€TRAINING

CLE C Certified Entry Level Programmer

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Introduction:

This program is designed to prepare participants for the certification exam only.

This training program is designed to provide foundational programming skills in C, one of the most widely used programming languages. It covers the basics of C programming, from syntax and data structures to algorithms and debugging, preparing participants for the CLE-C certification exam.

Program Objectives:

By the end of this program, participants will be able to:

- Master the basic syntax and semantics of the C programming language.
- Understand and apply fundamental programming concepts such as variables, data types, and control structures.
- Develop and troubleshoot simple C programs using standard I/O and file operations.
- Implement basic algorithms and data structures in C.
- Prepare effectively for the CLE-C certification exam.

Targeted Audience:

- Entry level programmers seeking to gain a formal qualification in C.
- Professionals needing to understand C programming for technical job requirements.

Program Outline:

Unit 1:

Introduction to C Programming:

- Overview of C programming language and its applications in various industries.
- Setting up the development environment for C programming.
- Basic syntax and structure of a C program.
- Understanding variables, data types, and expressions.

- How to write simple programs to demonstrate basic C syntax.

Unit 2:

Control Structures and Functions:

- Implementing control structures: if statements, loops, and switch cases.
- Using functions for structured programming: declaration, definition, and invocation.
- Exploring scope, external variables, and storage classes.
- Practical exercises to solidify understanding of control structures and functions.
- Debugging techniques for common errors in using functions and control structures.

Unit 3:

Data Structures and Memory Management:

- Introduction to arrays, strings, pointers, and structures in C.
- Manipulating data using arrays and pointers.
- Understanding dynamic memory allocation: malloc, calloc, realloc, and free.
- Implementing simple data structures such as linked lists.
- Best practices for memory management in C.

Unit 4:

File Handling and I/O Operations:

- Basic file operations in C: opening, reading, writing, and closing files.
- Using formatted I/O functions from the standard library.
- Error handling in file operations.
- Practical examples of file manipulation using C.
- Advanced I/O operations using command line arguments and environment variables.

Unit 5:

Preparing for the CLE-C Certification Exam:

- Overview of the CLE-C certification exam structure and content.
- Effective resources for exam preparation.
- Exam sample questions and answers.
- Final tips and guidance for passing the CLE-C exam.

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