R AND DATA ANALYTICS

CURRICULUM

WEEK 1

» **INTRODUCTION TO R**
- What is R
- History of R
- Features of R
- SAS versus R
- S and S-plus
- Obtaining and managing R
- Installing R
- Packages
- R interfaces
- R Library

» **R objects and Data types**
- Vector
- Matrix
- Array
- Factor
- List
- Data Frame
- Factors
- NA/NAN
- Explicit Coercion
- Lists
- Missing Value

WEEK-2

» **Inbuilt Functions of R**
- Environment functions
- Statistical Functions
- Text Functions
- Mathematical Functions
- Reading Data from R
- Writing Data into R
- Files connection

» **Control Structure of R**
- If
- For
- Repeat
- While
- Next

- Return

» **Writing Functions in R**

» **Loop Function of R**
- Lappy
- Tappy
- Split
- Mappy
- Apply

» **Date and time in R**
- Dates in R
- Time in R
- Operation on Dates and Time on R

» **Basic Graphs in R**
- Creating a graph
- Density Plot
- Dot Plot
- Bar Plot
- Line Charts
- Pie Charts
- Box Plot
- Scatter Plot
- Histogram
- Normal QQ Plot

» **Advance Graphs in R**
- Graphical Parameters
- Lattice Graphs
- Combining Plot
- Ggplots Graph
- Probability Graphs
- Correlograms

WEEK-3

» **Statistics**
- Measure of central Tendency
- Measure of Variances
- Probability distributions
- Advance Statistics

» Predictive Modeling
- Simple Linear Regression
- Multiple Regression
- Logistic Regression
- Poisson Regression

» Classification Methods
- Decision Tree Classifiers
- Bayesian Classifiers
- K-N-N Classifiers

WEEK-3

» Clustering techniques
- K Means
- PAM
- Hierarchical Clustering

» Black Box Methods
- Artificial Neural Network
- Support Vector Machines

» Time Series Analysis
- Autoregressive moving Average
- VAR
- GARCH

There will be a two week project after this course.

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Java

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