LAB SHEET 9
(Collections)

1. Write a C# code to show the concept Array List

```
using System.Collections;

namespace CSharpCollections
{
    internal class Program
    {
        static void Main()
        {
            //Usage of Array List
            ArrayList arlist1 = new ArrayList();

            //Add operations on ArrayList
            arlist1.Add(1);
            arlist1.Add("Santhosh");
            arlist1.Add(32);
            arlist1.Add(5.10F);

            Console.WriteLine("ArryList using Add operation & Using for loop");
            for (int i = 0; i < arlist1.Count; i++)
                Console.Write(arlist1[i] + ", ");

            //Remove operations on ArrayList
            arlist1.Remove("Santhosh");
            arlist1.RemoveAt(2);
            Console.WriteLine("\n After Remove operation & Using foreach loop");
            foreach(var item in arlist1)
                Console.Write(item + ", ");
        }
    }
}
```

```
Microsoft Visual Studio Debug Console
ArryList using Add operation & Using for loop
1, Santhosh, 32, 5.1,
 After Remove operation & Using foreach loop
1, 32,
C:\Users\santh\source\repos\CSharpCollections\CSharpCollections\bin\Debug\net6.0\CSharpCollections.exe (process 21336) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
```

2. Write a C# code to show the concept Stack

```
using System.Collections;

namespace CSharpCollections
{
    internal class Program
    {
        static void Main()
        {
            //Stack
            Stack stacklist = new Stack();

            //Push Operation
            stacklist.Push(1);
            stacklist.Push("Santhosh");
            stacklist.Push(32);
            stacklist.Push(5.10F);

            Console.WriteLine("Stack - With Push Operation");
            foreach(var item in stacklist)
            {
                Console.WriteLine(item);
            }

            //Pop operation
            stacklist.Pop();
             stacklist.Pop();
            Console.WriteLine("\nStack - After Pop Operation");
            foreach (var item in stacklist)
            {
                Console.WriteLine(item);
            }
        }
    }
}
```

3. Write a C# code to show the concept Queue

```
using System.Collections;

namespace CSharpCollections
{
    internal class Program
    {
        static void Main()
        {
            //Queue
            Queue queuelist = new Queue();

            //Enqueue Operation
            queuelist.Enqueue(1);
            queuelist.Enqueue("Santhosh");
            queuelist.Enqueue(32);
            queuelist.Enqueue("5.10F");

            Console.WriteLine("Queue After Enqueue Operation");
            foreach(var item in queuelist)
            {
                Console.WriteLine(item);
            }

            //Dequeue Operation
            queuelist.Dequeue();
            queuelist.Dequeue();

            Console.WriteLine("\nQueue After Dequeue Operation");
            foreach (var item in queuelist)
            {
                Console.WriteLine(item);
            }
        }
    }
}
```

4. Write a C# code to show the concept Hash table

```
using System.Collections;

namespace CSharpCollections
{
    internal class Program
    {
        static void Main()
        {
            //Hashtable
            Hashtable ht = new Hashtable();
            ht.Add("fname", "Santhosh");
            ht.Add("lname", "Kumar");
            ht.Add("age", 32);
            ht.Add("height", "5.10F");

            Console.WriteLine("Hashtable Usage");
            foreach (DictionaryEntry entry in ht)
            {
                Console.WriteLine(entry.Key + ":" + entry.Value);
            }
        }
    }
}
```

5. Write a C# code to show the concept Sorted List

```
using System.Collections;

namespace CSharpCollections
{
    internal class Program
    {
        static void Main()
        {
            //Usage of Sorted List
            SortedList sortedList1 = new SortedList();
            sortedList1.Add("fname", "Santhosh");
            sortedList1.Add("lastname", "Kumar");
            sortedList1.Add("age", 32);
            sortedList1.Add("height", "5.10F");

            Console.WriteLine("Usage of Sorted List\n");
            foreach (DictionaryEntry item in sortedList1)
            {
                Console.WriteLine(item.Key + ":" + item.Value);
            }
        }
    }
}
```

Assessment 9a:

Write a C# Program to create 10 fruit list and later remove the last 3 names from the list.

Assessment 9b:

Write a C# program to create the sorted array of 5 students details with roll number and name.