Data Science With R

DATA SCIENCE WITH R

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1 Data Science

- Introduction to Data Science
- Need for Business Analytics
- Data Science Life Cycle
- Different tools available for Data Science
- Pre-requisites of Data Science

2 R-Programming

- Introduction to R
- Installation of R
- Windows Installation
- Linux Installation
- Installation of R-Studio

2.1 Types of Variables
- Types of Operators
- Arithmetic Operators
- Logical Operators
- Relational Operators
- Membership Operators
- Special Operators
- If-else Flow Control
- Loops in R (While, For, Break, Next)
- Switch-Case

2.2 Types of Datatype
- Vectors
- Arrays
- List
- Matrices
- Factors
- Data Frames

2.3 Types of Loops
- For loop
- While Loop
- Nested Loops

2.4 Functions in R
- Function declaration with parameters
- Function declaration without parameters

2.5 R Data Interface
- Reading CSV files
- Reading XML files
- JSON files
- Scraping data from the Web
- SQL with R
- Databases with R

2.6 Data Visualization of R
- Pie Chart
- Bar graph
- Line Graph
- Scatter plot
- Stack Plot
- Box-Plot

2.7 Statistics in R
- Terminologies of Statistics
- Normal Distribution
- Binomial Distribution
- Regression Analysis
- Poisson Distribution
- Time-Series Analysis
- Chi-square Test Analysis
- Non-linear square analysis

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2.8 Machine Learning in R
- What is Machine Learning ?
- Supervised Machine learning
- Unsupervised Machine learning
- Application of Machine Learning.
- AI vs Machine Learning

- Supervised Learning
  - Classification algorithms
  - Decision Tree
  - Random Forest
  - Naive-Bayes
  - SVM Classifier

- Regression Learning
- Linear Regression
- Multiple Regression
- Logistic Regression

- Clustering
- K-means clustering
- K-nearest neighbour