender=c("M","M","F","M","M","M","M","M","F","M"),
+                        Age=c(23,22,25,26,32,19,26,34,45,31),
+                        Designation=c("Clerk","Manager","Exective","CEO","ASSISTANT","Programmer","Manager","Exectiv
e","deputy CEO","Chairman"),
+                        SSN=c("123-34-2346","123-44-779","556-24-433","123-98-987","670-77-576","452-34-2346","123-4
3-779","356-24-433","123-38-987","679-77-572"))
>
> print("Summary of the data:")
[1] "Summary of the data:"
> print(summary(Employees))
     Name              Gender               Age         Designation           SSN           
 Length:10          Length:10          Min.   :19.00   Length:10          Length:10         
 Class :character   Class :character   1st Qu.:23.50   Class :character   Class :character  
 Mode  :character   Mode  :character   Median :26.00   Mode  :character   Mode  :character  
                                       Mean   :28.30                                        
                                       3rd Qu.:31.75                                        
                                       Max.   :45.00                                        
> |
```

Data

Employees 10 obs. of 5 variables

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..		
CSE3020 - Data Visualization.Rproj	218 B	Jan 18, 2022, 6:28 PM
IA1-q1.r	841 B	Jan 18, 2022, 8:07 PM

Q2) Write a R program to get the details of any 5 objects in memory:

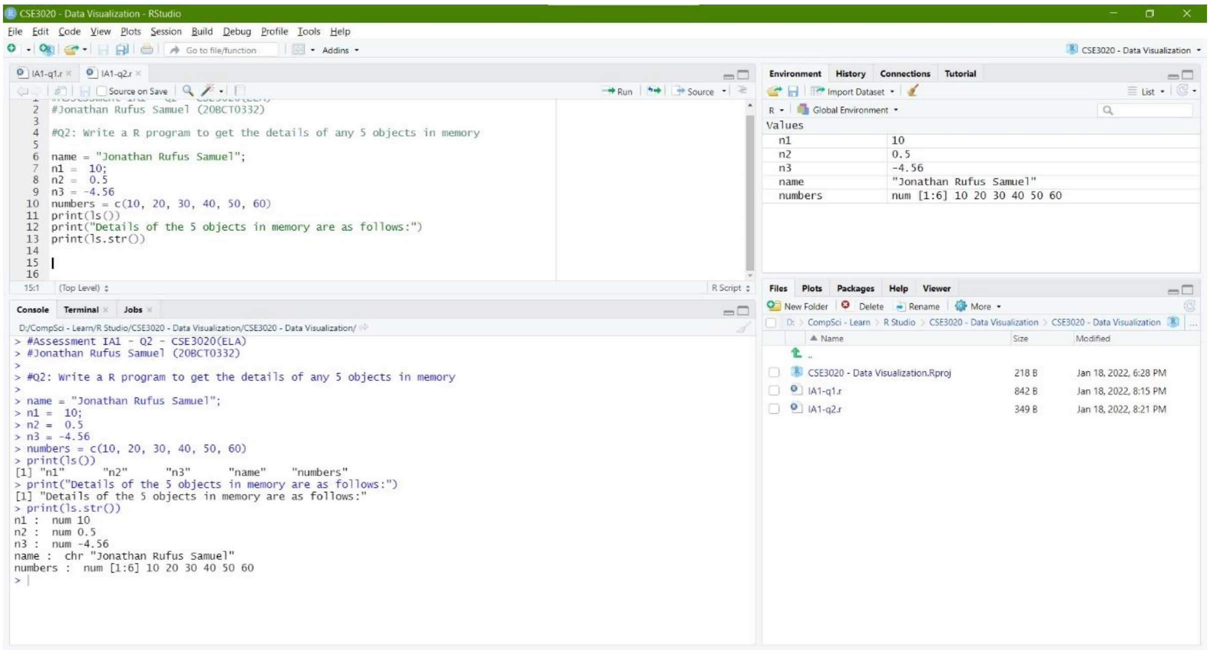
Code:

```
#Assessment IA1 - Q2 - CSE3020(ELA)
#Jonathan Rufus Samuel (20BCT0332)

#Q2: Write a R program to get the details of any 5 objects in memory

name = "Jonathan Rufus Samuel";
n1 =  10;
n2 =  0.5
n3 = -4.56
numbers = c(10, 20, 30, 40, 50, 60)
print(ls())
print("Details of the 5 objects in memory are as follows:")
print(ls.str())
```

Output:



```
#Jonathan Rufus Samuel (20BCT0332)

#Q2: Write a R program to get the details of any 5 objects in memory

name = "Jonathan Rufus Samuel";
n1 =  10;
n2 =  0.5
n3 = -4.56
numbers = c(10, 20, 30, 40, 50, 60)
print(ls())
print("Details of the 5 objects in memory are as follows:")
print(ls.str())
```

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```
> #Assessment IA1 - Q2 - CSE3020(ELA)
> #Jonathan Rufus Samuel (20BCT0332)
>
> #Q2: Write a R program to get the details of any 5 objects in memory
>
> name = "Jonathan Rufus Samuel";
> n1 =  10;
> n2 =  0.5
> n3 = -4.56
> numbers = c(10, 20, 30, 40, 50, 60)
> print(ls())
[1] "n1"      "n2"      "n3"      "name"    "numbers"
> print("Details of the 5 objects in memory are as follows:")
[1] "Details of the 5 objects in memory are as follows:"
> print(ls.str())
n1 :  num 10
n2 :  num 0.5
n3 :  num -4.56
name :  chr "Jonathan Rufus Samuel"
numbers :  num [1:6] 10 20 30 40 50 60
> |
```

```
Values
 n1          10
 n2          0.5
 n3          -4.56
 name        "Jonathan Rufus Samuel"
 numbers     num [1:6] 10 20 30 40 50 60
```

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Name	Size	Modified
..		
CSE3020 - Data Visualization.Rproj	218 B	Jan 18, 2022, 6:28 PM
IA1-q1.r	842 B	Jan 18, 2022, 8:15 PM
IA1-q2.r	349 B	Jan 18, 2022, 8:21 PM

Q3) Write a R program to print the multiplication table of a number from 1 to 15:

