Overview

R is an interpreted programming language (hence also called a scripting language), that means that your code does not have to be compiled before running it. This is a high-level language in which you do not have access to the inner workings of computer where you are running your code; everything is leaning toward helping you analyze data which is advantageous.

R provides a mixture of programming paradigms. At its interior / foundation, it is an imperative type of language where you can write a script which does one calculation after another (one at a time), but it also supports object-oriented features where data and functions are encapsulated inside classes and also functional programming wherein functions are first-class objects and you treat them like any other variable. This mixture of programming paradigms tells that R code can bear a lot of resemblance to several other languages. The curly braces mean – you can code imperative code which will look like C.

**Uses of R**

* Weather Service uses R to predict severe flooding.
* Social networking companies are using R to monitor their user experience.
* Newspapers companies are using R to create infographics and interactive data journalism applications.

R is adopted by the major companies because their data scientists prefer to use it.

**Features of R**

As described earlier, R programming language is versatile and can be used for software development environment for statistical analysis or for graphics representation and reporting purposes.

The below mentioned are the significant features of R language:

* R is simple and effective programming language which has been well-developed, as well as R is data analysis software.
* R is a well – designed, easy and effective language that has the concepts of conditionals, looping, user-defined recursive procedures and various I/O facilities.
* R has a large, consistent and incorporated set of tools used for data analysis.
* R contains suite of operators for different types of calculations on arrays, lists and vectors.
* R provides highly extensible graphical techniques.
* R graphical techniques for data analysis output either directly display to the computer, or can be print on paper.
* R has an effective data handling and storage facility.
* R is an online vibrant community.
* R is free, open source, powerful and highly extensible.

**Evolution of R**

In most of the time, you should be clear from the context that R is being referred to. R (which is the language) was developed in the early 1990’s by Ross Ihaka and Robert Gentleman, when they both work at Department of Statistics at the University of Auckland, New Zealand. R made its first appearance in the year 1993. This programming language is based upon the S language which was developed in 1970s at Bell Laboratories, mainly by John Chambers. R (which is the software) is a GNU based project that reflects its status as important free along with open source software. Both the language along with the software is now developed by a group of 20 people approx. known as R Core Team.

R is the most widely used statistical programming language because of various reasons.

* R is free and an open source software project.
* R allows to integrate with other languages, like C/C++, Java, Python etc.
* R has an online vibrant growing community of users.
* The CRAN (The Comprehensive R Archive Network) package repository features has more then 8270 available packages.
* R is platform-independent, so you can use it on any operating system.