BIVARIATEANALYSIS IN R -COVARIANCE, CORRELATION, CROSSTAB

Exercise: 8

```
   Reference    Status Gender  TestNewOrFollowUp
1        KRXH Accepted Female Test1              New
2        KRPT Accepted   Male Test1              New
3        FHRA Rejected   Male Test2              New
4        CZKK Accepted Female Test3              New
5        CQTN Rejected Female Test1              New
6        PZXW Accepted Female Test4        Follow-up
7        SZRZ Rejected   Male Test4              New
8        RMZE Rejected Female Test2              New
9        STNX Accepted Female Test3              New
10       TMDW Accepted Female Test1              New
```

    i)   Load the dataset and Create a data frame and name it as dataframe1

    ii)   Load the function for crosstab
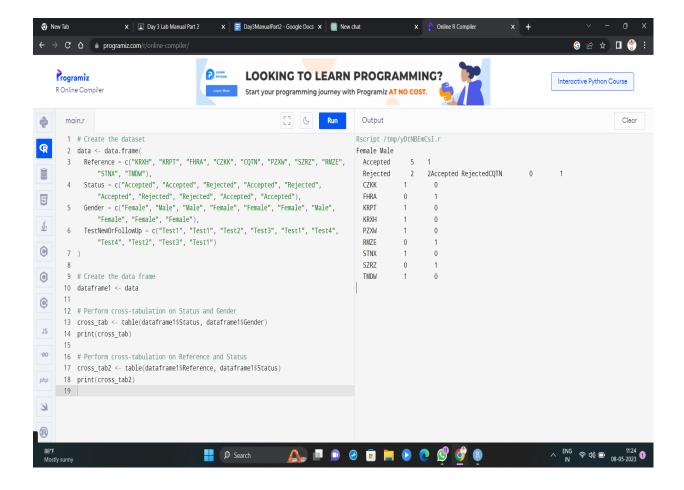
Note: Perform status+gender

```
          Gender
Status    Female Male
  Accepted     5    1
  Rejected     2    2
```

Note: Reference+Status

```
          Status
Reference Accepted Rejected
     CQTN        0        1
     CZKK        1        0
     FHRA        0        1
     KRPT        1        0
     KRXH        1        0
     PZXW        1        0
     RMZE        0        1
     STNX        1        0
     SZRZ        0        1
     TMDW        1        0
```
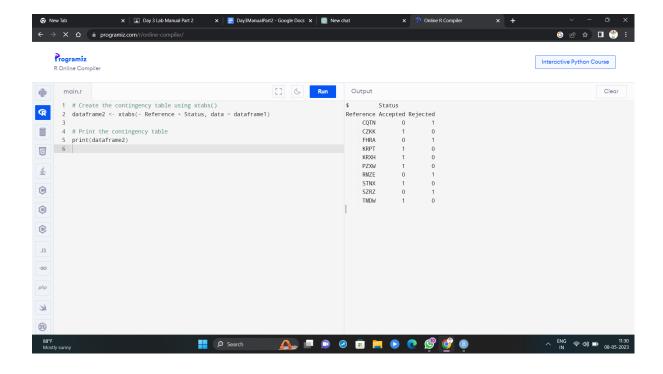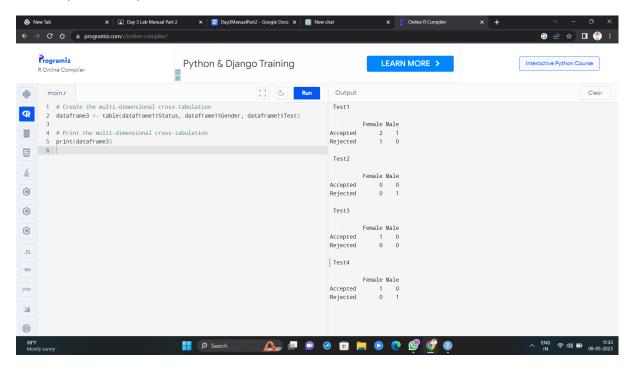
main.r