Code:

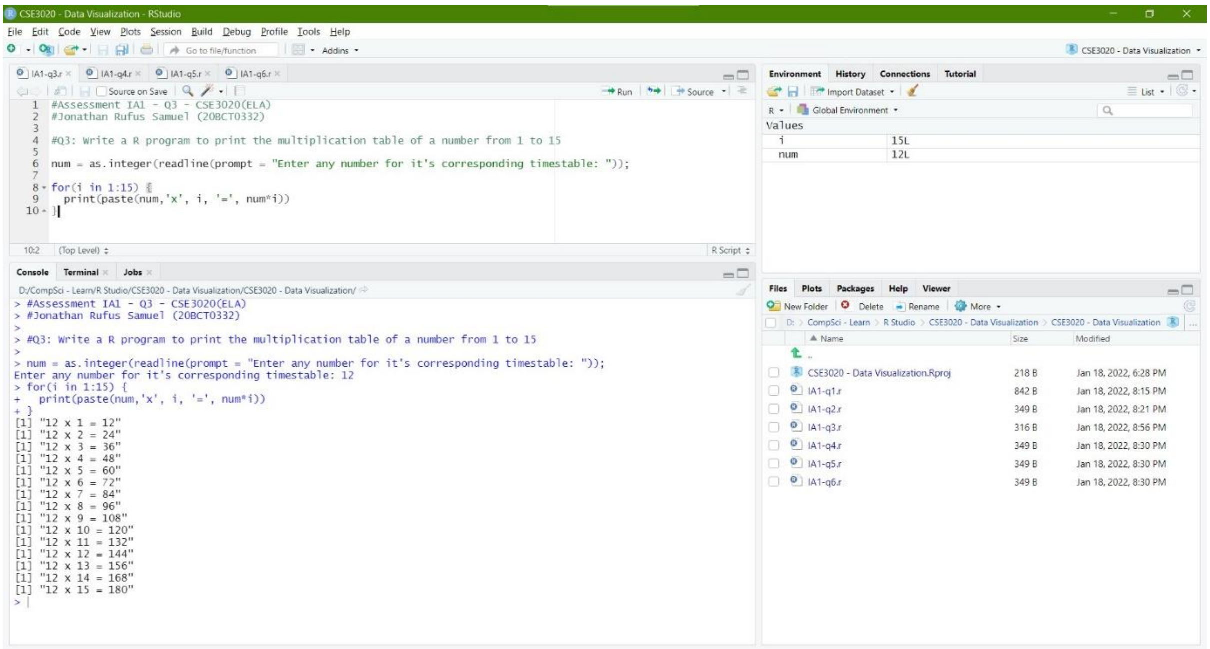
```
#Assessment IA1 - Q3 - CSE3020(ELA)
#Jonathan Rufus Samuel (20BCT0332)

#Q3: Write a R program to print the multiplication table of a number from 1 to 15

num = as.integer(readline(prompt = "Enter any number for it's corresponding timestable: "));

for(i in 1:15) {
  print(paste(num,'x', i, '=', num*i))
}
```

Output:



```
#Assessment IA1 - Q3 - CSE3020(ELA)
#Jonathan Rufus Samuel (20BCT0332)

#Q3: Write a R program to print the multiplication table of a number from 1 to 15

num = as.integer(readline(prompt = "Enter any number for it's corresponding timestable: "));

for(i in 1:15) {
  print(paste(num,'x', i, '=', num*i))
}
```

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```
> #Assessment IA1 - Q3 - CSE3020(ELA)
> #Jonathan Rufus Samuel (20BCT0332)
>
> #Q3: Write a R program to print the multiplication table of a number from 1 to 15
>
> num = as.integer(readline(prompt = "Enter any number for it's corresponding timestable: "));
Enter any number for it's corresponding timestable: 12
> for(i in 1:15) {
+   print(paste(num,'x', i, '=', num*i))
+ }
[1] "12 x 1 = 12"
[1] "12 x 2 = 24"
[1] "12 x 3 = 36"
[1] "12 x 4 = 48"
[1] "12 x 5 = 60"
[1] "12 x 6 = 72"
[1] "12 x 7 = 84"
[1] "12 x 8 = 96"
[1] "12 x 9 = 108"
[1] "12 x 10 = 120"
[1] "12 x 11 = 132"
[1] "12 x 12 = 144"
[1] "12 x 13 = 156"
[1] "12 x 14 = 168"
[1] "12 x 15 = 180"
> 
```

Values

i	15L
num	12L

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..		
CSE3020 - Data Visualization.Rproj	218 B	Jan 18, 2022, 6:28 PM
IA1-q1.r	842 B	Jan 18, 2022, 8:15 PM
IA1-q2.r	349 B	Jan 18, 2022, 8:21 PM
IA1-q3.r	316 B	Jan 18, 2022, 8:56 PM
IA1-q4.r	349 B	Jan 18, 2022, 8:30 PM
IA1-q5.r	349 B	Jan 18, 2022, 8:30 PM
IA1-q6.r	349 B	Jan 18, 2022, 8:30 PM

Q4) Write a R program to print the numbers from 1 to 100 and print "DATA" for multiples of 2, print "VISUALIZATION" for multiples of 4, and print "DATA VISUALIZATION" for multiples of both:

Code:

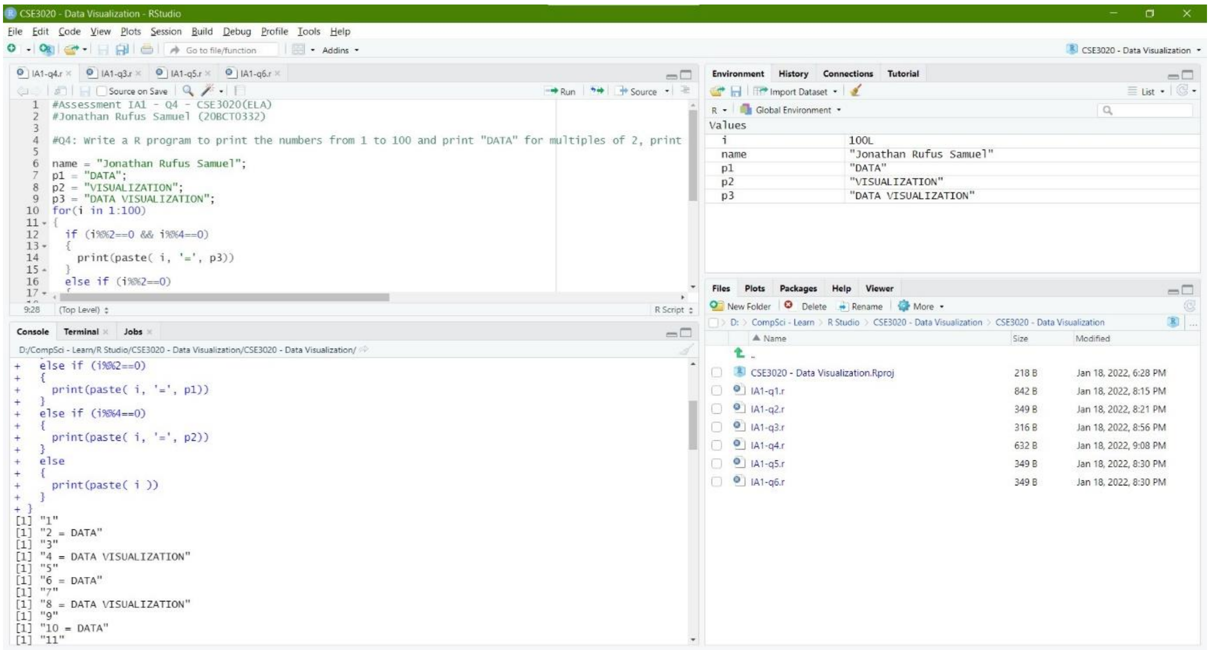
```
#Assessment IA1 - Q4 - CSE3020(ELA)
#Jonathan Rufus Samuel (20BCT0332)

