Course Outline | R Programming Introduction

3 day(s)

Overview

Do you get overwhelmed by complicated lingo and want a course that is easy to follow, detailed and presented to make the process enjoyable?

If so, our R Programming Introduction is the course for you!

It covers the most essential topics you must learn to begin programming with R. With more than two million global users, the R language is rapidly turning into a top programming language specifically in the space of data science as well as statistics. What you are going to learn on this course is how to master the fundamentals of the open-source programming language which includes vectors, data frames and lists.

Prerequisites:

No prerequisites are required for this course

Course Outline

Introduction

- A Brief History of R
- What exactly is R Programming
- What are the benefits of using R language

Your First R Session

- Entering Commands in the Console Window
- Performing simple calculations
- Using a Function
- Storing calculated values
- Sourcing a Script

The R Syntax

- Expressions
- Constants
- Arithmetic
- Conditions
- Function calls
- Symbols
- Keywords
- Naming Variables

Effective use of Functions and Arguments

- Ways to vectorize Functions
- Passing Arguments to Functions
- Making your code plain and readable

Packages

- Finding R Packages
- Installing a Package
- Loading and unloading Packages

Working with numbers

- Arithmetic Operators
- Using Mathematical Functions
- Logarithms and Exponentials

- Infinity Function
- Dealing with lost values

Vectors

- Creating Vectors
- Combining Vectors
- Repeating Vectors
- Getting values in and out of Vectors
- The Indexing System
- Extracting values from Vectors
- Changing Vector values

Logical Vectors

- Comparing values
- Vectors as Indices
- Merging Logical statements

Character Vectors

- Creating and assigning Named Vectors
- Manipulating text
- Splitting text
- Concatenating text

Dates and Times

- Date Functions
- Adding Time Details to Dates

Combining Vectors into Matrix

- Creating a Matrix
- Ways to combine Vectors into Matrix
- Calculating with Matrices

Data-Frames

- Building a Data-Frame from a Matrix
- Other ways to create a Data-Frame
- Manipulating Data Frame values
- Extracting Data-Frame values
- Assuming Data-Frames as a Matrix

Lists

- Creating a List
- Unnamed Lists
- Named Lists
- Combining Lists

Scripts

- Creating a Script
- Transforming a Script into a Function
- Using the Function
- Using Arguments, the smart way
- The multiply Argument
- Default values

Logical Flow

- If statements
- If-Else statements

Loops

- For Loop
- Computing values in a For Loop

Debugging your code

- Error Types
- Interpreting warnings and errors
- Browsing through a Function

Getting Data in and out of R

- Entering Data in the Text Editor
- Using the Clipboard
- Importing Data
- Exporting Data

Processing Data

- Choosing the right Data-Structure
- Basic Subset Operators
- Specifying the Subset
- Summarising your Data
- Counting unique values
- Preparing Data

Working with Graphics

- Using Base Graphics
- Creating Plots
- Adding points to a Plot
- Creating a Lattice Plot