

C Programming using Linux

Topic 1: Introduction to C Programming:

Features of C and its Basic Structure, Simple C programs, Constants, Integer Constants, Real Constants, Character Constants, String Constants, Backslash Character Constants, Concept of an Integer and Variable, Rules for naming Variables and assigning values to variables

Topic 2: Operators and Expressions:

Arithmetic Operators, Unary Operators, Relational and Logical Operators, The Conditional Operator, Library Functions, Bitwise Operators, The Increment and Decrement Operators, The Size of Operator, Precedence of operators.

Topic 3: Data Types and Input / Output Operators:

Floating-point Numbers, Converting Integers to Floating-point and vice-versa, Mixed-mode Expressions, The type cast Operator, The type char, Keywords, Character Input and Output, Formatted input and output, The gets() and puts() functions, Interactive Programming.

Topic 4 : Control Statements and Decision Making:

The goto statement, The if statement, The if-else statement, Nesting of if statements, The conditional expression, The switch statement, The while loop, The do...while loop, The for loop, The nesting of for loops, The break statement and continue statement.

Topic 5 : Arrays and Strings:

One Dimensional Arrays, Passing Arrays to Functions, Multidimensional Arrays, Strings

Topic 6: Pointers – I:

Basics of Pointers, Pointers and One-dimensional Arrays, Pointer Arithmetic, Pointer Subtraction and Comparison, Similarities between Pointers and One-dimensional Arrays.

Topic 7: Structures and Unions:

Basics of Structures, Arrays of Structures, Pointers to Structures, Self-referential Structures, Unions.

Topic 8: Functions:

Function Philosophy, Function Basics, Function Prototypes, and Passing Parameters: Passing Parameter by value and Passing Parameter by reference, passing string to function, Passing array to function, Structures and Functions Recursion

Topic 9: Storage Classes:

Storage Classes and Visibility, Automatic or local variables, Global variables, Static variables, External variables

Topic 10: Dynamic Memory Allocation and Linked List:

Dynamic Memory Allocation, Allocating Memory with malloc, Allocating Memory with calloc, Freeing Memory.