#Q4: Write a R program to print the numbers from 1 to 100 and print "DATA" for multiples
of 2, print "VISUALIZATION" for multiples of 4, and print "DATA VISUALIZATION" for
multiples of both

name = "Jonathan Rufus Samuel";
p1 = "DATA";
p2 = "VISUALIZATION";
p3 = "DATA VISUALIZATION";
for(i in 1:100)
{
 if (i%%2==0 && i%%4==0)
 {
  print(paste( i, '=', p3))
 }
 else if (i%%2==0)
 {
  print(paste( i, '=', p1))
 }
 else if (i%%4==0)
 {
  print(paste( i, '=', p2))
 }
```

```
  else
  {
    print(paste( i ))
  }
}
```

Output:



```
#Assessment IA1 - Q4 - CSE3020(ELA)
#Jonathan Rufus Samuel (20BCT0332)

#Q4: Write a R program to print the numbers from 1 to 100 and print "DATA" for multiples of 2, print

name = "Jonathan Rufus Samuel";
p1 = "DATA";
p2 = "VISUALIZATION";
p3 = "DATA VISUALIZATION";
for(i in 1:100)
{
  if (i%%2==0 && i%%4==0)
  {
    print(paste( i, '=', p3))
  }
  else if (i%%2==0)
```

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```
+   else if (i%%2==0)
+   {
+     print(paste( i, '=', p1))
+   }
+   else if (i%%4==0)
+   {
+     print(paste( i, '=', p2))
+   }
+   else
+   {
+     print(paste( i ))
+   }
+ }
[1] "1"
[1] "2 = DATA"
[1] "3"
[1] "4 = DATA VISUALIZATION"
[1] "5"
[1] "6 = DATA"
[1] "7"
[1] "8 = DATA VISUALIZATION"
[1] "9"
[1] "10 = DATA"
[1] "11"
```

Values

i	100L
name	"Jonathan Rufus Samuel"
p1	"DATA"
p2	"VISUALIZATION"
p3	"DATA VISUALIZATION"

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IA1-q2.r	349 B	Jan 18, 2022, 8:21 PM
IA1-q3.r	316 B	Jan 18, 2022, 8:56 PM
IA1-q4.r	632 B	Jan 18, 2022, 9:08 PM
IA1-q5.r	349 B	Jan 18, 2022, 8:30 PM
IA1-q6.r	349 B	Jan 18, 2022, 8:30 PM

Q5) Create an empty factor vector, append values in it and find the sum, mean, product of vector elements using R. Also extract every nth element of the vector:

Code:

```
#Assessment IA1 - Q5 - CSE3020(ELA)
#Jonathan Rufus Samuel (20BCT0332)

#Q5: Create an empty factor vector, append values in it and find the sum, mean, product of
vector elements using R. Also extract every nth element of the vector:

sum=0
product=1

#New empty factor vector a
a = c()
print(a)

# appending numbers from 1 to 15
a=1:15
```

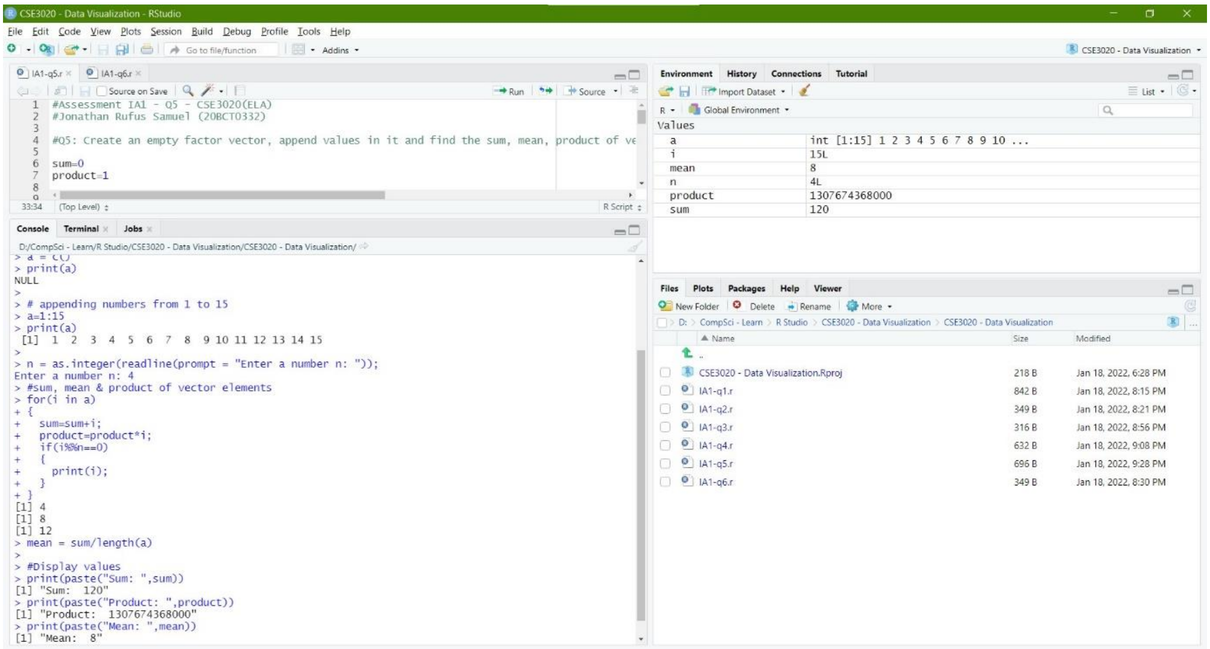
```
print(a)

n = as.integer(readline(prompt = "Enter a number n: "));

#sum, mean & product of vector elements
for(i in a)
{
  sum=sum+i;
  product=product*i;
  if(i%%n==0)
  {
    print(i);
  }
}
mean = sum/length(a)

#Display values
print(paste("Sum: ",sum))
print(paste("Product: ",product))
print(paste("Mean: ",mean))
```

Output:



```
#Assessment IA1 - Q5 - CSE3020(ELA)
#Jonathan Rufus Samuel (20BCT0332)

#Q5: Create an empty factor vector, append values in it and find the sum, mean, product of ve

sum=0
product=1
```

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```
> a = c()
> print(a)
NULL
>
> # appending numbers from 1 to 15
> a=1:15
> print(a)
 [1]  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15
>
> n = as.integer(readline(prompt = "Enter a number n: "));
Enter a number n: 4
> #sum, mean & product of vector elements
> for(i in a)
+ {
+   sum=sum+i;
+   product=product*i;
+   if(i%%n==0)
+   {
+     print(i);
+   }
+ }
[1] 4
[1] 8
[1] 12
> mean = sum/length(a)
>
> #Display values
> print(paste("Sum: ",sum))
[1] "Sum:  120"
> print(paste("Product: ",product))
[1] "Product:  1307674368000"
> print(paste("Mean: ",mean))
[1] "Mean:  8"
```

Values

a	int [1:15] 1 2 3 4 5 6 7 8 9 10 ...
i	15L
mean	8
n	4L
product	1307674368000
sum	120

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..		
CSE3020 - Data Visualization.Rproj	218 B	Jan 18, 2022, 6:28 PM
IA1-q1.r	842 B	Jan 18, 2022, 8:15 PM
IA1-q2.r	349 B	Jan 18, 2022, 8:21 PM
IA1-q3.r	316 B	Jan 18, 2022, 8:56 PM
IA1-q4.r	632 B	Jan 18, 2022, 9:08 PM
IA1-q5.r	696 B	Jan 18, 2022, 9:28 PM
IA1-q6.r	349 B	Jan 18, 2022, 8:30 PM

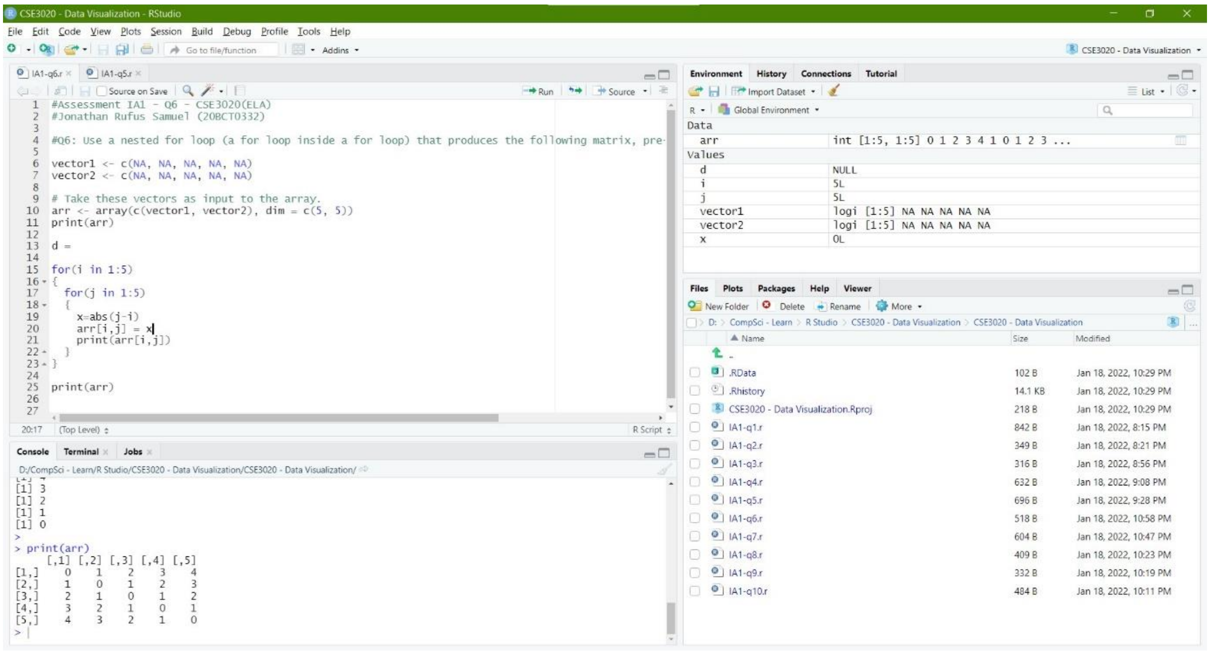
Q6) Use a nested for loop (a for loop inside a for loop) that produces the following matrix, pre-allocate the matrix with NA values:

0 1 2 3 4
1 0 1 2 3
2 1 0 1 2
3 2 1 0 1
4 3 2 1 0

Code:

```
#Assessment IA1 - Q6 - CSE3020(ELA)
#Jonathan Rufus Samuel (20BCT0332)

#Q6: Use a nested for loop (a for loop inside a for loop) that produces the following matrix,
pre-allocate the matrix with NA values

vector1 <- c(NA, NA, NA, NA, NA)
vector2 <- c(NA, NA, NA, NA, NA)

# Take these vectors as input to the array.
arr <- array(c(vector1, vector2), dim = c(5, 5))
print(arr)

d =

for(i in 1:5)
{
 for(j in 1:5)
 {
   x=abs(j-i)
   arr[i,j] = x
   print(arr[i,j])
 }
}

print(arr)
```

Output:



```
#Assessment IA1 - Q6 - CSE3020(ELA)
#Jonathan Rufus Samuel (20BCT0332)

#Q6: Use a nested for loop (a for loop inside a for loop) that produces the following matrix, pre-

vector1 <- c(NA, NA, NA, NA, NA)
vector2 <- c(NA, NA, NA, NA, NA)

# Take these vectors as input to the array.
arr <- array(c(vector1, vector2), dim = c(5, 5))
print(arr)

d =

for(i in 1:5)
{
  for(j in 1:5)
  {
    x=abs(j-i)
    arr[i,j] = x
    print(arr[i,j])
  }
}

print(arr)
```

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```
[1] 3
[1] 2
[1] 1
[1] 0
>
> print(arr)
     [,1] [,2] [,3] [,4] [,5]
[1,]    0    1    2    3    4
[2,]    1    0    1    2    3
[3,]    2    1    0    1    2
[4,]    3    2    1    0    1
[5,]    4    3    2    1    0
> |
```

Data

arr	int [1:5, 1:5] 0 1 2 3 4 1 0 1 2 3 ...

Values

d	NULL
i	5L
j	5L
vector1	logi [1:5] NA NA NA NA NA
vector2	logi [1:5] NA NA NA NA NA
x	0L

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Name	Size	Modified
..		
.RData	102 B	Jan 18, 2022, 10:29 PM
.Rhistory	14.1 KB	Jan 18, 2022, 10:29 PM
CSE3020 - Data Visualization.Rproj	218 B	Jan 18, 2022, 10:29 PM
IA1-q1.r	842 B	Jan 18, 2022, 8:15 PM
IA1-q2.r	349 B	Jan 18, 2022, 8:21 PM
IA1-q3.r	316 B	Jan 18, 2022, 8:56 PM
IA1-q4.r	632 B	Jan 18, 2022, 9:08 PM
IA1-q5.r	696 B	Jan 18, 2022, 9:28 PM
IA1-q6.r	518 B	Jan 18, 2022, 10:58 PM
IA1-q7.r	604 B	Jan 18, 2022, 10:47 PM
IA1-q8.r	409 B	Jan 18, 2022, 10:23 PM
IA1-q9.r	332 B	Jan 18, 2022, 10:19 PM
IA1-q10.r	484 B	Jan 18, 2022, 10:11 PM

Q7) Implement a multiplication game. A while loop that gives the user two random numbers from 2 to 12 and asks the user to multiply them. Only exit the loop after five correct answers:

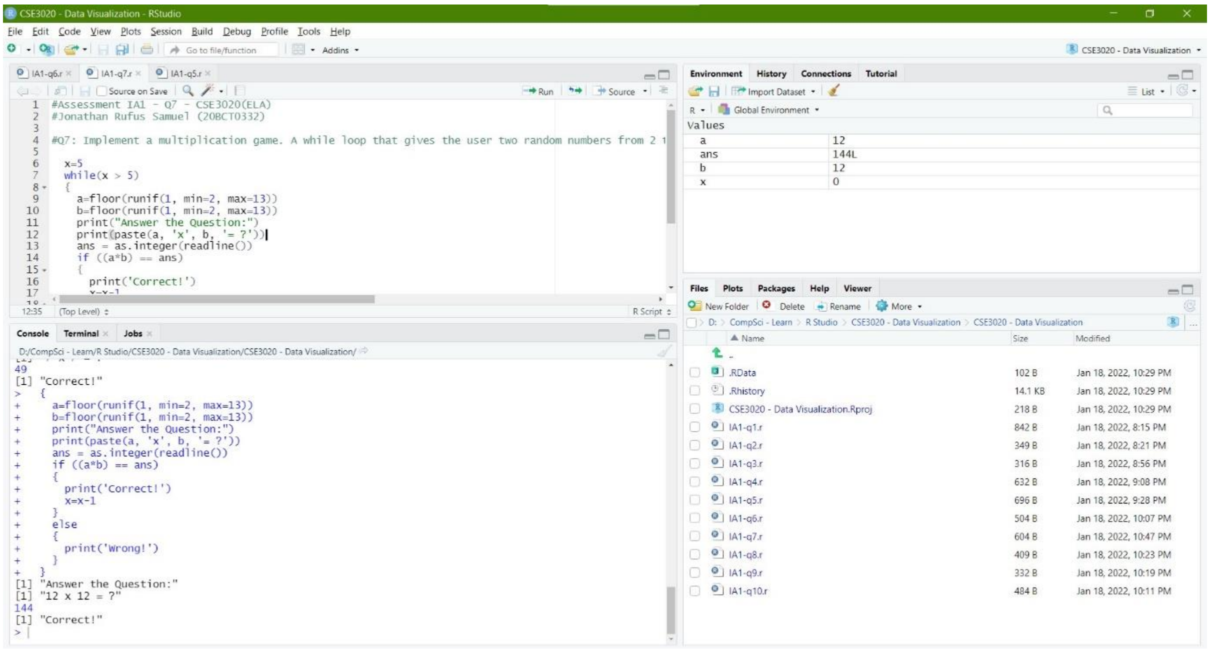
Code:

```
#Assessment IA1 - Q7 - CSE3020(ELA)
#Jonathan Rufus Samuel (20BCT0332)

#Q7: Implement a multiplication game. A while loop that gives the user two random
numbers from 2 to 12 and asks the user to multiply them. Only exit the loop after five
correct answers

  x=5
  while(x > 5)
  {
    a=floor(runif(1, min=2, max=13))
    b=floor(runif(1, min=2, max=13))
    print("Answer the Question:")
    print(paste(a, 'x', b, '= ?'))
    ans = as.integer(readline())
    if ((a*b) == ans)
    {
      print('Correct!')
      x=x-1
    }
    else
    {
      print('Wrong!')
    }
  }
```

