In this article, I am going to discuss Types of Inheritance in C# with Examples. Please read our previous article, where we

Types of Inheritance in C# What these types of Inheritance will tell us is the number of parent classes a child class has or the number of child classes a

picture from C++ only, there are five different types of Inheritances. 1. Single Inheritance Multi-Level Inheritance 3. Hierarchical Inheritance

parent class has. According to C++, why I am telling about C++ is because Object-Oriented Programming came into the

(Derived Class) As you can see in the above image, if we have a class called A that is the Parent class and another class called B that is the Child class, and class B is inheriting from class A. I.e. Class B has a single Parent class i.e. class A. This type of inheritance is called Single Inheritance.

**Multilevel Inheritance:** When a derived class is created from another derived class, then such a type of inheritance is called Multilevel Inheritance. For a better understanding, please have a look at the below image. (Base Class 1)

(Base Class 2)

If there is a class called A and from class A, class B is inheriting and from class B, class C is inheriting, then such type of inheritance is called Multilevel Inheritance. **Hierarchical Inheritance:** When more than one derived class is created from a single base class then it is called Hierarchical inheritance. For a better understanding, please have a look at the below image. (Base Class) В (Derived Class 1) (Derived Class 3)

(Derived Class 2) Now, if you have a class called A and from this class A, if more than one class inheriting i.e. class B is inheriting, class C is

When a derived class is created from more than one base class then such type of inheritance is called multiple inheritances. For a better understanding, please have a look at the below image. (Base Class 2) (Base Class 1)

(Derived Class)

**Hybrid Inheritance:** 

В C

There are two subclasses i.e. B and C which are inheriting from class A (this is Hierarchical inheritance). Then from B and C,

there is one more class that is D inherits from B and C. Now, this is a combination of hierarchical inheritance from the top and

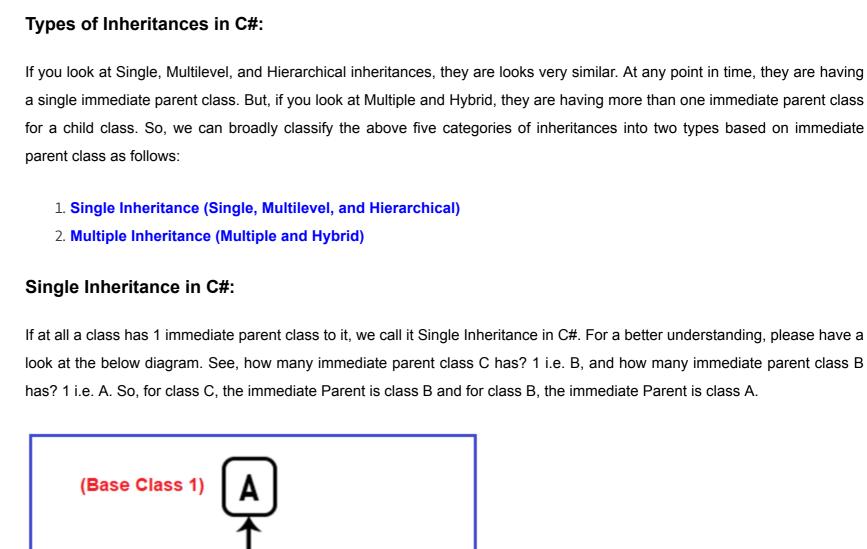
multiple inheritances (D is inheriting from B and C) from the bottom. Further, from A to B and from B to C i.e. Multi-level

Inheritance. So, if you have this type of inheritance then the features of base class A will be appearing in class D via class B

If there are classes A and B and from both of them class C is inheriting, then such type of inheritance is called Multiple

Hybrid Inheritance is the inheritance that is the combination of any Single, Hierarchical, and Multilevel inheritances. For a

Inheritance. So, when one class is having multiple parent classes then such type of inheritance is called Multiple Inheritance.



and class C. This type of Inheritance is called Hybrid Inheritance.

The above classification is based on C++.

Multiple Inheritance.

(Base Class 1)

using System;

namespace InheritanceDemo

public class Program

static void Main()

public class Rectangle

(Derived Class)

So, the point that you need to remember is how many immediate Parent classes a child class has. If one immediate Parent

class, call it Single Inheritance, and if more than one immediate Parent class, call it is multiple inheritance. So, there should

not be any confusion between 5 different types of inheritances, simply we have two types of inheritances.

// invoke the methods of Parent and Child classes

Console.WriteLine(\$"Volume is : {obj.Volume()}");

Console.WriteLine(\$"Perimeter is : {obj.Perimeter()}");

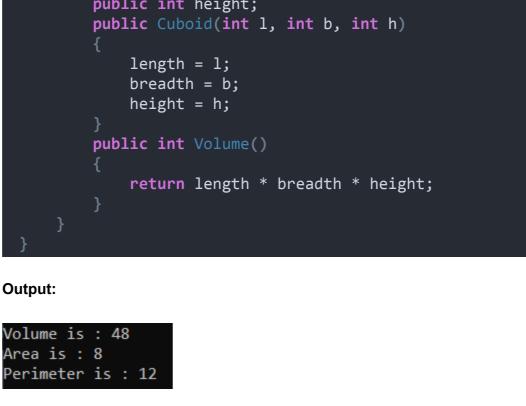
Console.WriteLine(\$"Area is : {obj.Area()}");

// Creating object of Child class and

Cuboid obj = new Cuboid(2, 4, 6);

Example to Understand Single Inheritance in C#:

Console.ReadKey();



// Creating object of Child class and

SmartPhone obj = new SmartPhone(); ;

// invoke the methods of Parent classes and Child class

**Example to Understand Multiple Inheritance in C#:** 

obj.GetPhoneModel(); obj.GetCameraDetails();

obj.GetDetails();

Console.ReadKey();

using System;

Previous Lesson

Guys,

very helpful

Inheritance in C#

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Inheritance in C#, you can also share the same.

