



R Programming

Course description

R programming training builds proficiency in using R programming language for statistical computing and graphics. R, a language and environment, is gaining popularity in getting insight into complex data. The business analyst and other professionals dealing in a large amount of data can derive results using the ready-made functions available in R. R programming training course introduces the R environment and basic statistical analysis. It extends the learning curve by teaching techniques used for data manipulation and the overview of basic data structures. Statistical applications using R programming and exploration of data using box plots, histograms, correlation coefficients will also be illustrated

R Programming training online training curriculum

Overview

- History of R
- Advantages and disadvantages
- Downloading and installing
- How to find documentation

Introduction

- Using the R console
- Getting help
- Learning about the environment
- Writing and executing scripts
- Object-oriented programming
- Introduction to vectorized calculations
- Introduction to data frames
- Installing packages
- Working directory
- Saving your work

Variable types and data structures

- Variables and assignment
- Data types
- Data structures
- Indexing, sub setting
- Assigning new values
- Viewing data and summaries
- Naming conventions
- Objects

Getting data into the R environment

- Built-in data
- Reading data from structured text files
- Reading data using ODBC

Data frame manipulation with deeply

- Renaming columns
- Adding new columns
- Binning data (continuous to categorical)
- Combining categorical values
- Transforming variables
- Handling missing data
- Long to wide and back
- Merging datasets together
- Stacking datasets together (concatenation)

Handling dates in R

- Date and date-time classes in R
- Formatting dates for modeling

Control flow

- Truth testing
- Branching
- Looping

Functions in depth

- Parameters
- Return values
- Variable scope
- Exception handling

Applying functions across dimensions

- Supply, apply, apply

Exploratory data analysis (descriptive statistics)

- Continuous data
- Categorical data
- Group by calculations with deeply
- Melting and casting data

Inferential statistics

- Bi-variate correlation
- T-test and non-parametric equivalents
- Chi-squared test

Base graphics

- Base graphics system in R
- Scatter plots, histograms, bar charts, box, and whiskers, dot plots
- Labels, legends, titles, axes
- Exporting graphics to different formats

Advanced R graphics: ggplot2

- Understanding the grammar of graphics
- Quick plots (plot function)
- Building graphics by pieces (plot function)

General linear regression

- Linear and logistic models
- Regression Plots
- Confounding / interaction in regression
- Scoring new data from models (prediction)

Conclusion

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