

# C++

## Overview

- C++ Characteristics
- Object-Oriented Terminology
- Polymorphism
- Object-Oriented Paradigm
- Abstract Data Types
- I/O Services
- Standard Template Library
- Standards Compliance
- Functions and Variables
- Functions: Declaration and Definition
- Variables: Definition, Declaration, and Scope
- Variables: Dynamic Creation and Derived Data
- Arrays and Strings in C++
- Qualifiers

## Classes in C++

- Defining Classes in C++
- Classes and Encapsulation
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- Instantiating and Using Classes
- Using Constructors
- Multiple Constructors and Initialization Lists
- Using Destructors to Destroy Instances

## Operator Overloading

- Operator Overloading
- Working with Overloaded Operator Methods

## Initialization and Assignment

- Initialization vs. Assignment
- The Copy Constructor
- Assigning Values
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## Storage Management

- Memory Allocation
- Dynamic Allocation: new and delete

## Inheritance

- Overview of Inheritance
- Defining Base and Derived Classes
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## Polymorphism

- Overview of Polymorphism

## **Input and Output in C++ Programs**

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## **Exceptions**

- Exceptions
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- Template Overview
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