

SIX MONTH TRAINING IN DATA SCIENCE WITH R **PROGRAMMING**



Module 1 Basic of R Language

Introduction to R

- Overview and history of R
- Introduction of R Studio
- Installing and configuration of R
- Introduction to R Console

Programming in R

- Programming Structure of R
- R data type and objects
- R language Operators
- Various operators
- Branching & Looping

Function In R language:

- R important built-in functions
- General functions
- Math functions
- Statistical functions
- Write function in R
- When should we write function?
- Functions with condition

Vector, Array and Matrix:

- Introduction to vector
- Types of vector
- Matrix create, print, add columns, slice
- Array in R

Factor In R:

- Introduction to Factor



- Types of Factor

Data Frames and List

- What is a Data Frame?
- How to create a data frame
- Append a Column to Data Frame
- Select a column of a data frame
- Subset a data frame
- List Using vector array and matrix

Package in R :

- Package Introduction
- Installing package
- Loading package manually
- Data Reshaping in R

Module 2 ~ R Charts, Graphs and Interfaces

Graphs in R

- History and Graphical representation of data
- Different chart Functions
- Different type of charts and graphs
- Pie charts,Boxplots,Bar charts
- Histograms, Lines Graphs and Scatter plots

Interfaces in R

- Data import in R
- Data import form excel format
- Csv file format
- Execl format
- Binary files
- Xml and json files
- Web Data



Exporting data in R

- Writing data in tag delimited text file
- Exporting data in excel file
- Export data in stata binary format
- Export data in SAS format

Module 3 Data Manipulation and Modeling

Data Manipulation with R

- Feature Engineering
- Label Encoding
- One Hot Encoding
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Predictive Modeling using Machine Learning in R

- Linear Regression
- Decision Tree
- Random Forest
- Multipul Regression
- Logistic Regerssion

Advanced data manipulation

- Normal Distribution
- Binomial Distribution
- Time Series Analysis
- Non-Linear Least Square
- Analysis and Covariance



Module 4 Data Visualization with Shiny web App

Introduction Shiny Web Application

- Structure of shiny web Application
- Deploying shiny web app
- Single Page Shiny App
- Multiple Page Shiny App
- Html and Css in shiny app
- Integrating Theme and java Script Code

Shiny Web Widget

- Action Button
- Input Box
- Checkbox
- Checkbox Group
- Date and Date Range
- Numeric Input
- Radio Button
- SelectBox
- Slider and Slider Range
- File Upload

Shiny Web Application Layout

- Tabset
- Navigation Bar
- Vertical Layout
- Sidbar Panel
- NavlistPanel
- MainPanel ,Absolute Panel, Conditional Panel



Shiny Web App Rendering Output Function

- Table Data output
- Render output
- Html output
- Plot output
- Table output
- Text output
- verbatimTextOutput
- uiOutput

Module 5 Project Work

- Case Study
- Web Project using Shiny dashborad
- Interactive data visualization on Web App