Experiment No.: 02

Aim: Basics of R Programming

Objective: 1. Students will be able to implement basic program in R

2. Students will be able to learn the basics of R programming

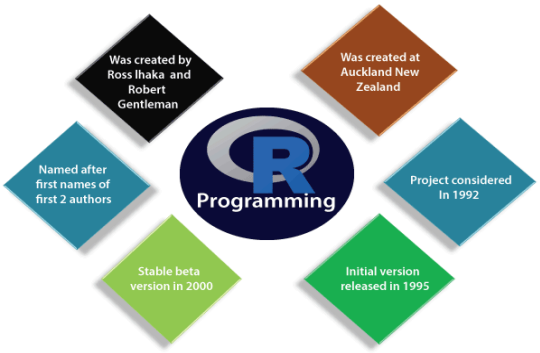
Software Requirements: R studio 4.3.2

Theory:

R is an open-source programming language that is widely used as a statistical software and data analysis tool. R generally comes with the Command-line interface. R is available across widely used platforms like Windows, Linux, and macOS. Also, the R programming language is the latest cutting-edge tool.

Operators are the symbols directing the compiler to perform various kinds of operations between the operands. Operators simulate the various mathematical, logical, and decision operations performed on a set of Complex Numbers, Integers, and Numericals as input operands.

Arithmetic operations in R simulate various math operations, like addition, subtraction, multiplication, division, and modulo using the specified operator between operands, which may be either scalar values, complex numbers, or vectors. The R operators are performed element-wise at the corresponding positions of the vectors.



Features of R:

- Data handling
- Data Visualization

- Statistical Analysis
- Data cleaning and preprocessing
- Functional programming
- Machine learning
- Web scraping

Code and Output:

```
> c<- 13
> d<- 17
> z <- (((c+d)- 10)*3)/2
>
> print(z)
[1] 30
>
> eqn <- c^2 + 2*c*d + d^2
>
> print(eqn)
[1] 900
>
> print("The Magic you are looking for is in the work you are avoiding")
[1] "The Magic you are looking for is in the work you are avoiding"
>
> for (value in 1:10) {
+   print(value)
+ }
[1] 1
[1] 2
[1] 3
[1] 4
[1] 5
[1] 6
[1] 7
[1] 8
[1] 9
[1] 10
```

Conclusion:

In conclusion , R programming language has emerged as powerful and versatile too for data analysis, statistical modelling and machine learning. R remains the top choice for data scientists, statisticians and researchers across various domain. It is the world's most widely used statistics programming language. R also support procedural programming with multiple functions.