

## Finolex Academy of Management and Technology, Ratnagiri

## **Department of Information Technology**

Subject:	R Programming Lab. (ITL804)					
Class:	BE IT / Semester – VIII (Rev-2016) / Academic year: 2019-20					
Name of Student:	Kazi Jawwad A Rahim					
Roll No:	28		Date of performance (DOP) :			
Assignment/Experiment No:		01	Date of checking (DOC):			
<b>Title:</b> Program to demonstrate basic functionality of R such as- data types, characters, strings, factors, helps, accessing packages.						
	Marks:		Teacher's Signature:			

**1. Aim**: To understand basics functionality of R software.

### 2. Prerequisites:

1. Basics of programming disciplines.

## 3. Hardware Requirements:

1. PC with minimum 2GB RAM

## 4. Software Requirements:

- 1. Windows / Linux OS.
- 2. R version 3.6 or higher

### 5. Learning Objectives:

- 1. To understand R software as a software development platform.
- 2. To understand elementary building blocks of R software such as- data types, character, string, factors, helps, packages.

6. Learning Objectives Applicable: LO 1

7. Program Outcomes Applicable: PO 1

8. Program Education Objectives Applicable: PEO 1

### **OUTPUT:**

## **Data Types:**

- 1) x=5 mode(x) >> numeric
- 2) x=5.5 mode(x) >> numeric
- 3) x="Jawwad"
  mode(x)
  >> character

- 4) x=TRUE mode(x) >> logical
- 5) x=6+4i mode(x) >> complex
- 6) x='Jawwad' mode(x) >> character

## **Relational Operators:**

A=6 B=8

> A>B

[1] FALSE

> A>=B

[1] FALSE

> A<B

[1] TRUE

> A<=B

[1] TRUE

> A==B

[1] FALSE

> A!=B

[1] TRUE

## **Arithmetic Operators:**

A=6 B=8

> A+B

[1] 14

> A-B

[1] -2

> A\*B

[1] 48

> A/B

[1] 0.75

> A%%B

[1]6

> A%/%B

[1] 0

### **Logical Operators:**

> A&B

[1] TRUE

> A&&B

[1] TRUE

> A | | B

[1] TRUE

> A | B

[1] TRUE

#### **Factors:**

```
> d=c(4,1,6)
```

>

f=factor(d,levels=1:7,labels=c("Monday","Tuesday","Wednesday","Thursday","Friday","Saturday","Sunday "))

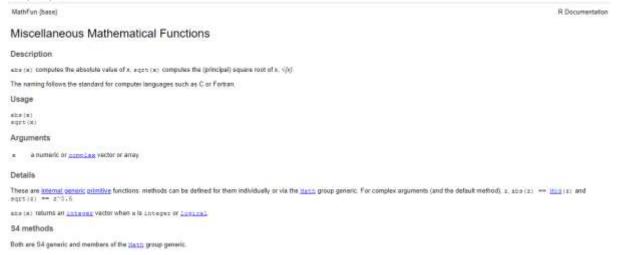
> f[1]

[1] Thursday

Levels: Monday Tuesday Wednesday Thursday Friday Saturday Sunday

#### Help:

#### help(sqrt)



#### Packages:

> install.packages("rmeta")

#### Select mirror



#### **Learning Outcomes:**

- 1. We understood R software as a software development platform.
- 2. We understood elementary building blocks of R software such as- data types, character, string, factors, helps, packages.

#### **Conclusion:**

We have successfully demonstrated installation of R along with introduction to R and basic building blocks of R.

# 13. Experiment/Assignment Evaluation

Experiment/Assignment Evaluation:							
Sr. No.	Parameters		Marks obtained	Out of			
1	Technical Understanding (Assessment may be done based on Q & A or any other relevant method.) Teacher should mention the other method used -			6			
2	Neatness/presentation			2			
3	Punctuality			2			
Date of performance (DOP)		Total marks obtained		10			
Date of checking (DOC)		Signature of teacher		•			

# **References:**

- 1. URL: https://cran.r-project.org/doc/manuals/r-release/R-intro.pdf (Online Resources)
- 2. R Cookbook Paperback 2011 by Teetor Paul O Reilly Publications
- 3. Beginning R: The Statistical Programming Language by Dr. Mark Gardener, Wiley Publications
- 4. R Programming For Dummies by Joris Meys Andrie de Vries, Wiley Publications

# **Viva Questions**

- 1. What is R?
- 2. How is R different than Python?
- 3. What are different data-types in R?
- 4. How to define a string in R?
- 5. What is factor data class in R?
- 6. How to take help in R?
- 7. How to load packages and libraries in R?