



## Aspect Training

Telephone: [0208 942 5724](tel:02089425724)

Email: [info@aspecttraining.co.uk](mailto:info@aspecttraining.co.uk)

YOUR COURSE, YOUR WAY - MORE EFFECTIVE IT TRAINING

# R Programming for Developers

**Duration: 3 days**

## Overview:

Learn how to program by diving into the R language, and then use your newfound skills to solve practical data science problems. With this course you'll learn how to load data, assemble and disassemble data objects, navigate R's environment system, write your own functions, and use all of R's programming tools.

## Prerequisites:

Previous experience of a programming language or attendance of our R Programming for the Beginner is required for this course

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## Topics:

### 1 - Getting Started

The R User Interface

Objects

Functions

Sample with Replacement

Writing Your Own Functions

The Function Constructor

Arguments

Scripts

### 2 - Packages and Help Pages

Packages

`install.packages`

`library`

Getting Help with Help Pages

Parts of a Help Page

Getting More Help

### 3 - Atomic Vectors

Doubles

Integers

Characters

Logicals

Complex and Raw

#### **4 - Attributes**

Names

Dim

#### **5 - Storing Data**

Matrices

Arrays

Class

Dates and Times

Factors

Coercion

Lists

Data Frames

Loading Data

Saving Data

#### **6 - R Notation**

Selecting Values

Positive Integers

Negative Integers

Zero

Blank Spaces

Logical Values

Names

Dollar Signs and Double Brackets

#### **7 - Modifying Values**

Changing Values in Place

Logical Subsetting

Logical Tests

Boolean Operators

Missing Information

na.rm

is.na

## **8 - Environments**

Environments

Working with Environments

The Active Environment

Scoping Rules

Assignment

Evaluation

Closures

## **9 - Strategy**

Sequential Steps

Parallel Cases

if Statements

else Statements

Lookup Tables

Code Comments

## **10 - S3**

The S3 System

Attributes

Generic Functions

Methods

Method Dispatch

Classes

S3 and Debugging

S4 and R5

## **11 - Loops**

Expected Values

expand.grid

for Loops

while Loops

repeat Loops

## **12 - Speed**

Vectorized Code

How to Write Vectorized Code

How to Write Fast for Loops in R

Vectorized Code in Practice

Loops Versus Vectorized Code

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