SHADY KHALIFA

**KOMAL** 

A big thankyou to you!

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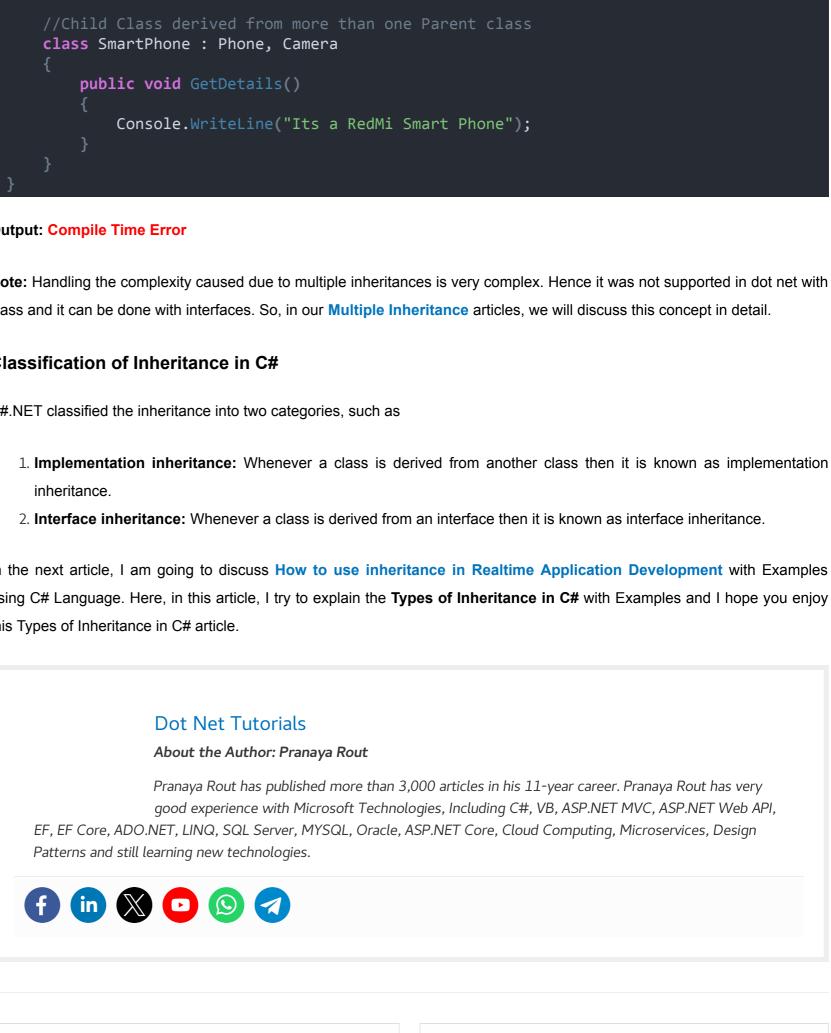
Please give your valuable feedback. And also, give your suggestions about this Type of Inheritance in the C# concept. If you have

any better examples, you can also put them in the comment section. If you have any key points related to the Type of

namespace InheritanceDemo

public class Program

static void Main()



**Next Lesson** 

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How to use Inheritance in Application Development

4. Hybrid Inheritance Multiple Inheritance Single Inheritance: When a class is inherited from a single base class then the inheritance is called single inheritance. For a better understanding, please have a look at the below image. (Base Class)

(Derived Class)

inheriting as well as class D is inheriting i.e. when more than one child class is inheriting from a Single Base Class, then such a type of inheritance is called Hierarchical Inheritance. **Multiple Inheritance:** 

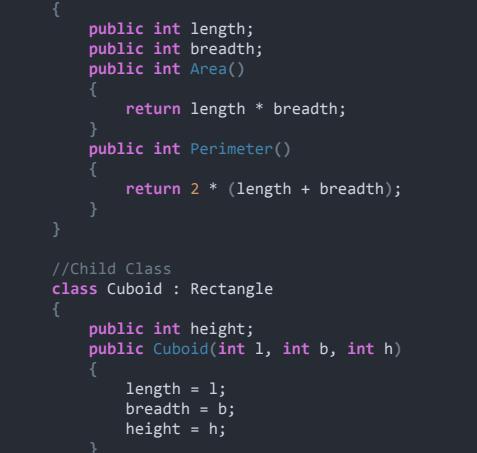
better understanding, please have a look at the below image. Α D

(Base Class 2) (Derived Class) Multiple Inheritance in C#:

If a class has more than 1 immediate parent class to it, then we call it Multiple Inheritance in C#. For a better understanding,

please have a look at the below diagram. See, class C has more than one immediate Parent class i.e. A and B and hence it is

(Base Class 2)





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