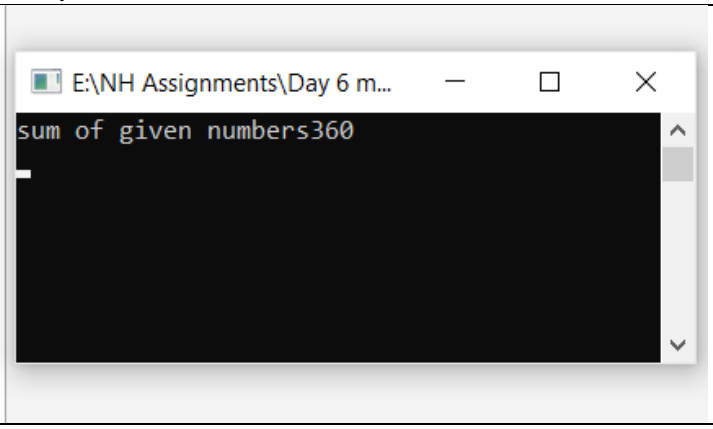
Day 6 morning assignment

Program for sum of numbers using ArrayList

Code:

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


namespace Day_6_Project_1
{
   internal class Program
   {
      static void Main(string [] args)
      {
         ArrayList data = new ArrayList();
         int sum = 0;
         data.Add(50);
         data.Add(61);
         data.Add(72);
         data.Add(83);
         data.Add(94);

         foreach(var d in data)
         {
            sum = sum + (int) d;

         }
         Console.WriteLine("sum of given numbers" + sum);
         Console.ReadLine();
      }
   }
}
```

Output :



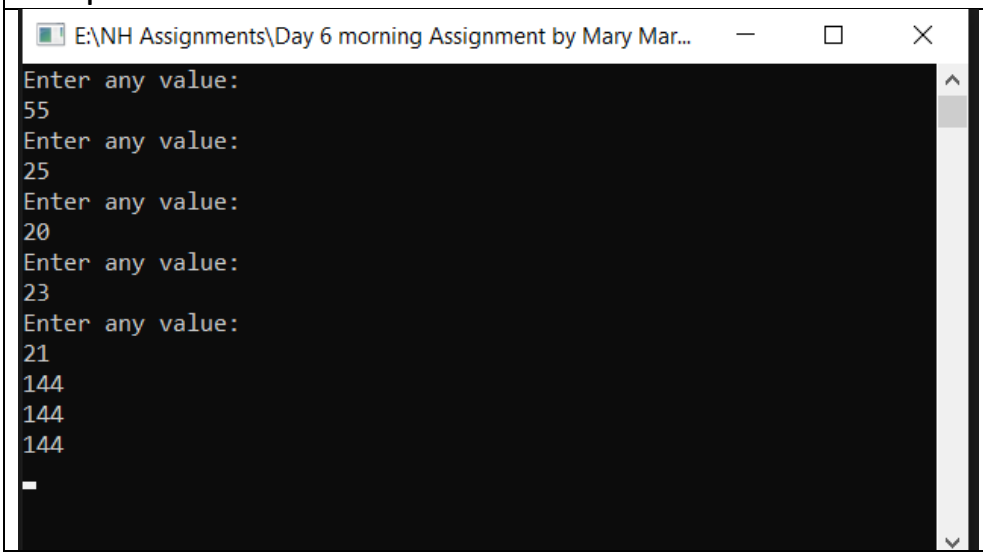
Program to declare List<int> read 5 values from user.

Code:

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

namespace Day_6_project_3
{
   internal class Program
   {
      static void Main (string [] args)
      {
         List<int> data = new List<int> ();
         int temp;
         int sum1=0, sum2=0, sum3=0;

         //Read 5 numbers from user

         for (int i=1; i<=5; i++)
         {
            Console.WriteLine("Enter any value: ");
```

```
            temp = Convert.ToInt32(Console.ReadLine());
            data.Add(temp);
        }

        //using for loop
        for (int i = 0; i < data.Count; i++)
            sum1 = sum1 + data[i];
        //using foreach loop
        foreach (var d in data)
            sum2 = sum2 + d;

        // using lamda function
        data.ForEach(d => sum3 = sum3 + d);

        Console.WriteLine(sum1);
        Console.WriteLine(sum2);
        Console.WriteLine(sum3);

        Console.ReadLine();
    }
  }
}
```

