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SEC A

Q1:
CODE:

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

namespace ConsoleApplication19Assignment_lab_oop
{
    class car1engine
    {
        public string power_of_engine;
        public int RPM;
        public int no_of_cylinder;

        public virtual void engine(string power_of_engine, int RPM, int no_of_cylinder)
        {

            this.power_of_engine = power_of_engine;
            this.RPM = RPM;
            this.no_of_cylinder = no_of_cylinder;

            Console.WriteLine("Car1 Engine Power: " + power_of_engine);

            Console.WriteLine("Car1 RPM: " + RPM);

            Console.WriteLine("Car1 no of cylinder: " + no_of_cylinder);

        }

    }
    class car2engine : car1engine
    {
        public override void engine(string power_of_engine, int RPM, int no_of_cylinder)
        {
            Console.WriteLine("Car2 Engine Power: " + power_of_engine);

            Console.WriteLine("Car2 RPM: " + RPM);

            Console.WriteLine("Car2 no of cylinder: " + no_of_cylinder);


        }
    }
```

```
class Program
{
    static void Main(string[] args)
    {
        car2engine C2 = new car2engine();
        C2.engine("520HP", 1220, 3);
        Console.WriteLine("_____");
        car1engine C1 = new car1engine();
        C1.engine("720", 2120, 2);

        Console.ReadLine();

    }

}

}
```

Q3:

(a):

CODE:

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

namespace ConsoleApplication19Assignment_lab_oop
{

    class Program
    {
        static void Main(string[] args)
        {
            int[] arr1 = new int[50];
            int i, n,j;

            Console.WriteLine("FIRST ARRAY");
            Console.Write("Input the number of elements to be stored in the array :");
            n = Convert.ToInt32(Console.ReadLine());
            Console.Write("Input {0} elements in the array :\n", n);
            for (i = 0; i < n; i++)
            {
                Console.Write("number  {0} : ", i);
                arr1[i] = Convert.ToInt32(Console.ReadLine());
            }
            Console.WriteLine("_____");
            Console.WriteLine("SECOND ARRAY");
```

```csharp
            for (j = 0; j < 5; j++)
            {
                Console.Write("number  {0} : ", j);
                arr1[j] = Convert.ToInt32(Console.ReadLine());
            }

            Console.WriteLine("_____");
            Console.WriteLine("display the first array in reverse order");

            Console.Write("The values store into the array in reverse are :\n");
            for (i = n - 1; i >= 0; i--)
            {
                Console.Write("reverse :{0}  \n", arr1[i]);
            }


            Console.ReadLine();

        }

    }

}
```
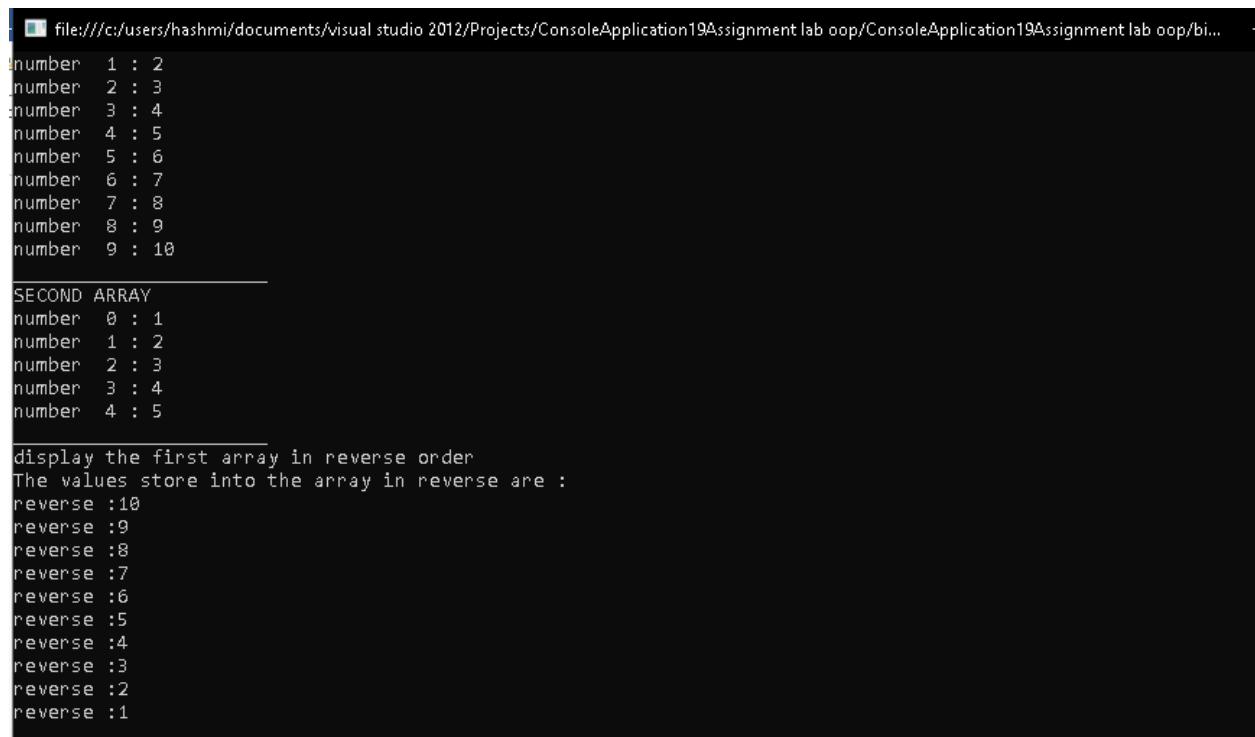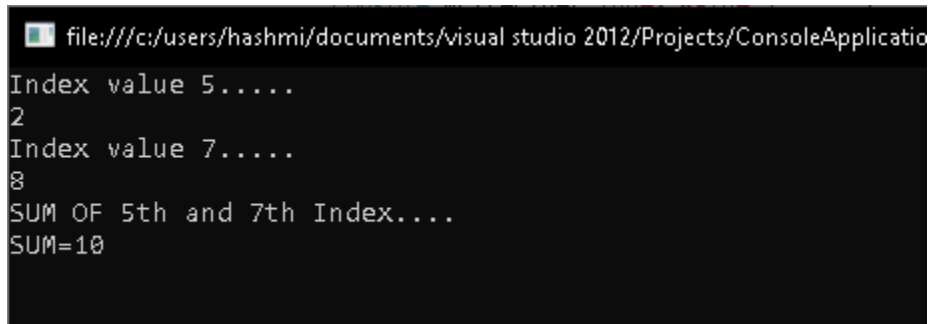
OUTPUT:

