

R PROGRAMMING COURSE - 1 MONTHS

MODULE 1: R LANGUAGE FUNDAMENTALS

- ✓ Variables and data types
- ✓ Numeric, character, logical types
- ✓ Type conversion (as.numeric(), as.character(), etc.)
- ✓ Constants in R
- ✓ Commenting code
- ✓ Basic operators:
- ✓ Arithmetic
- ✓ Relational
- ✓ Logical
- ✓ Assignment (<-, =)

MODULE 2: DATA STRUCTURES IN R

- ✓ Vectors
- ✓ Matrices
- ✓ Arrays
- ✓ Factors (categorical data)
- ✓ Lists
- ✓ Data frames
- ✓ Type checking (class(), typeof(), is.vector())

MODULE 3: CONTROL FLOW

- ✓ if, if-else, else if statements
- ✓ for loop
- ✓ while loop
- ✓ repeat loop
- ✓ break and next

MODULE 4: FUNCTIONS IN R

- ✓ Defining and calling functions
- ✓ Function arguments (default, named)
- ✓ Return values
- ✓ Variable scope (local vs global)
- ✓ Anonymous functions (function())

MODULE 5: WORKING WITH DATES AND STRINGS

- ✓ Date and POSIXct classes
- ✓ Date conversion and formatting (as.Date(), format())
- ✓ String manipulation with stringr:
- ✓ str_length(), str_sub(), str_replace()
- ✓ Regular expressions in R

MODULE 6: PROJECT WORK S PRACTICE

- ✓ Mini-project ideas:
- ✓ Exploratory Data Analysis on a CSV dataset
- ✓ Weather data visualization
- ✓ COVID-19 trend analysis
- ✓ Stock market data analysis
- ✓ Debugging in R (traceback(), browser())