Output:

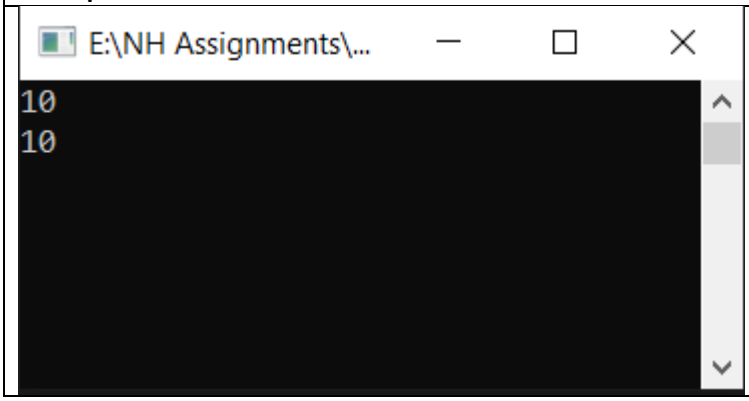


Program for Implicit and Explicit types:

Code:

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

namespace Day_6_Project_4
{
   internal class Program
   {
      static void Main (string [] args)
      {
         short p = 10;
         int q = p;
         Console.WriteLine(p);
         Console.WriteLine(q);
         Console.ReadLine();


         int a = 5;
         short b= Convert.ToInt16(a);
         Console.WriteLine(a);
         Console.WriteLine(b);
         Console.ReadLine();
      }
   }
}
```

Output:



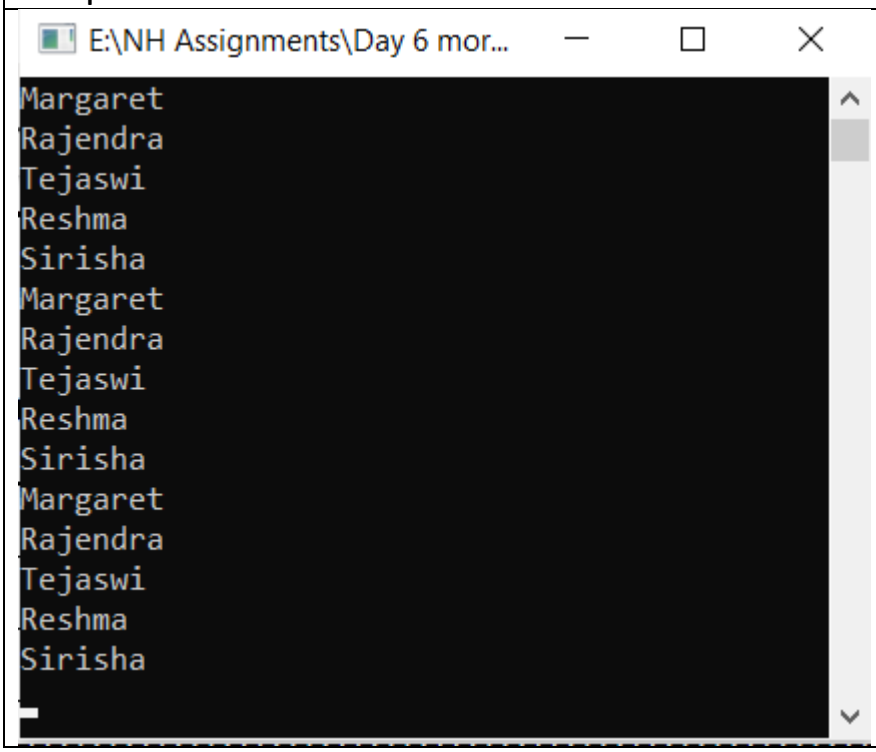
Program to declare List<string>

Code:

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

namespace Day_6_Project_5
{
   internal class Program
   {
      static void Main(string[] args)
      {
         List<string> data = new List<string>();
         data.Add("Margaret");
         data.Add("Rajendra");
         data.Add("Tejaswi");
         data.Add("Reshma");
         data.Add("Sirisha");

         //using for loop
         for (int i = 0; i < data.Count; i++)
            Console.WriteLine(data[i]);


         //using foreach loop
         foreach (var d in data)
            Console.WriteLine(d);

         // using lamda function
         data.ForEach(d => Console.WriteLine(d));
```

```
        Console.ReadLine();
    }
  }
}
```