Q3(b)

CODE :

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

namespace ConsoleApplication19Assignment_lab_oop
{

    class Program
    {
        static void Main(string[] args)
        {
            int sum;
            int[] arr1 = new int[10]{ 2, 4, 6, 8, 9, 2, 1, 8,5,0};
            Console.WriteLine("Index value 5.....");
            Console.WriteLine(arr1[5]);
            Console.WriteLine("Index value 7.....");
            Console.WriteLine(arr1[7]);
            Console.WriteLine("SUM OF 5th and 7th Index....");
            sum = arr1[5] + arr1[7];
            Console.WriteLine("SUM="+sum);
            Console.ReadLine();

        }

    }

}
```

OUTPUT:


```
file:///c:/users/hashmi/documents/visual studio 2012/Projects/ConsoleApplicatio
Index value 5.....
2
Index value 7.....
8
SUM OF 5th and 7th Index....
SUM=10
```

Q3(d)

CODE:

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

namespace ConsoleApplication19Assignment_lab_oop
{

    class Program
    {
        static void Main(string[] args)
        {
            int x;
            int[] a = { 1, 6, 3, 8, 5, 10, 0, 0, 0, 0 };
            int[] odd = new int[10];
            int[] even = new int[10];

            for (int i = 0; i < 6; i++)
            {
                a[i] = int.Parse(Console.ReadLine());
            }


            Console.Write("EVEN INDEX VALUE");
            Console.Write("\n");

            for (int i = 0; i < 6; i++)
            {
                if (a[i] % 2 == 0)
                {
                    even[i] = a[i];
                    Console.Write(even[i]);
                    Console.Write("\n");
                }
            }
            x = int.Parse(Console.ReadLine());


            Console.ReadLine();

        }

    }

}
```
Output:

```
1
2
3
4
5
6
EVEN INDEX VALUE
2
4
6
```

Q3(C):

CODE:

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

namespace ConsoleApplication19Assignment_lab_oop
{

    class Program
    {
        static void Main(string[] args)
        {

            int[] arr = new int[10];

            for (int i = 0; i < 10; i++)
            {
                Console.WriteLine("number " + i + ":");
                arr[i] = Convert.ToInt32(Console.ReadLine());
            }

            double[] arr2 = new double[10];
            for (int j = 0; j < 10;j++)
            {

                arr2[j] = Math.Pow(arr[j],j+1);
            }

            for (int a = 0; a < 10; a++)
            {
                Console.WriteLine("...........");
                Console.WriteLine(arr2[a]);
                Console.WriteLine("____");
            }
                Console.ReadLine();
```

```
        }
    }
```

Output(C):

