

C Language Teaching Guide (8 Weeks)

Week 1 – Basics of C

- Topics: Variables, printf, scanf, Operators
- Real-World Example: ATM machine storing balance & PIN
- Code Example: Display balance and PIN using variables.
- Exercises: Simple calculator, ATM balance check

Week 2 – Decision Making

- Topics: if, else, switch
- Real-World Example: Traffic Light Controller
- Code Example: Use if/else to simulate traffic light (Red/Green/Yellow).
- Exercises: Grade calculator, menu-driven program

Week 3 – Loops

- Topics: while, for, do while
- Real-World Example: ATM multiple withdrawals until balance < 1000
- Code Example: Loop that keeps withdrawing until balance < 1000.
- Exercises: Multiplication table, factorial, sum of numbers

Week 4 – Arrays

- Topics: 1D and 2D arrays
- Real-World Example: Online shopping – storing prices and applying discounts
- Code Example: Array storing 5 prices and applying 10% discount.
- Exercises: Student marks average, matrix addition

Week 5 – Strings & Functions

- Topics: Strings, string functions, user-defined functions

- Real-World Example: Login system with password check
- Code Example: Compare entered password with stored password.
- Exercises: Palindrome check, string comparison, calculator using functions

Week 6 – Pointers & Memory

- Topics: Pointers, pointer arithmetic
- Real-World Example: Swapping values using pointers
- Code Example: Swap two numbers using pointers.
- Exercises: Pointer-based array traversal, pointer to function

Week 7 – Structures & Files

- Topics: Structures, nested structures, file handling
- Real-World Example: Student Report Card stored in file
- Code Example: Save student marks and grade into a file.
- Exercises: Library system, employee salary record

Week 8 – Mini Projects & Revision

- Projects: ATM System (PIN, balance, withdraw, deposit)
- Projects: Online Shopping Cart (arrays + discounts)
- Projects: Student Report Card (structures + files)
- Real-World Application: Mix of all learned concepts