1. Introduction to R

## 1.1 History of Computer Programming

**What do you mean by the term programming language ?**

* To instruct the computer we need to speak in their language.
* Computers understand binary (Machine Language) but speaking that is very difficult.
* So generation by generation people tried to go closer to english and move away from technical details (Principle of abstraction).

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| **Year** | **Generation** | **Languages** |
| 1990’s | Fourth Generation(4GL) | R, Java, Python |
| 1970’s | Third Generation (3GL) | Fortran, Basic , C , C++ |
| 1960’s | Second Generation (2GL) | Assembly Language |
| 1950’s | First Generation (1GL) | Machine Language |

***Computer Programming Through Yearwise Generations***

## 1.2 Definition of R

**Definition**

R is a general purpose, multi-platform, object oriented, interpreted programming language that is used for computational statistics, analysis and the hard sciences, for example, astronomy, chemistry, and genomics to practical applications in business, finance, health care, marketing, medicine etc.

* Created by Ross Ihaka and Robert Gentleman in 1992
* Current version of R is 3.6.2.

**Features of R:**

1. **Easy**
2. **Object Oriented**
3. **Interpreted**
4. **Extensive Library / Modules**
5. **Free & Open Source**

## 1.3 Installation of R and R Studio

1. Open official R website <https://cran.r-project.org/> and click Download R for either windows / mac / linux as per your operating system.
2. The commonly used IDE (Integrated Development Environment) for R is RStudio. Download RStudio from the following website <https://rstudio.com/products/rstudio/download/> and click download RStudio for either windows / mac / linux as per your operating system.

## 1.4 First Program

Open RStudio -> File -> New File -> R Script and save it as **hello.R**.

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| **print(“Hello World”)**  **print(“Welcome to python”)** |

Select the entire code and click the run button or press Ctrl+Enter.