DATA VISUALIZATION WITH R

Course Objective

R is a programming language for statistical computing and graphics that you can use to clean, analyze, and graph your data. It is widely used by researchers from diverse disciplines to estimate and display results and by teachers of statistics and research methods.

Course Outcome

- Navigate and optimize the R integrated development environment (IDE) R Studio.
- Install and load add-in packages.
- Import external data into R for data processing and statistical analysis.
- Learn the main R data structures – vector and data frame.
- Compute basic summary statistics.

Unit 1: R – PACKAGES

Unit 2: R – DATA RESHAPING

2.1 Joining Columns and Rows in a Data Frame
2.2 Merging Data Frames
2.3 Melting and Casting
2.4 Melt the Data
2.5 Cast the Molten Data

Unit 3: R – CSV FILES

3.1 Getting and Setting the Working Directory
3.2 Input as CSV File
3.3 Reading a CSV File
3.4 Analyzing the CSV File
3.5 Writing into a CSV File

Unit 4: R – EXCEL FILE

4.1 Install xlsx Package
4.2 Verify and Load the "xlsx" Package
4.3 Input as xlsx File
4.4 Reading the Excel File

Unit 5: R – BINARY FILES

5.1 Writing the Binary File
5.2 Reading the Binary File

Unit 6: R – XML FILES

6.1 Input Data
6.2 Reading XML File
6.3 Details of the First Node
6.4 XML to Data Frame

Unit 7: R – JSON FILE

7.1 Install R JSON Package
7.2 Input Data

7.3 Read the JSON File

7.4 Convert JSON to a Data Frame

Unit 8: R – WEB DATA

Unit 9: R – DATABASES

9.1 R MySQL Package

9.2 Connecting R to MySql

9.3 Querying the Tables

9.4 Query with Filter Clause

9.5 Inserting Data into the Tables

9.6 Updating Rows in the Tables

9.7 Creating Tables in MySql

9.8 Dropping Tables in MySql

Unit 10: R – PIE CHARTS

10.1 Pie Chart Title and Colors

Reference Book:

1. R for Data Science: Import, Tidy, Transform, Visualize, and Model Data ------ by Hadley Wickham (Author), Garrett Grolemund

2. The Book of R: A First Course in Programming and Statistics by Tilman M. Davies

3. R for Everyone: Advanced Analytics and Graphics --- by Jared lander