Run

```r
1  # Create the dataset
2  data <- data.frame(
3     Reference = c("KRXH", "KRPT", "FHRA", "CZKK", "CQTN", "PZXW", "SZRZ", "RMZE",
          "STNX", "TMDW"),
4     Status = c("Accepted", "Accepted", "Rejected", "Accepted", "Rejected",
          "Accepted", "Rejected", "Rejected", "Accepted", "Accepted"),
5     Gender = c("Female", "Male", "Male", "Female", "Female", "Female", "Male",
          "Female", "Female", "Female"),
6     TestNewOrFollowUp = c("Test1", "Test1", "Test2", "Test3", "Test1", "Test4",
          "Test4", "Test2", "Test3", "Test1")
7  )
8
9  # Create the data frame
10 dataframe1 <- data
11
12 # Perform cross-tabulation on Status and Gender
13 cross_tab <- table(dataframe1$Status, dataframe1$Gender)
14 print(cross_tab)
15
16 # Perform cross-tabulation on Reference and Status
17 cross_tab2 <- table(dataframe1$Reference, dataframe1$Status)
18 print(cross_tab2)
19
```

Output   Clear

```
Rscript /tmp/yDtNBEmCsI.r
       Female Male
  Accepted    5    1
  Rejected    2    2Accepted RejectedCQTN        0    1
  CZKK        1    0
  FHRA        0    1
  KRPT        1    0
  KRXH        1    0
  PZXW        1    0
  RMZE        0    1
  STNX        1    0
  SZRZ        0    1
  TMDW        1    0
```

Exercise: 9

i) Use Two Categorical Variables and Discover the relationships within a dataset

ii) Next, using the xtabs() function, apply two variables from "dataframe1 ", to create a table delineating the relationship between the "Reference" category, and the "Status" category.

iii) Save the file in the name of dataframe2

Exercise: 10

Use the same data frame using three Categorical Variables create a Multi-Dimensional Table

Apply three variables from "dataframe1" to create a Multi-Dimensional Cross-Tabulation of "Status", "Gender", and "Test".
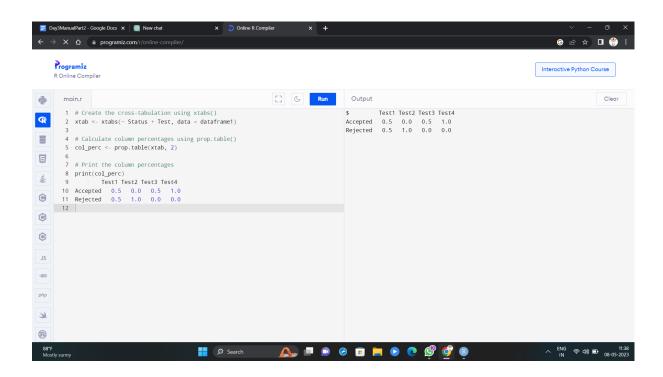
Exercise: 11

Row Percentages

The R package "tigerstats" is required for the next two exercises.

1) Create an xtabs() formula that cross-tabulates "Status", and "Test".

2) Enclose the xtabs() formula in the tigerstats function, "rowPerc()" to display row percentages for "Status" by "Test".
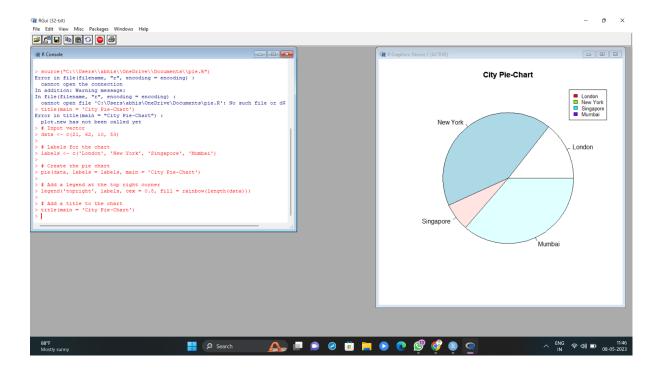
Exercise 12

Column Percentages

1) Create an xtabs() formula that cross-tabulates "Status", and "Test".

