CAP010:PROGRAMMING IN C

L:0 T:0 P:6 Credits:0

Course Outcomes: Through this course students should be able to

CO1 :: define the basic concepts of computer programming

CO2 :: understand sequential steps or procedures to solve any given problem

CO3 :: apply the knowledge of pointers and dynamic memory allocation to make reliable and error free programs

CO4 :: analyze various I/O operations to perform manipulation on the data stored in the files.

Unit I

Introduction : introduction to programming language, machine languages, assembly languages and high level languages, program development in C, the C character set, identifiers and keywords, data types, constants and variables, unformatted and formatted I/O functions- printf(), scanf(), puts (), gets(), getchar(), putchar(), expressions

Unit II

Operators and Control Structures : arithmetic operators, unary, relational, logical, assignment and conditional operator, bitwise operators, type conversion and type modifiers, if and if else, switch case, while and do-while, for statement, break and continue statements, goto statement

Unit III

Functions and Arrays : function definition and prototypes, scope rules - local and global scope, passing arguments by value and passing arguments by reference, recursion, library functions, return statement, storage classes, declaring arrays, defining and processing 1d and 2d arrays, defining and processing of multidimensional arrays, passing arrays to functions, character arrays

Unit IV

Pointers and Strings : pointer data type, pointer declaration, initialization, accessing values using pointers, pointer expressions and arithmetic, operations on pointers, pointers and arrays, array of pointers, defining and initializing string, reading and writing a string, processing of string, string library functions

Unit V

Dynamic Memory Management and Structures : dynamic memory management functions (malloc, calloc, realloc and free), structures-declaration, definition and initialization, accessing of structure elements, passing structures to functions, nested structures and unions

Unit VI

File Structures : categories of files, opening and closing files, text and binary files, reading and writing in files, appending in files, preprocessor directives and macros

Text Books:

1. PROGRAMMING IN ANSI C by E.BALAGURUSAMY, Tata McGraw Hill, India

References:

1. PROGRAMMING WITH C by GOTTFRIED, MCGRAW HILL EDUCATION
2. PROGRAMMING IN C by ASHOK KAMTHANE, PEARSON