

# R Beginner

## Detailed Content

### Introduction

Introduction to R  
Base R and contributed packages  
Download and installation of base R  
Installing R packages

### The RStudio IDE

Download and installation  
Overview of the RStudio environment  
The main panes  
Working directory  
Workspace  
Projects  
Create a project

### Using R as a Calculator

Executing commands from the command line and the source pane  
Arithmetic operators  
Relational operators  
Logical operators

### Creating Objects

Objects in R  
Assignment operators  
Naming rules  
Basics of R Syntax  
Creating objects  
Viewing objects in RStudio  
Viewing objects in the console

### Data Types and Classes

Basic data types  
Data structures in R  
Vectors  
Factors  
Matrices  
Arrays  
Lists  
Data frames  
Tibbles

Which data structure should I use?

### Changing data types

Implicit coercion  
Explicit coercion

### Naming parts of data objects

Column names  
Row names  
Dimension names  
Names

### Accessing Data within Data Structures

Referring to data by position  
Referring to data by name

### Replace parts of an object

Replace names  
Replace values

### Add to a data object

Add elements to vectors  
Add rows or columns  
Add by position  
Add by name

### Removing data from a data object

Remove elements from vectors  
Remove rows or columns from matrices  
Remove rows or columns from data frames and lists

### Evaluation in R

Vector arithmetic  
Order of operations  
Vector recycling  
Vectorised operations

Applying functions to elements of data structures

### Using Functions

What is a function?  
Syntax for using functions in R  
Arguments  
Getting help with a function  
Overview of help documentation in R  
Basic statistical summary functions  
Masking of functions  
Explicitly specifying the package name when calling a function  
Package: conflicted

### Importing Data

Importing data in RStudio  
Importing data from text files (csv)

### Exporting Data

Export data to text file

### Basic Data Visualisation

The plot function  
Add reference lines  
Add text  
Add a legend  
Exporting plots