Why R?

Here's why you should learn R. It is a data analytics tool that has many advantages. This language helps in performing statistical tests, data analyses, creating models, and provides ways to manage and manipulate data.

We'll cover the following

What is R?

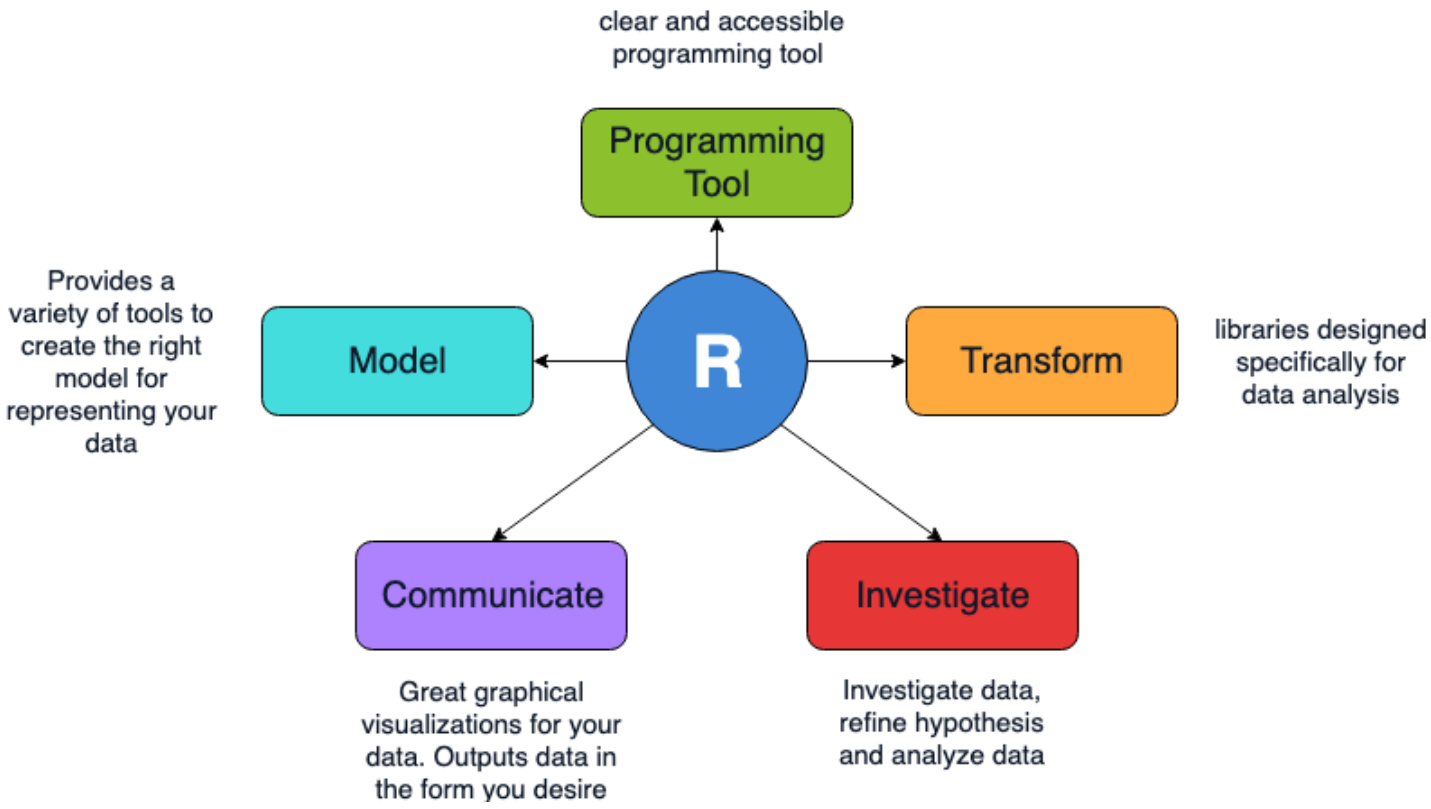
`R` is a **programming language**. It provides a free software environment for statistical computing and graphics. We can use R language to perform many interesting tasks such as **linear regression**, **time series**, **statistical inference**, etc. We can also write all the latest statistical and graphical programs using R.

For example, a statistician can use R language to find the most expensive item sold in a supermarket from its sales dataset. Or; a telecom operator could investigate operational optimizations by running simulations in R. R language makes programming easy and provides many tools for developers. It also makes it easy to build GUIs(Graphical User Interface).

Why study R?

`R` is used for:

1. Statistical inference
2. Data analysis
3. Machine learning
4. Executing scientific simulations
5. Operations research



Some of the advantages of R language

The illustration above provides a map of major advantages that R provides: creating models, programming, creating graphical outputs, investigating and analyzing data, etc.

R and Data Analysis

Today, **Data Analysis** shapes the way companies run their businesses. We can deal with data in many ways:

1. Importing data
2. Preprocessing data
3. Selecting features from data
4. Modeling and representing data

As you might know, there are plenty of tools available in the market to perform data analysis. So where does R language fit in? R language can provide good insight into your data and help you do all kinds of fun things with it.

It is an open source language, meaning it is free, which makes it attractive for people who want to practice and learn data science. There are over 4800 packages available in R language which belong to various repositories specializing in

various topics. Some of these include **economy**, **data mining**, **spatial analysis**, and **bioinformatics**.

It is cross-platform compatible which means that it runs on many operating systems as well as hardware. Along with being extremely comprehensive, it is fun and flexible to use. It is an advanced statistical tool that provides great graphical visualizations.

R vs. Python

R and **Python** are both **open-source programming languages** so new libraries and tools are continuously being added to them. Most of the tasks that can be performed through R can also be done using Python. However, R language is mainly used for **statistical analysis** while Python provides a more general approach to **data science**.

R is a language specifically built by statisticians and is better for **analytical tasks**. Another difference between R and other languages is the array of outputs and visuals available for data analysis. There are many tools in R to communicate results that other languages do not have.

Now, that we have given plenty of reasons to **learn R language** let's move on to who this course is for.