



## **Technocation Freelancing Training Institute & Software House**

### **R Programming Training Certification Course Outline**

#### **MODULE 1: Introduction to R**

- R is a language for data.
  - It is easy and fun to learn.
  - We use it for numbers and charts.
  - Kids can explore data like a game.
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#### **MODULE 2: Installing R and RStudio**

- Download R software.
  - Install RStudio for coding.
  - Open RStudio workspace.
  - Get ready to type code.
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#### **MODULE 3: Basic R Commands**

- Print text with `print()`.
  - Do math with `2+2`.
  - Use `#` for notes.
  - Run commands step by step.
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#### **MODULE 4 : Working with Variables**

- Store numbers in names.
  - Example: `x <- 5`.
  - Use variables in math.
  - Variables save answer
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#### **MODULE 5: Data Types**

- Numbers are numeric.
- Words are characters.

- True/False are logical.
- R understands all types.

## **MODULE 6: Vectors in R**

- Vectors store many values.
  - Example: `c (2,4,6)`.
  - Do math on vectors.
  - Vectors are like lists.
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## **MODULE 7: Matrices**

- A matrix is like a table.
- Rows and columns make it.
- Use `matrix ()` to create.
- Store numbers neatly.

## **MODULE 8: Data Frames**

- Data frame is like Excel.
- It holds rows and columns.
- Use `data. Frame ()` to make.
- Good for real-world data.

## **MODULE 9: Factors**

- Factors are categories.
- Example: Boys, Girls.
- R treats them as labels.
- Use `factor ()` for this.

## **MODULE 10: Basic Plots**

- Use `plot ()` for graphs.
- Draw points and lines.
- Make bar charts in R.
- Graphs make data fun.

## **MODULE 11: Functions in R**

- Functions do tasks.
- Example: `sum(1, 2, 3)`.
- You can write your own.
- Functions save time.

## **MODULE 12: If-Else in R**

- Use if for decisions.
- Example: if number > 10.
- Else runs another code.
- Helps R choose actions.

## **MODULE 13: Loops**

- Loops repeat tasks.
- For loop counts items.
- While loop runs until stop.
- Loops save typing.

## **MODULE 14: Real Data Handling**

- Read CSV files in R.
- Use `read.csv()` command.
- Explore data inside.
- Practice with school data.

## **MODULE 15: Certification Project**

- Make a small R project.
- Example: Student marks chart.
- Show data in a graph.

- Get “Junior R Programmer” Certificate.

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