# Day 10 Assignment
# By
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1.Write the two points discussed about inheritance in the class.

- Inheritance is a process of reusing base class methods in derived class.
- The main goal of Inheritance is re-usability and to remove duplicate code.

2. Write example code for:
   a.Single inheritance
   b. Multi level inheritance

Code:

Single Level Inheritance

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace Day10Project1
{
   /*****************************************************************
    Author: Triveni Anumolu
    Purpose: Code for Single Level Inheritance
    *****************************************************************/
   class A
   {
      public int Add(int a, int b)
      {
         return a + b;
      }
      public int Sub(int a, int b)
      {
         return a - b;
      }

   }
   class B : A
```

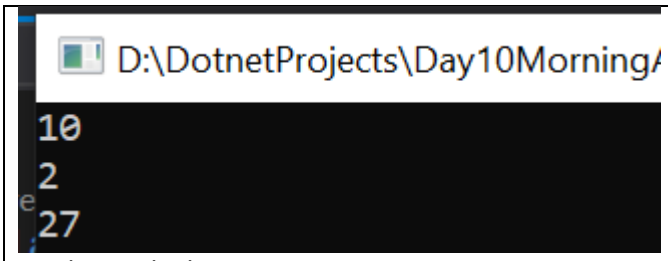
```
    {
        public int Mul(int a, int b)
        {
            return a * b;
        }
    }
    class Program
    {
        static void Main(string[] args)
        {
            B b1 = new B();
            Console.WriteLine(b1.Add(3,7));
            Console.WriteLine(b1.Sub(3, 1));
            Console.WriteLine(b1.Mul(3, 9));
            Console.ReadLine();
        }
    }
}
```

Multi Level Inheritance

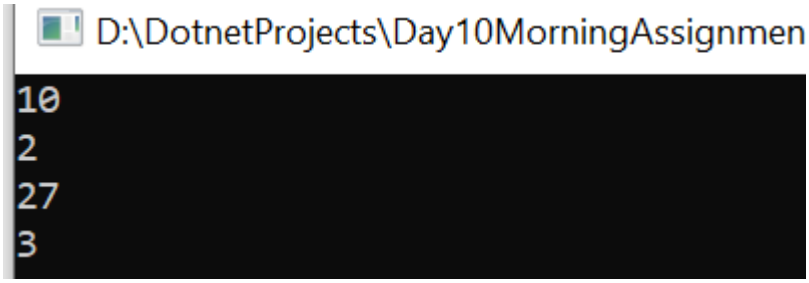
```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace Day10Project1
{
     /*****************************************************************
     Author: Triveni Anumolu
     Purpose: Code for Multi Level Inheritance
     *****************************************************************/

    class A
    {

        public int Add(int a, int b)
        {
            return a + b;
```

```
        }
        public int Sub(int a, int b)
        {
            return a - b;
        }

    }
    class B : A
    {
        public int Mul(int a, int b)
        {
            return a * b;
        }
    }
    class C : B
    {
        public int Div(int a, int b)
        {
            return a / b;
        }
    }
    class Program
    {
        static void Main(string[] args)
        {
            C c1 = new C();
            Console.WriteLine(c1.Add(3,7));
            Console.WriteLine(c1.Sub(3, 1));
            Console.WriteLine(c1.Mul(3, 9));
            Console.WriteLine(c1.Div(9,3));
            Console.ReadLine();
        }
    }
}
```

Result:

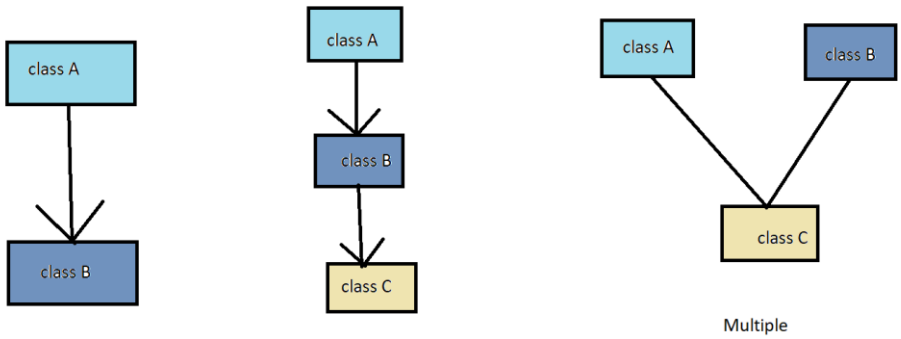



Single Level Inheritance




Multi Level Inheritance

## 3. Pictorially represent 3 types of inheritance discussed in the class



## 4.Why multiple inheritance is not supported in C#

In multiple inheritance , one class have more than one super class and inherit features from its parent class. There will be an ambiguity for sub class to inherit the properties from super classes.To overcome this we use interface to achieve multiple inheritance.

## 5.What is Polymorphism.

It is the ability of an object to have multiple forms.
Polymorphism has two types:

1. Method Overloading
2. Method Overriding

## 6.Write sample code for method overloading

Code:

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace Day10Project3
{
    /*****************************************************************
    Author: Triveni Anumolu
    Purpose: Code for method overloading
    *****************************************************************/

   class A
   {
      public int Add(int a, int b)
      {
         return a + b;
      }
      public float Sub(float a, float b)
      {
         return a - b;
      }
   }
   class Program
   {
      static void Main(string[] args)
```

```
        {
            A a1 = new A();
            Console.WriteLine(a1.Add(5,6));
            Console.WriteLine(a1.Sub(2.2f,1.2f));
            Console.ReadLine();
        }
    }
}
```

Result: