

C Programming for Beginners - Master the C Language

Topics

- Overview of C - efficient, portable, power and flexibility, programmer oriented.
- Language Features - imperative languages, top-down planning, structured programming, and modular design.
- Advantages of using C - small, fast programs, reliable, easy to learn and understand.
- How to use a Modern, cross-platform IDE (Micro VS code) to write, edit and debug your C code.
- Basic C concepts - structure of a program, comments, output using printf, "hello world".
- Makefiles - how to build
- Variables - declaring and using
- Data Types - int, float, double, char, etc. (as well as enum and type definitions)

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- Basic operators - logical, arithmetic and assignments
- Conditional statements - making decisions (if, switch)
- Repeating code - looping (for, while, and do-while)
- Arrays - defining and initializing, multi-dimensional
- Functions - declaration and use, arguments and parameters, call by value vs. call by reference.
- Debugging - call stack, common mistakes, understanding compiler messages.
- Structures - initializing, nested structures, unions
- Character Strings - basics, arrays of chars, character operators
- Pointers - definition and use, using with functions and arrays, malloc, pointer arithmetic.
- The preprocessor - #define, #include.

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- Input and Output - getch, scanf
- File Input/Output - reading and writing to a file, file operations.
- Standard C Library - string functions, math functions, utility functions, standard header files.