Output:



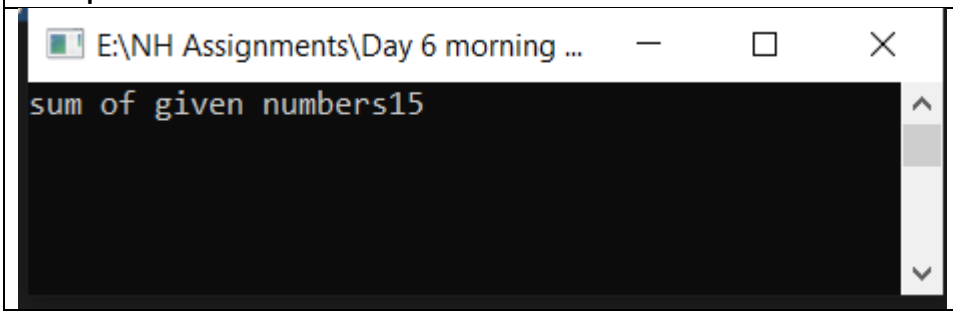
Program for sum of numbers using List<String>

Code:

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

namespace Day_6_project_2
{
  internal class Program
  {
    static void Main(string[] args)
```

```
    {
        List<int> data = new List<int>();
        int sum = 0;
        data.Add(1);
        data.Add(2);
        data.Add(3);
        data.Add(4);
        data.Add(5);

        // print values using foreach loop
        foreach (var d in data)

        {
           sum = sum + (int)d;

        }

        Console.WriteLine("sum of given numbers"   + sum);

        Console.ReadLine();

    }
  }
}
```

Output:



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What are the disadvantages of Array List

(Collection array list)?

- If there is a chance of assigning a wrong datatype then we may get runtime errors. Running time errors are dangerous than compile time errors.
- For every compilation we have to unbox the value from reference address.

Write the difference between Collections and Generics?

	Collections	**Generics**
namespace	System.Collections;	System.Colections.Generics;
Each element is of what type	Object	It can store any elements based on input.
Do you need Type casting	Yes, we need Typecasting because values are stored in heap memory.	No, we don't need type casting because values are stored in stack memory.
Example :	ArrayList data =new ArrayList();	List<int>data=new List<int>();

Data types and Alias names:

Data Type	**Alias Name**

byte	Byte
ushort	UInt16
uint	UInt32
ulong	UInt64
sbyte	SByte
short	Int16
int	Int32
long	Int64
float	Single
double	Double
decimal	Decimal
char	Char
String	String
bool	Boolean

How the values of ArrayList are stored in memory?

- In ArrayList boxed values are stored in heap memory, unboxed values are stored in stack memory.
- Values stored in ArrayList are boxed into object type then we use unboxing.

How the values of List <T> are stored in memory?

- The values in List <T> are stored in managed heap memory.

- List<T> stores objects of the same type.