

3A- Output

The screenshot shows the RStudio interface. The console displays the following R code and its output:

```
> matrixbee=matrix(data=c(10,1,37,5,12,8,3,9,6,4,18,9,12,4,6,8,27,6,32,23,12,13,16,9,10),nrow=5,ncol=5)
> matrixbee
      [,1] [,2] [,3] [,4] [,5]
[1,]  10   8  18   8  12
[2,]   1   3   9  27  13
[3,]  37   9  12   6  16
[4,]   5   6   4  32   9
[5,]  12   4   6  23  10
> plantnames=list("Thistle","Vipers","GoldenRain","Yellowalfala","blackberry")
> plantframe=as.data.frame(plantnames)
> str(plantframe)
'data.frame':  1 obs. of  5 variables:
 $ X.Thistle.  : chr "Thistle"
 $ X.Vipers.   : chr "Vipers"
 $ X.GoldenRain.: chr "GoldenRain"
 $ X.Yellowalfala.: chr "Yellowalfala"
 $ X.blackberry.: chr "blackberry"
> plantmatrix=as.matrix(plantframe)
> str(plantmatrix)
```

The Environment pane on the right shows the objects in the global environment:

Object	Type	Value
plantnames	List of 5	
intnum	num [1:3]	10 20 30
realnum	num [1:3]	22.3 44.5 89

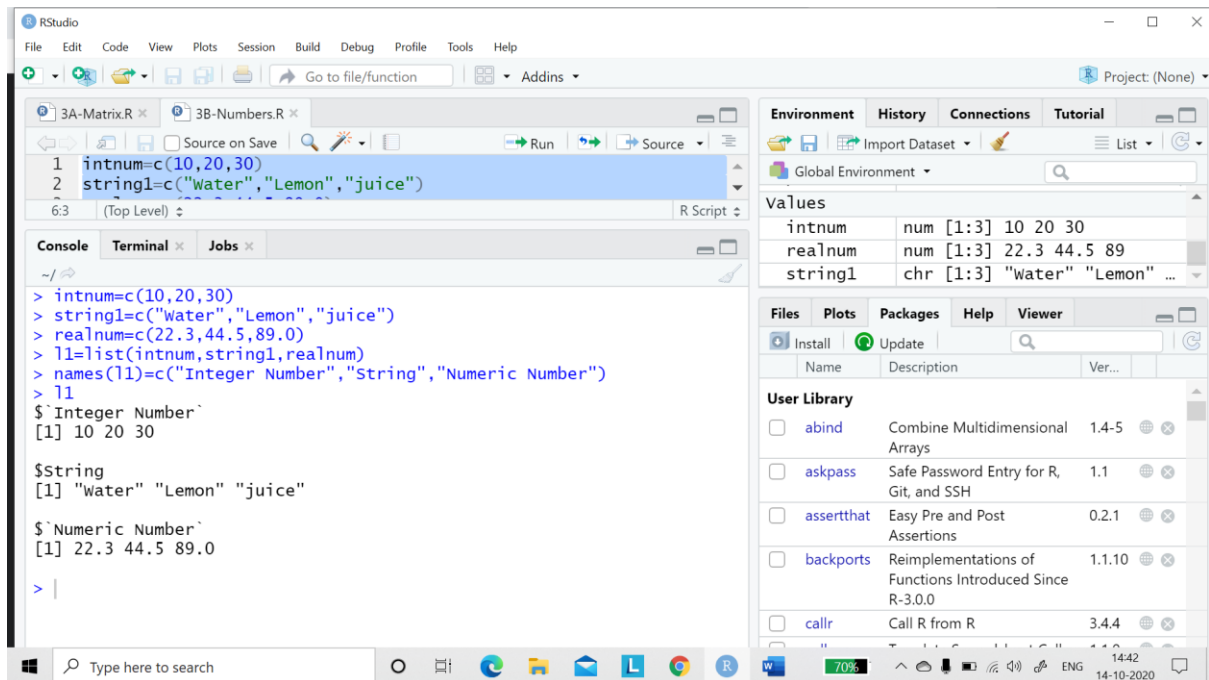
The screenshot shows the RStudio interface. The console displays the following R code and its output:

```
$ X.GoldenRain. : chr "GoldenRain"
$ X.Yellowalfala.: chr "Yellowalfala"
$ X.blackberry. : chr "blackberry"
> plantmatrix=as.matrix(plantframe)
> str(plantmatrix)
chr [1, 1:5] "Thistle" "Vipers" "GoldenRain" "Yellowalfala" ...
- attr(*, "dimnames")=List of 2
 ..$ : NULL
 ..$ : chr [1:5] "X.Thistle." "X.Vipers." "X.GoldenRain." "X.Yellowalfala." ...
> rownames(matrixbee)=plantmatrix
> matrixbee
      [,1] [,2] [,3] [,4] [,5]
Thistle    10   8  18   8  12
Vipers      1   3   9  27  13
GoldenRain 37   9  12   6  16
Yellowalfala 5   6   4  32   9
blackberry 12   4   6  23  10
> class(matrixbee)
[1] "matrix" "array"
```

