Day 6 morning assignment

**Program for sum of numbers using ArrayList**

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

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| 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: |
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Program for Implicit and Explicit types:

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| 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: |
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Program to declare List<string>

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| 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: |
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**Program for sum of numbers using List<String>**

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| 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.

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**Write the difference between Collections and Generics?**

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|  | 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>(); |

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**Data types and Alias names:**

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| **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 |

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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.

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**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.