C++ Inheritance - Complete Notes

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What is Inheritance?

Inheritance is a mechanism where a child class gets properties and behaviors of a parent class.

Syntax:

class Base { ... };

class Derived : public Base { ... };

Types of Inheritance:

1. Single

2. Multilevel

3. Hierarchical

4. Multiple

5. Hybrid

Access Specifiers:

- public: public/protected stay the same

- protected: all become protected

- private: all become private

Constructor Order:

Base class constructor is called before derived class constructor.

Function Overriding:

C++ Inheritance - Notes and Practice

class A { virtual void f(); };

class B : public A { void f() override; };

Practice Problem 1:

Shape -> Circle, Rectangle with overridden area()

Practice Problem 2:

Person -> Employee -> Manager with name, ID, department

Quiz:

Q1. What type of inheritance is A -> B -> C?

Ans: Multilevel

Q2. Which constructor runs first in inheritance?

Ans: Base class

Q3. Keyword used for overriding?

Ans: override

Summary Table:

Concept	Description
Inheritance	Reuse via base class
Constructor	Base -> Derived
Overriding	Redefine method in derived class
Virtual	Enables runtime polymorphism