The Environment pane on the right shows the objects in the global environment:

Object	Type	Value
plantnames	List of 5	
intnum	num [1:3]	10 20 30
realnum	num [1:3]	22.3 44.5 89

3B-Output



The screenshot shows the RStudio interface with a script editor, console, and environment pane. The script in the editor defines three variables: `intnum`, `string1`, and `realnum`, and then lists them. The console shows the execution of these commands and their output. The environment pane shows the values of the variables.

```
1 intnum=c(10,20,30)
2 string1=c("water","Lemon","juice")
6:3 (Top Level) ↕
```

Console:

```
> intnum=c(10,20,30)
> string1=c("water","Lemon","juice")
> realnum=c(22.3,44.5,89.0)
> l1=list(intnum,string1,realnum)
> names(l1)=c("Integer Number","String","Numeric Number")
> l1
$ Integer Number
[1] 10 20 30

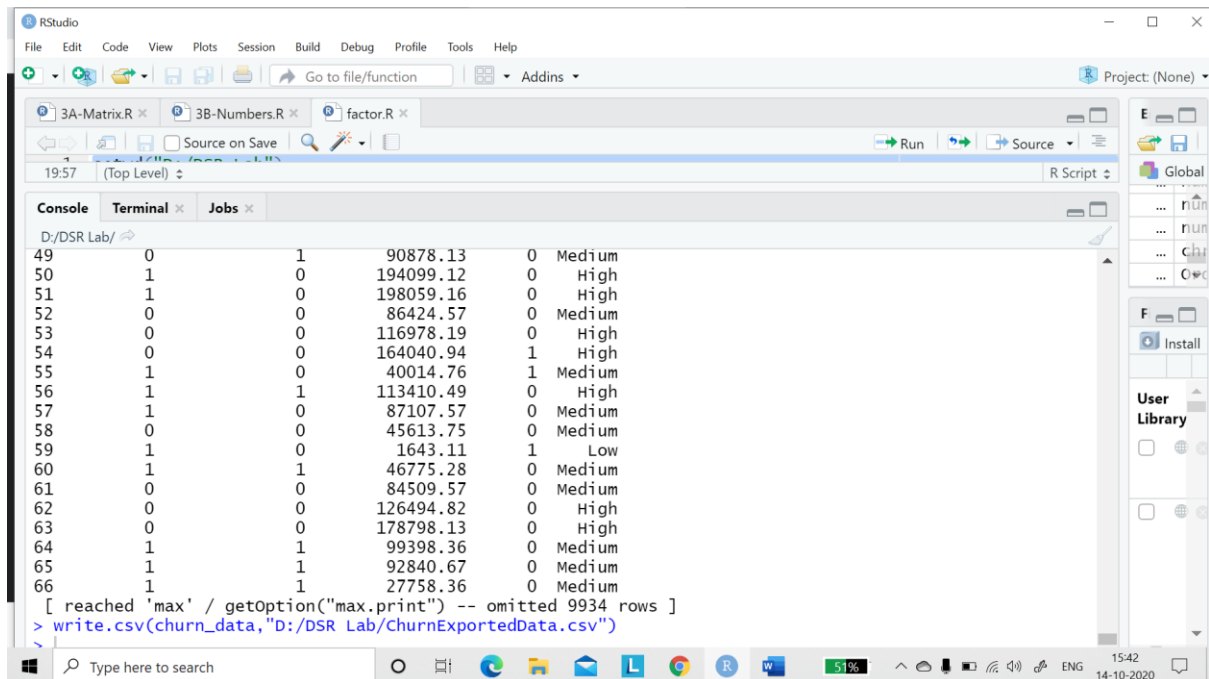
$String
[1] "water" "Lemon" "juice"

$ Numeric Number
[1] 22.3 44.5 89.0
> |
```

Environment:

Variable	Class	Value
intnum	num [1:3]	10 20 30
realnum	num [1:3]	22.3 44.5 89
string1	chr [1:3]	"water" "Lemon" ...

3C. Factor Program



The screenshot shows the RStudio interface with a script editor and console. The script in the editor is a function that reads a CSV file and writes the output to a new CSV file. The console shows the execution of the function and the resulting output.

```
19:57 (Top Level) ↕
```

Console:

```
D:/DSR Lab/
49      0      1      90878.13      0 Medium
50      1      0      194099.12      0 High
51      1      0      198059.16      0 High
52      0      0      86424.57      0 Medium
53      0      0      116978.19      0 High
54      0      0      164040.94      1 High
55      1      0      40014.76      1 Medium
56      1      1      113410.49      0 High
57      1      0      87107.57      0 Medium
58      0      0      45613.75      0 Medium
59      1      0      1643.11      1 Low
60      1      1      46775.28      0 Medium
61      0      0      84509.57      0 Medium
62      0      0      126494.82      0 High
63      0      0      178798.13      0 High
64      1      1      99398.36      0 Medium
65      1      1      92840.67      0 Medium
66      1      1      27758.36      0 Medium
[ reached 'max' / getOption("max.print") -- omitted 9934 rows ]
> write.csv(churn_data,"D:/DSR Lab/ChurnExportedData.csv")
> |
```