UTTARANCHAL SCHOOL OF COMPUTING SCIENCES

(UTTARANCHAL UNIVERSITY)

MASTER OF COMPUTER APPLICATIONS

SESSION 2023-2025

APPLICATION DEVELOPMENT USING .NET FRAMEWORK TECHNOLOGY

ASSIGNMENT

MCA-C201

SUBMITTED BY:-

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SEMESTER-2

SUBMITTED TO:-

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(ASSISTANT PROFESSOR)

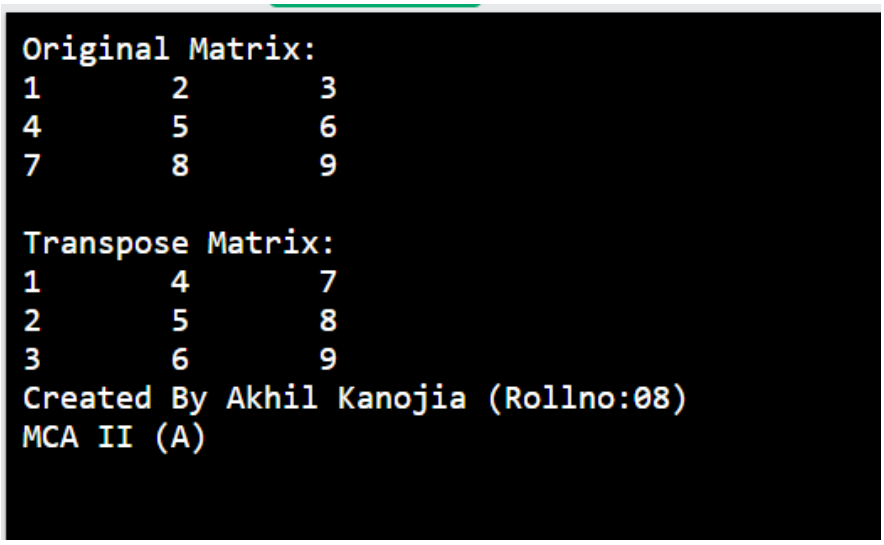
Q1. Create a 3X3 matrix with the help rectangular array in C# and display the transpose of the matrix. (CO1, BL6)

SOLUTION:-

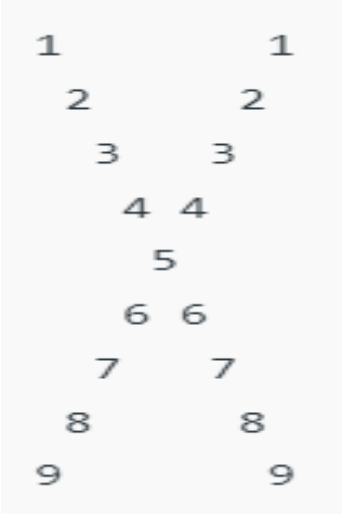
```
using System;


class Program
{
   static void Main()
   {

      int[,] matrix = {
         {1, 2, 3},
         {4, 5, 6},
         {7, 8, 9}
      };



      Console.WriteLine("Original Matrix:");
      DisplayMatrix(matrix);



      Console.WriteLine("\nTranspose Matrix:");
      DisplayMatrix(TransposeMatrix(matrix));

      Console.WriteLine("Created By Akhil Kanojia (Rollno:08)");
      Console.WriteLine("MCA II (A)");
   }



   static int[,] TransposeMatrix(int[,] mat)
   {
```

```
 int rows = mat.GetLength(0);
        int cols = mat.GetLength(1);
        int[,] transpose = new int[cols, rows];

        for (int i = 0; i < rows; i++)
            for (int j = 0; j < cols; j++)
                transpose[j, i] = mat[i, j];

        return transpose;
    }


    static void DisplayMatrix(int[,] mat)
    {
        int rows = mat.GetLength(0);
        int cols = mat.GetLength(1);

        for (int i = 0; i < rows; i++)
        {
            for (int j = 0; j < cols; j++)
            {
                Console.Write(mat[i, j] + "\t");
            }
            Console.WriteLine();
        }
    }
}
```

OUTPUT:


Original Matrix:
1 2 3
4 5 6
7 8 9
Transpose Matrix:
1 4 7
2 5 8
3 6 9
Created By Akhil Kanojia (Rollno:08)
MCA II (A)

Q2. Generate the given pattern (CO1,BL 6)

