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# R PROGRAMMING

Programming & development

Course Curriculum

Basic – 30 Hours



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# R Programming

#### **Module 1: Introduction to R**

Introduction to R and RStudio

Overview of R Programming

Environmental Setup of R

### **Module 2: Fundamentals of R**

Features of R

Variables in R

Constants in R

Operators in R

Datatypes and R Objects



#### **Module 3: Vectors**

**Creating Vectors** 

Accessing elements of a Vector

Operations on Vectors

**Vector Arithmetic** 

#### **Module 4 : Control Statements**

If ... else statement

If else() function

Switch() function



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Loops

#### **Module 5: Functions in R**

Formal and Actual arguments

Named arguments

Global and local Variables

#### **Module 6: Matrices**

Creating matrices

Accessing elements of a Matrix

**Operations on Matrices** 

Matrix transpose



#### **Module 7: Strings**

Creating strings

Paste() and paset0()

Formatting numbers and string using format()

String manipulation

#### **Module 8 : Lists**

Creating lists

Manipulating list elements

Merging lists

Converting lists to vectors



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#### Module 9: Arrays in R

Creating arrays

Accessing array elements

Calculations across array elements

#### **Module 10 : R Factors**

**Understanding factors** 

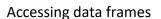
Modifying factors

Factors in Data frames

#### **Module 11: Data Frames in R**

Creating data frame

Operations on data frames





Creating data frames from various sources

#### Module 12: Data visualization in R

Need for data visualization

Bar plot

Plotting categorical data

Stacked bar plot

Histogram

Plot() function and line plot

#### **Module 13: STRINER Package**



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Important functions in stringr

Regular expressions

## **Module 14: DPLYER Package**

Load data into dataframe

Viewing the data

Selecting columns

Selecting rows