Output:



```
#Assessment IA1 - Q7 - CSE3020(ELA)
#Jonathan Rufus Samuel (20BCT0332)

#Q7: Implement a multiplication game. A while loop that gives the user two random numbers from 2 1

  x=5
  while(x > 5)
  {
    a=floor(runif(1, min=2, max=13))
    b=floor(runif(1, min=2, max=13))
    print("Answer the Question:")
    print(paste(a, 'x', b, '= ?'))
    ans = as.integer(readline())
    if ((a*b) == ans)
    {
      print('Correct!')
```

```
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49
[1] "Correct!"
>   {
+     a=floor(runif(1, min=2, max=13))
+     b=floor(runif(1, min=2, max=13))
+     print("Answer the Question:")
+     print(paste(a, 'x', b, '= ?'))
+     ans = as.integer(readline())
+     if ((a*b) == ans)
+     {
+       print('Correct!')
+       x=x-1
+     }
+     else
+     {
+       print('Wrong!')
+     }
+   }
[1] "Answer the Question:"
[1] "12 x 12 = ?"
144
[1] "Correct!"
> 
```

Values

a	12
ans	144L
b	12
x	0

Name	Size	Modified
..		
.RData	102 B	Jan 18, 2022, 10:29 PM
.Rhistory	14.1 KB	Jan 18, 2022, 10:29 PM
CSE3020 - Data Visualization.Rproj	218 B	Jan 18, 2022, 10:29 PM
IA1-q1.r	842 B	Jan 18, 2022, 8:15 PM
IA1-q2.r	349 B	Jan 18, 2022, 8:21 PM
IA1-q3.r	316 B	Jan 18, 2022, 8:56 PM
IA1-q4.r	632 B	Jan 18, 2022, 9:08 PM
IA1-q5.r	696 B	Jan 18, 2022, 9:28 PM
IA1-q6.r	504 B	Jan 18, 2022, 10:07 PM
IA1-q7.r	604 B	Jan 18, 2022, 10:47 PM
IA1-q8.r	409 B	Jan 18, 2022, 10:23 PM
IA1-q9.r	332 B	Jan 18, 2022, 10:19 PM
IA1-q10.r	484 B	Jan 18, 2022, 10:11 PM

Q8) Using for loop simulate the flip a coin twenty times, keeping track of the individual outcomes (1 = heads, 0 = tails) in a vector that you pre-allocate:

Code:

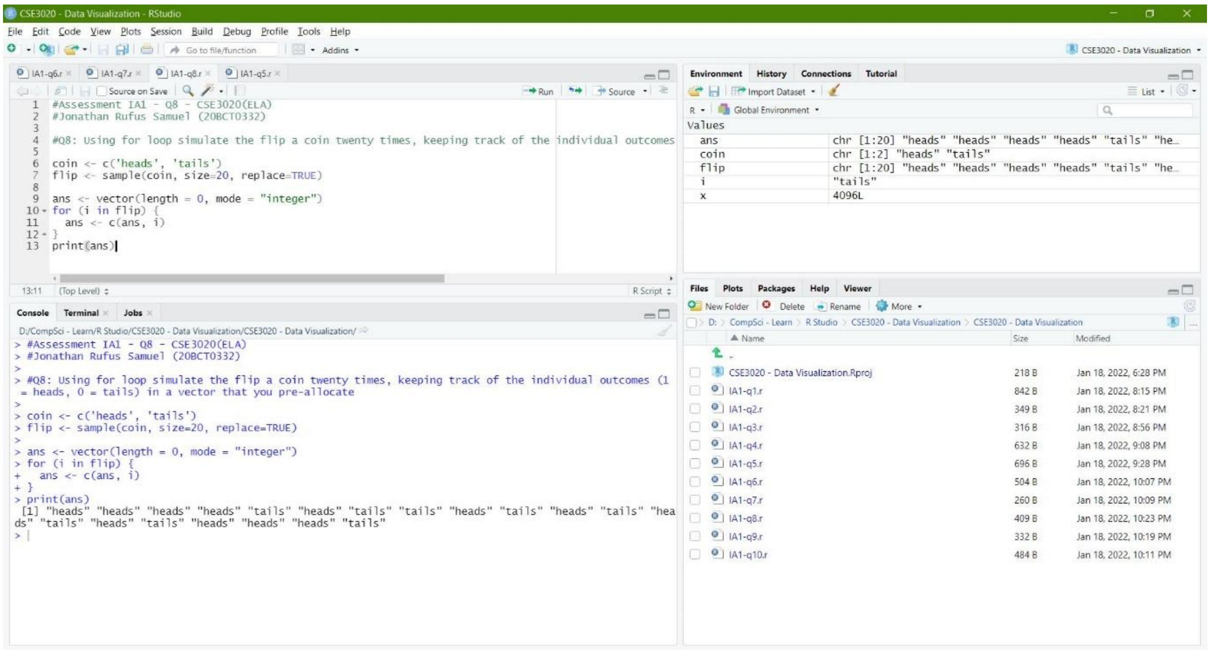
```
#Assessment IA1 - Q8 - CSE3020(ELA)
#Jonathan Rufus Samuel (20BCT0332)

#Q8: Using for loop simulate the flip a coin twenty times, keeping track of the individual
outcomes (1 = heads, 0 = tails) in a vector that you pre-allocate

coin <- c('heads', 'tails')
flip <- sample(coin, size=20, replace=TRUE)

ans <- vector(length = 0, mode = "integer")
for (i in flip) {
  ans <- c(ans, i)
}
print(ans)
```

