Computer Science

C/C++ Programming

Introduction to Computers

- Basic hardware and software concepts.
- The different types of programming languages.
- C/C++ Integrated Development Environment (IDE).
- Demonstration (Installation (PC, Mac, online compiler).
- Test driving a C++ application.
- Writing a simple program in C++.

The Structure of C/C++ Program

- *main(), #include, using namespace std*.
- Output and Input: *cout, cin*.
- numeric data, character data, string data.
- data types: *int, float, double, char*.
- arithmetic operators: +, -,*, /, %
- Memory Concepts.
- Demonstration.
- Lab exercise.

Decision Making: Equality and Relational Operators

- Relational operators: >, <, >=, <=
- Equality operators: ==, !=
- Lab exercise
- Programming project.

Control Statement Statements in C/C++

- Algorithms
- Logical operators: &&, ||
- Decision/Selection constructs: *if, if...else* statements.
- Repetition: *while* statement, sentinel-controlled repetition.
- An introduction to counter controlled repetition, the increment and decrement operators.
- Lab exercise.
- Programming project.

Control Statements

- The essentials of counter-controlled Repetition.
- The *for* repetition statement.
- Examples using the *for* statement.
- *do...while* repetition statement.
- *switch* multiple selection statement.
- Lab exercise.
- Programming project.

Functions in C/C++

- Software reusability.
- Math Library functions.
- User-defined functions.
- Function Definitions.
- Demonstration.
- Lab exercise.
- Programming project.

Functions in C/C++

- Lab exercise
- Graphics library demonstration.
- Using a graphics library.
- Drawing on the computer.
- Student programming project.

Graphics Programming

Student programming project.

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