WEBGURUKUL
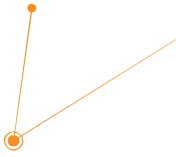
सर्व हिताय शिक्षा

WEBGURUKUL
C PROGRAMMING
LANGUAGE
COURSE

*''Don't simply dream of success;
instead, put in the effort to achieve it.''*
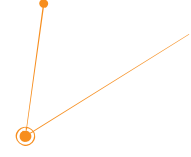
C PROGRAMMING

INTRODUCTION TO "C" LANGUAGE

1. Data Types

2. Indentation

3. The WHILE Loop

4. The FOR Loop

5. Nested Loop Statements

6. The BREAK and CONTINUE Statements

7. Bitwise Operators

FUNCTIONS

1. Introduction to Functions

2. The Importance of Functions

3. Standard and User-Defined Functions

4. Creating Custom Header Files

5. Distinction Between Source Files and Executable Files

6. Generating Executable Files

7. Exploring Storage Classes

8. Pass by Value and Pass by Reference

9. Returning Values by Value and by Address

10. Recursive Functions

POINTER

1. Memory Concepts

2. Pointers to Variables

3. Pointers to Pointers

4. Pointer Operations

ARRAYS

1. Introduction to Arrays

2. The Importance of Arrays

3. Working with Arrays and Pointers

4. Utilizing Arrays in Functions

5. Array Types

6. One-Dimensional Arrays

7. Two-Dimensional Arrays

8. Multi-Dimensional Arrays

STRINGS

1. Character Pointers

2. Character Arrays (Strings)

3. Declaring and Initializing Strings

4. String Variables

5. Working with Strings Using Pointers

6. Using Functions with Strings
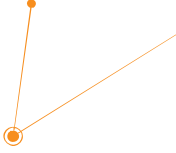
7. Creating a Custom string.h

8. Arrays of Strings

9. Preprocessing with #define

STRUCTURE, UNIONS, ENUM AND TYPEDEF

1. Enums and Typedef

2. Introduction to Structures

3. Defining Structures

4. Structures with Pointers, Arrays, Strings, and Functions

5. Using Arrays and Strings as Structure Members

6. Container Relationships

7. Unions and the Distinction Between Structures and Unions


GRAPHICS PROGRAMMING

1. Text Mode

2. Graphics Mode

FILE OPERATIONS

1. File Introduction

2. File Types

3. File Pointers

4. File Operations: Open and Close

5. File Modifications and Deletions

6. Creating Databases with File Operations

7. Handling Command Line Arguments

DYNAMIC MEMORY ALLOCATION (DS)

1. Dynamic Memory Allocation Purpose

2. Memory Allocation Functions: malloc, calloc, realloc, and free

3. Sorting Techniques

4. Understanding Recursion

5. Exploring Lists

6. Single Linked Lists

7. Double Linked Lists
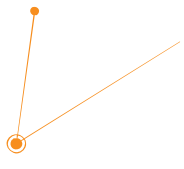
8. Circular Linked Lists

9. Stacks and Their Operations

10. Queues and Their Operations

11. Combining Two Lists

12. Inserting a Node at a Specific Position

13. Deleting a Node from a Specified Position

C++ PROGRAMMING

GRADUATING TO C++ (BEGINNING)

1. Object-Oriented Programming Concepts

2. Function Prototypes

3. Comments in Code

4. Typecasting

5. Understanding Void Pointers

6. Utilizing the:: Operator

7. The Role of the Const Qualifier

8. Reference Variables

FUNCTIONS

1. Function Prototypes

2. Function Overloading

3. Default Function Arguments

4. Call by Value, Address, and Reference

5. Return by Value, Address, and Reference

6. Inline Functions
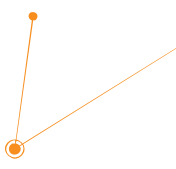
CLASSES IN C++

1. Member Functions

2. Defining Functions Outside the Class

3. Classes and Constructors

4. Destructors

5. Copy Constructors

6. Understanding the "this" Pointer

7. New and Delete Operators

8. Utilizing new and delete

9. Comparing malloc() / free() with new/delete

10. Classes, Objects, and Memory

11. Structures vs. Classes

MISCELLANEOUS CLASS ISSUES

1. Static Class Data

2. Static Member Functions

3. Data Conversion

4. Friend Functions and Friend Classes

5. Data Conversion Between Objects of Different Classes

OVERLOADING OPERATOR

Certainly, here's a more concise version:

1. Introduction

2. Overloading the Assignment Operator

3. Overloading Arithmetic and Logical Operators

4. Overloading Operators for Different Object Types
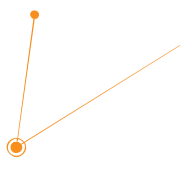
5. Overloading Stream Operators (<< and >>)

INHERITANCE

1. Constructors in Inheritance

2. Private and Protected Inheritance

3. Inherited Functions Considerations

4. Virtual Functions

5. Pure Virtual Functions

6. Virtual Functions in Derived Classes

7. Virtual Functions and Constructors

8. Destructors and Virtual Destructors

9. Virtual Base Classes

10. Abstract Classes

11. Abstract Base Classes

ADVANCED FEATURES

1. Nested Classes

2. Friend Functions and Classes

3. Overloading Stream Operators (<< and >>)

INPUT/ OUTPUT IN C++ (FILE OPERATIONS)

1. Using Manipulators

2. File Input and Output with Streams

3. File Operations: Opening and Closing

4. Database Creation with File Operations

5. Binary Input and Output

6. Basic Database Management
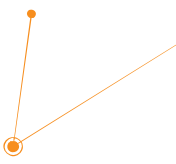
7. Handling Text and Non-Text Files

8. Creating Databases through File Operations

NEW ADVANCED FEATURES

1. Templates: Function and Class

2. Exception Handling

3. Using Namespaces

4. Runtime Type Information (RTTI)

5. Standard Template Library (STL)

6. Dynamic Cast Operator

7. Typeid Operator

8. Typeinfo Class

DATA STRUCTURE WITH C++

1. Sorting

2. Recursion

3. Lists: Single, Double, and Circular

4. Traversing Linked Lists

5. Stacks

6. Queues

7. Combining Two Lists

8. Inserting a Node at a Specified Position

9. Deleting a Node from a Specified Position

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