2) Enclose the xtabs() formula in the tigerstats function, "colPerc()" to display row percentages for "Status" by "Test".
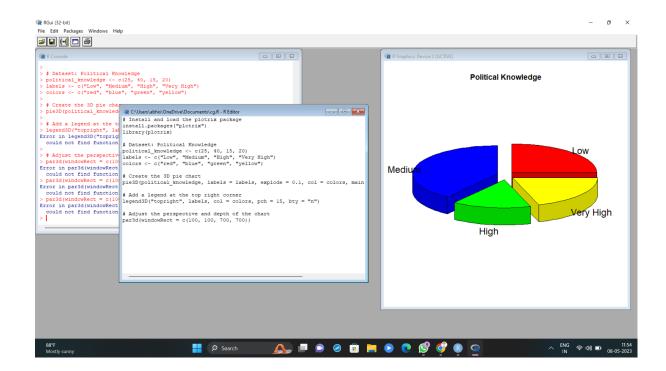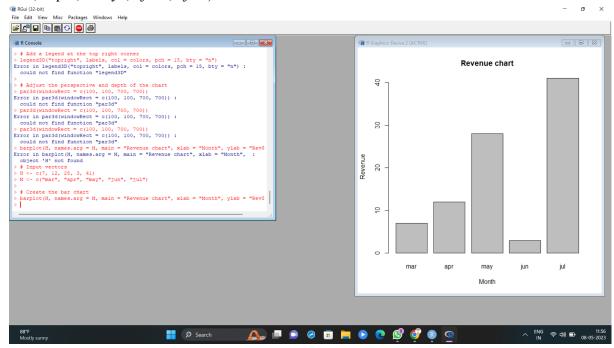

VISUALIZATION IN R

13. Write a program for creating a pie-chart in R using the input vector(21,62,10,53). Provide labels for the chart as 'London', 'New York', 'Singapore', 'Mumbai'. Add a title to the chart as 'city pie-chart' and add a legend at the top right corner of the chart.
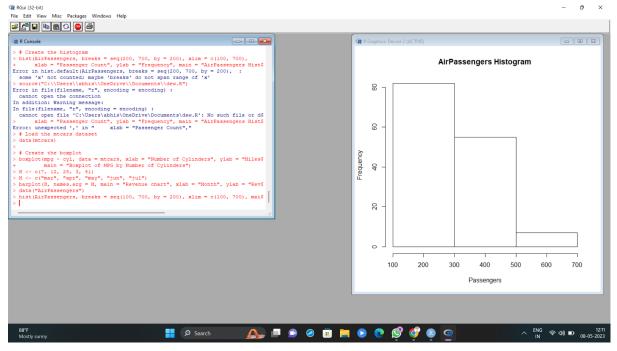
14. Create a 3D Pie Chart for the dataset "political Knowledge" with suitable labels,colours and a legend at the top right corner of the chart.

15. Write a program for creating a bar chart using the vectors H=c(7,12,28,3,41) and M=c("mar", "apr", "may", "jun", "jul"). Add a title to the chart as "Revenue chart".

16. Make a histogram for the "AirPassengers"dataset, start at 100 on the x-axis, and from values 200 to 700, make the bins 200 wide

17. Create a Boxplot graph for the relation between "mpg"(miles per galloon) and "cyl"(number of Cylinders) for the dataset "mtcars" available in R Environment.

R Console

```
Error in hist.default(AirPassengers, breaks = seq(200, 700, by = 200),  :
  some 'x' not counted; maybe 'breaks' do not span range of 'x'
> # Load the AirPassengers dataset
> data(AirPassengers)
>
> # Create the histogram
> hist(AirPassengers, breaks = seq(200, 700, by = 200), xlim = c(100, 700),
+      xlab = "Passenger Count", ylab = "Frequency", main = "AirPassengers Hist$
Error in hist.default(AirPassengers, breaks = seq(200, 700, by = 200),  :
  some 'x' not counted; maybe 'breaks' do not span range of 'x'
> source("C:\\Users\\abhis\\OneDrive\\Documents\\dew.R")
Error in file(filename, "r", encoding = encoding) :
  cannot open the connection
In addition: Warning message:
In file(filename, "r", encoding = encoding) :
  cannot open file 'C:\Users\abhis\OneDrive\Documents\dew.R': No such file or d$
+      xlab = "Passenger Count", ylab = "Frequency", main = "AirPassengers Hist$
Error: unexpected ',' in "     xlab = "Passenger Count","
> # Load the mtcars dataset
> data(mtcars)
>
> # Create the boxplot
> boxplot(mpg ~ cyl, data = mtcars, xlab = "Number of Cylinders", ylab = "Miles$
+         main = "Boxplot of MPG by Number of Cylinders")
>
```

R Graphics: Device 2 (ACTIVE)

Boxplot of MPG by Number of Cylinders