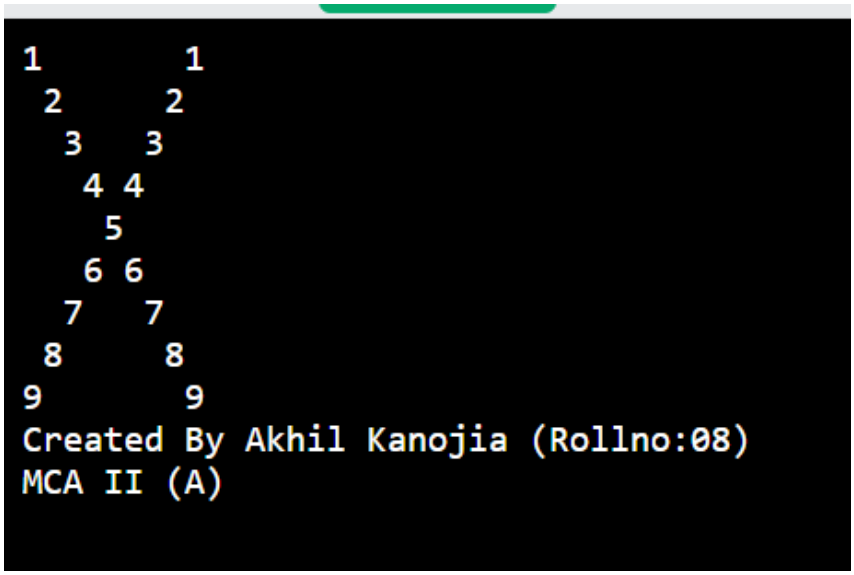


SOLUTION:

```
using System;


class Program
{
   static void Main()
   {
      int N = 5;
      int count = N * 2 - 1;


      for (int i = 1; i <= count; i++)
      {
         for (int j = 1; j <= count; j++)
         {
            if (j == i || (j == count - i + 1))
            {
               Console.Write(i);
            }
            else
            {
```

```
        Console.Write(" ");
            }
          }


          Console.WriteLine();
        }
         Console.WriteLine("Created By Akhil Kanojia (Rollno:08)");
        Console.WriteLine("MCA II (A)");


    }
}
```

OUTPUT:



Q3 Create an array list in C#.Net and perform all its method(CO1, BL6)

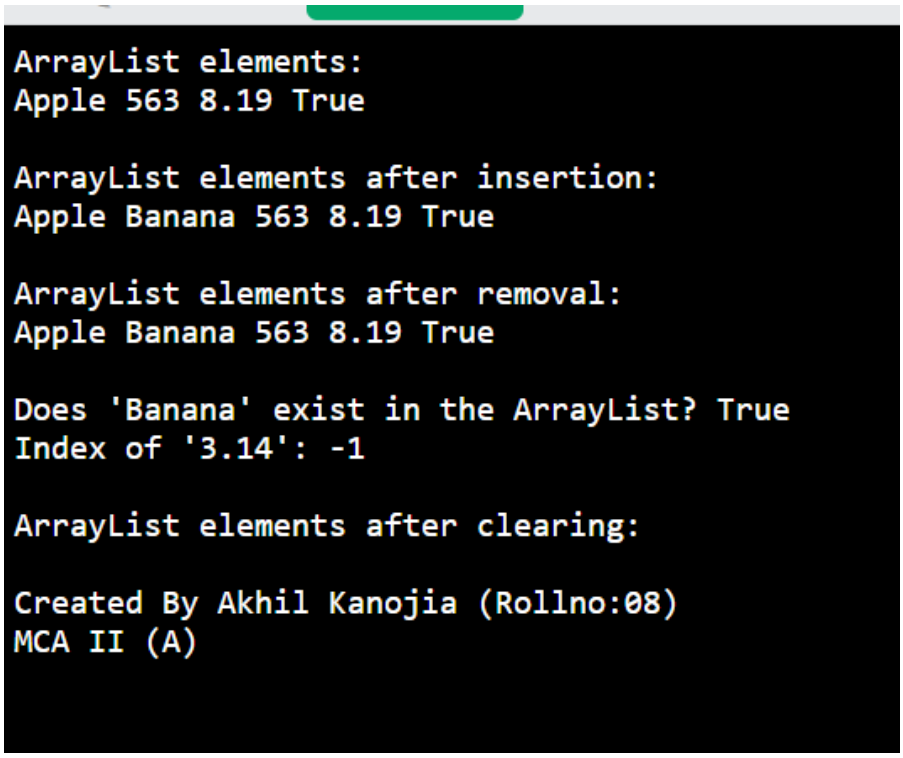
SOLUTION:

```
using System;
using System.Collections;

class Program
{
   static void Main()
   {

      ArrayList arrayList = new ArrayList();



      arrayList.Add("Apple");
      arrayList.Add(563);
      arrayList.Add(8.19);
      arrayList.Add(true);



      Console.WriteLine("ArrayList elements:");
      DisplayArrayList(arrayList);



      arrayList.Insert(1, "Banana");



      Console.WriteLine("\nArrayList elements after insertion:");
      DisplayArrayList(arrayList);
```

```
        arrayList.Remove(123);



        Console.WriteLine("\nArrayList elements after removal:");
        DisplayArrayList(arrayList);



        Console.WriteLine("\nDoes 'Banana' exist in the ArrayList? " +
arrayList.Contains("Banana"));



        Console.WriteLine("Index of '3.14': " + arrayList.IndexOf(3.14));



        arrayList.Clear();



        Console.WriteLine("\nArrayList elements after clearing:");
        DisplayArrayList(arrayList);

         Console.WriteLine("Created By Akhil Kanojia (Rollno:08)");
        Console.WriteLine("MCA II (A)");
    }



    static void DisplayArrayList(ArrayList list)
    {
        foreach (var item in list)
        {
            Console.Write(item + " ");
        }
        Console.WriteLine();
```

```
    }
}
```