```
file:///c:/users/hashmi/documents/visual studio 2012/Projects/ConsoleApplication19Assignment lab oop/Cons
number 0:
2
number 1:
3
number 2:
4
number 3:
5
number 4:
6
number 5:
7
number 6:
8
number 7:
9
number 8:
8
number 9:
7
.........
2
_____
.........
9
_____
.........
64
_____
.........
625
_____
.........
7776
_____
.........
117649
_____
.........
2097152
_____
.........
43046721
_____
.........
134217728
_____
.........
282475249
_____
```

Q3(f):

CODE:

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

namespace ConsoleApplication19Assignment_lab_oop
{

    class Program
    {
        static void Main(string[] args)
        {
                int[] a = new Int32 [10] {0,1,2,3,4,6,5,8,9,9};
                int num;
                int i;
                int c;
            for (i = 0;i < 10;i++)
            {
                    //Console.Write("Enter a number\n");
                    //a[i] = int.Parse(Console.ReadLine());
            }
            Console.Write("Enter the number:");
        num = int.Parse(Console.ReadLine());
            int found = 0;

            for (i = 0;i < 10;i++)
            {
                    if (a[i] == num)
                    {
                        found = 1;
                        break;
                    }
            }

            if (found != 0)
            {
                    Console.Write(i+ ":is Present in given arrays \n");
            }
            else
            {
                    Console.Write("Not present \n");
            }

        c = int.Parse(Console.ReadLine());


                Console.ReadLine();

        }

    }

}
```
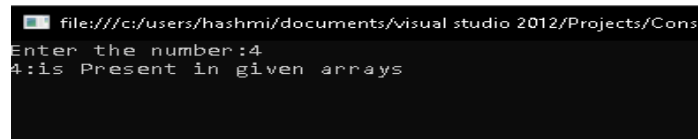
Output(f):

Q(e)

CODE

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

namespace ConsoleApplication19Assignment_lab_oop
{

    class Program
    {
        static void Main(string[] args)
        {
        int[] a = new Int32 [10] {15,25,82,12,10,6,7,8,92,3};
        int[] b = new Int32[10];

                int i=0,j=0,n;

        Console.WriteLine("Enter value of N");
        n = Convert.ToInt16(Console.ReadLine());
         for (i = 0;i < 10;i++)
          {
           if (a[i] % n == 0)
           {
               b[j]=a[i];
               j++;
           }
          }

    Console.WriteLine("Multiple of N are:");
    for ( i = 0; i < 10; i++)
    {
        Console.WriteLine(b[i]);
    }
                Console.ReadLine();

        }

    }

}
```
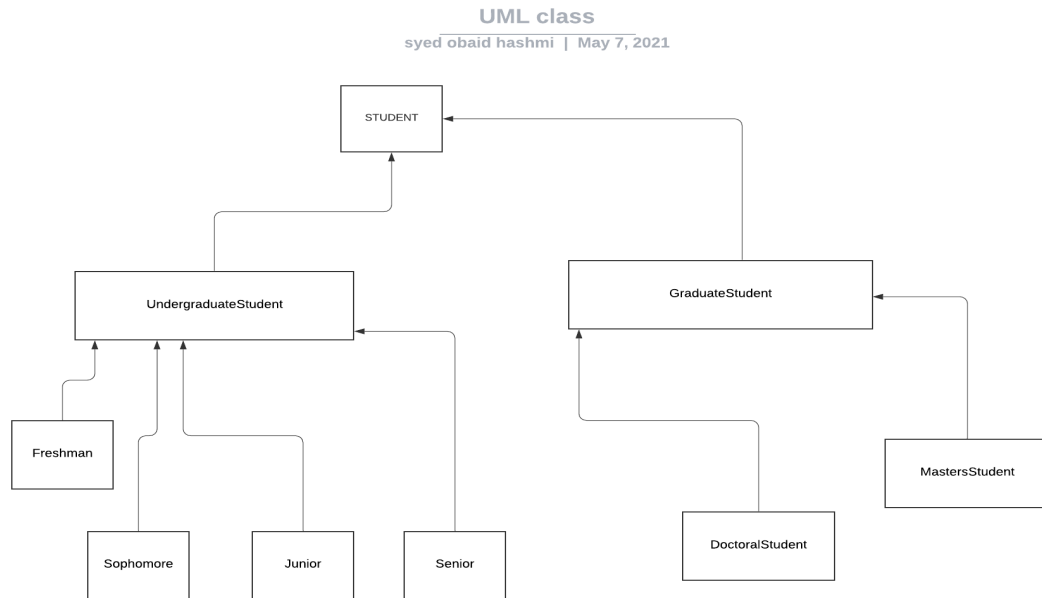
OUT PUT:

rogram.cs

ConsoleApplica

```
using Syst
using Syst
using Syst
using Syst
using Syst

namespace
{

    class
    {
        st
        {
        i
        i

        i
```

file:///c:/users/hashmi/documents/visual studio 2012/Projects/ConsoleApplication19Assignment lab oop/ConsoleApplication19Assignment lab oop/

```
Enter value of N
2
Multiple of N are:
82
12
10
6
8
92
0
0
0
0
```

Q2

The relation ship between Student and UndergraduateStudent is*IS-A relationship*

The relation ship between Student and GraduateStudent is*IS-A relationship*

The relation ship between UndergraduateStudent and*Freshman,Sophomore,Junior,Senior is IS-A relationship*

The relation ship between GraduateStudent is DotoralStudent ,MasterStudent is IS-*A relationship*

Inheritance Heirarchy Student Extends Extends GraduateStudent UndergraduateStudent Extends Extends Extends Extends Extends Extends Freshman Sophomore Junior Senior DoctoralStudent MastersStudent