Output:



```
#Assessment IA1 - Q8 - CSE3020(ELA)
#Jonathan Rufus Samuel (20BCT0332)

#Q8: Using for loop simulate the flip a coin twenty times, keeping track of the individual outcomes

coin <- c('heads', 'tails')
flip <- sample(coin, size=20, replace=TRUE)

ans <- vector(length = 0, mode = "integer")
for (i in flip) {
  ans <- c(ans, i)
}
print(ans)
```

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```
> #Assessment IA1 - Q8 - CSE3020(ELA)
> #Jonathan Rufus Samuel (20BCT0332)
>
> #Q8: Using for loop simulate the flip a coin twenty times, keeping track of the individual outcomes (1
 = heads, 0 = tails) in a vector that you pre-allocate
>
> coin <- c('heads', 'tails')
> flip <- sample(coin, size=20, replace=TRUE)
>
> ans <- vector(length = 0, mode = "integer")
> for (i in flip) {
+   ans <- c(ans, i)
+ }
> print(ans)
 [1] "heads" "heads" "heads" "heads" "tails" "heads" "tails" "tails" "heads" "tails" "heads" "tails" "hea
ds" "tails" "heads" "tails" "heads" "heads" "heads" "tails"
> |
```

Values

ans	chr [1:20] "heads" "heads" "heads" "heads" "tails" "he…
coin	chr [1:2] "heads" "tails"
flip	chr [1:20] "heads" "heads" "heads" "heads" "tails" "he…
i	"tails"
x	4096L

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..		
CSE3020 - Data Visualization.Rproj	218 B	Jan 18, 2022, 6:28 PM
IA1-q1.r	842 B	Jan 18, 2022, 8:15 PM
IA1-q2.r	349 B	Jan 18, 2022, 8:21 PM
IA1-q3.r	316 B	Jan 18, 2022, 8:56 PM
IA1-q4.r	632 B	Jan 18, 2022, 9:08 PM
IA1-q5.r	696 B	Jan 18, 2022, 9:28 PM
IA1-q6.r	504 B	Jan 18, 2022, 10:07 PM
IA1-q7.r	260 B	Jan 18, 2022, 10:09 PM
IA1-q8.r	409 B	Jan 18, 2022, 10:23 PM
IA1-q9.r	332 B	Jan 18, 2022, 10:19 PM
IA1-q10.r	484 B	Jan 18, 2022, 10:11 PM

Q9) Write a R program to know the first positive integer whose square exceeds 4000:

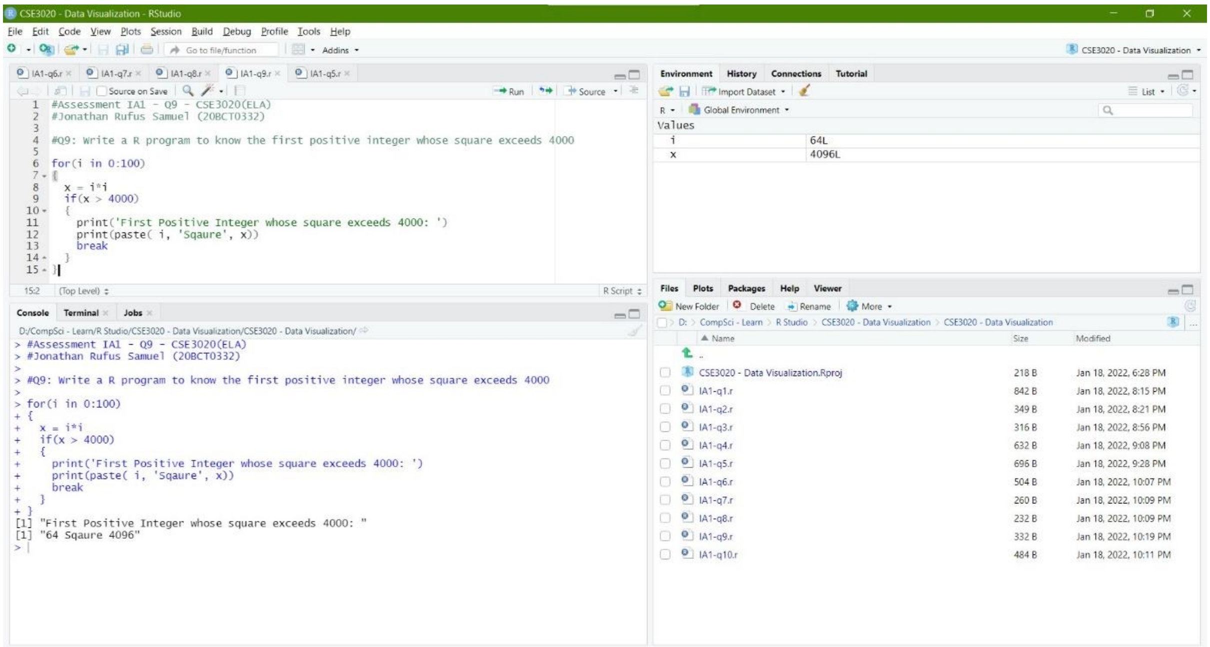
Code:

```
#Assessment IA1 - Q9 - CSE3020(ELA)
#Jonathan Rufus Samuel (20BCT0332)

#Q9: Write a R program to know the first positive integer whose square exceeds 4000

for(i in 0:100)
{
  x = i*i
  if(x > 4000)
  {
    print('First Positive Integer whose square exceeds 4000: ')
    print(paste( i, 'Sqaure', x))
    break
  }
}
```

Output:



CSE3020 - Data Visualization - RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function
Addins
CSE3020 - Data Visualization
IA1-q6.r IA1-q7.r IA1-q8.r IA1-q9.r IA1-q5.r
Source on Save
Run
Source
15:2
(Top Level)
R Script
Environment History Connections Tutorial
Import Dataset
List
Global Environment
Console Terminal Jobs
Files Plots Packages Help Viewer
New Folder Delete Rename More

```
#Assessment IA1 - Q9 - CSE3020(ELA)
#Jonathan Rufus Samuel (20BCT0332)