OUTPUT:


ArrayList elements:
Apple 563 8.19 True
ArrayList elements after insertion:
Apple Banana 563 8.19 True
ArrayList elements after removal:
Apple Banana 563 8.19 True
Does 'Banana' exist in the ArrayList? True
Index of '3.14': -1
ArrayList elements after clearing:
Created By Akhil Kanojia (Rollno:08)
MCA II (A)

Q4. Create a code in C# to replace the string in given format

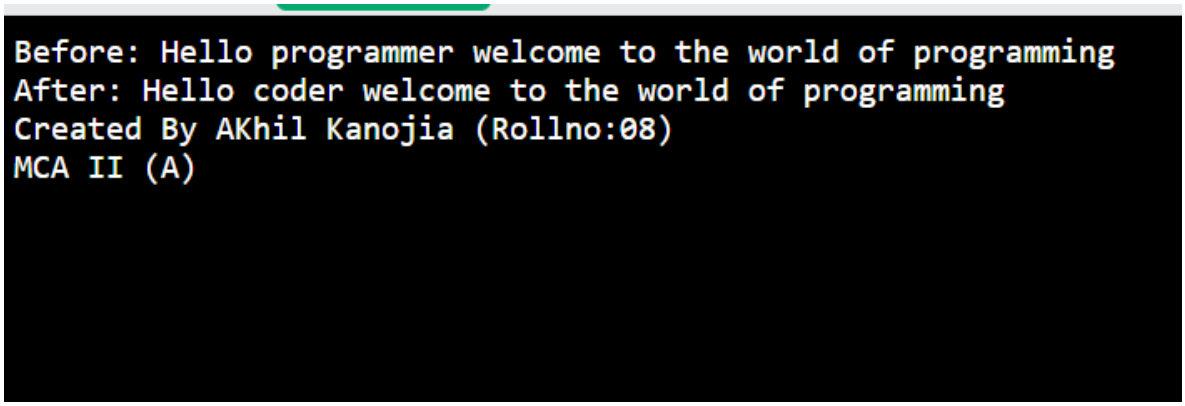
“ Hello programmer welcome to the world of programming”

“ Hello coder welcome to the world of coding”

SOLUTION:

```
using System;

class Program
{
   static void Main()
   {
      string originalString = "Hello programmer welcome to the world of programming";
      Console.WriteLine("Before: "+originalString);




      string replacedString = originalString.Replace("programmer", "coder");


      Console.WriteLine("After: "+replacedString);
       Console.WriteLine("Created By AKhil Kanojia (Rollno:08)");
      Console.WriteLine("MCA II (A)");
   }
}
```

OUTPUT:


Before: Hello programmer welcome to the world of programming
After: Hello coder welcome to the world of programming
Created By AKhil Kanojia (Rollno:08)
MCA II (A)