#Q9: Write a R program to know the first positive integer whose square exceeds 4000

for(i in 0:100)
{
  x = i*i
  if(x > 4000)
  {
    print('First Positive Integer whose square exceeds 4000: ')
    print(paste( i, 'Sqaure', x))
    break
  }
}
```

Values

i	64L
x	4096L

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```
> #Assessment IA1 - Q9 - CSE3020(ELA)
> #Jonathan Rufus Samuel (20BCT0332)
>
> #Q9: Write a R program to know the first positive integer whose square exceeds 4000
>
> for(i in 0:100)
+ {
+   x = i*i
+   if(x > 4000)
+   {
+     print('First Positive Integer whose square exceeds 4000: ')
+     print(paste( i, 'Sqaure', x))
+     break
+   }
+ }
[1] "First Positive Integer whose square exceeds 4000: "
[1] "64 Sqaure 4096"
> 
```

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IA1-q6.r	504 B	Jan 18, 2022, 10:07 PM
IA1-q7.r	260 B	Jan 18, 2022, 10:09 PM
IA1-q8.r	232 B	Jan 18, 2022, 10:09 PM
IA1-q9.r	332 B	Jan 18, 2022, 10:19 PM
IA1-q10.r	484 B	Jan 18, 2022, 10:11 PM

Q10) Write a R program to create a vector of a specified type and length. Create vector of numeric, complex, logical and character types of length 6:

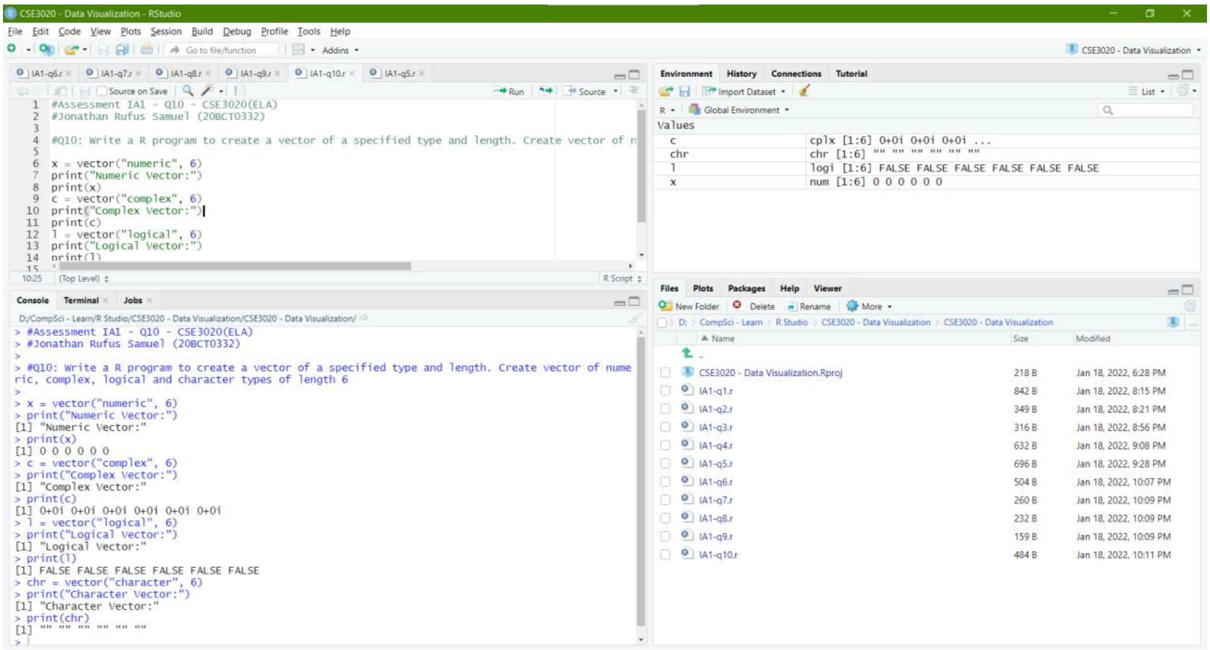
Code:

```
#Assessment IA1 - Q10 - CSE3020(ELA)
#Jonathan Rufus Samuel (20BCT0332)

#Q10: Write a R program to create a vector of a specified type and length. Create vector of numeric, complex, logical and character types of length 6

x = vector("numeric", 6)
print("Numeric Vector:")
print(x)
c = vector("complex", 6)
print("Complex Vector:")
print(c)
l = vector("logical", 6)
print("Logical Vector:")
print(l)
chr = vector("character", 6)
print("Character Vector:")
print(chr)
```

Output:



```
#Assessment IA1 - Q10 - CSE3020(ELA)
#Jonathan Rufus Samuel (20BCT0332)

#Q10: Write a R program to create a vector of a specified type and length. Create vector of n

x = vector("numeric", 6)
print("Numeric Vector:")
print(x)
c = vector("complex", 6)
print("Complex Vector:")
print(c)
l = vector("logical", 6)
print("Logical Vector:")
print(l)
```

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```
> #Assessment IA1 - Q10 - CSE3020(ELA)
> #Jonathan Rufus Samuel (20BCT0332)
>
> #Q10: Write a R program to create a vector of a specified type and length. Create vector of nume
ric, complex, logical and character types of length 6
>
> x = vector("numeric", 6)
> print("Numeric Vector:")
[1] "Numeric Vector:"
> print(x)
[1] 0 0 0 0 0 0
> c = vector("complex", 6)
> print("Complex Vector:")
[1] "Complex Vector:"
> print(c)
[1] 0+0i 0+0i 0+0i 0+0i 0+0i 0+0i
> l = vector("logical", 6)
> print("Logical Vector:")
[1] "Logical Vector:"
> print(l)
[1] FALSE FALSE FALSE FALSE FALSE FALSE
> chr = vector("character", 6)
> print("Character Vector:")
[1] "Character Vector:"
> print(chr)
[1] "" "" "" "" "" ""
>
```

```
Values
  c                   cplx [1:6] 0+0i 0+0i 0+0i ...
  chr                 chr [1:6] "" "" "" "" "" ""
  l                   logi [1:6] FALSE FALSE FALSE FALSE FALSE FALSE
  x                   num [1:6] 0 0 0 0 0 0
```

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IA1-q8.r	232 B	Jan 18, 2022, 10:09 PM
IA1-q9.r	159 B	Jan 18, 2022, 10:09 PM
IA1-q10.r	484 B	Jan 18, 2022, 10:11 PM