

.Net Technology (01CE0602)
Department of Computer Engineering
6th Semester

Lab Manual

(Year: 2022-23)

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Lab	Programs	Date	Signature
1	a. Write a C# Program to print "Hello World". b. Write a C# Program to add 2 Numbers. c. Write a C# Program to find maximum of 2 Numbers. d. Write a C# Program to generate electricity bill using Else-If ladder. e. Write a C# Program to find the sum of first N numbers.		
2	a. Write a C# Program to check a number is Palindrome or not. b. Write a C# Program to generate Fibonacci series up to N Numbers. c. Write a C# program to create a calculator using Switch Case. d. Write a C# Program to print a given array in reverse. e. Create a simple C# code for the following: 55555 4444 333 22 1		
3	a. Write a C# program find area of Circle, Rectangle and Square using Polymorphism. b. Consider a class Information that has data members as Name, Surname and Contact number. Let Employee and Student class inherits Information class with its own other information such as Students Semester or Employee Salary. Implement a system using Method Overriding to take input from the user for all the information and display proper output. c. Consider a class Apartment that has data members as Apartment number and balcony type. Implement a system that has 3 classes as 1bhk, 2bhk and 3bhk such that it does not allow to create any other classes above 3bhk. Also implement inheritance in such a way that 1bhk will have Rectangular Balcony and all other flats have Rounded Balcony (Use Sealed Class).		
4	a. Apply Interface to find the area of Square, Rectangle and Circle. Display proper output. b. Create two interfaces Icredit and Idebit with methods deposit and withdraw respectively. Create a class Account that inherits interface such that it provides the functionality of Crediting some amount and withdrawing some amount. Use Proper Variables and display output accordingly. c. Demonstrate a calculator using delegate.		

5	<p>a. Write a C# Console based application to create following table using ADO. Net.</p> <p>b. Write a C# Console based application to display all the records of a table.</p> <table><tr><td>Emp_id</td><td>Name</td><td>Designation</td><td>Department</td><td>Salary</td></tr><tr><td>1</td><td>Raj</td><td>Manager</td><td>Sales</td><td>35000</td></tr><tr><td>2</td><td>Priya</td><td>Manager</td><td>HR</td><td>30000</td></tr><tr><td>3</td><td>Manoj</td><td>Driver</td><td>Transport</td><td>15000</td></tr><tr><td>4</td><td>Aakash</td><td>Executive</td><td>Finance</td><td>85000</td></tr></table>	Emp_id	Name	Designation	Department	Salary	1	Raj	Manager	Sales	35000	2	Priya	Manager	HR	30000	3	Manoj	Driver	Transport	15000	4	Aakash	Executive	Finance	85000		
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6	<p>a. Write a C# Console based application to implement a functionality to insert a new record in the table</p> <p>b. Write a C# Console based application to implement a functionality to display specific record from the table</p> <p>Use Above Table as per Lab 5.</p>																											
7	<p>a. Create a Simple Calculator using Windows Forms.</p> <p>b. Create a Windows Forms that will change the background color, forecolor and styling of the given text.</p>																											
8	<p>a. Create a Windows Form that will move the data from one tool to other tool (Usage of ComboBox and ListBox)</p> <p>b. Create a GUI for the following: Consider textbox(txt1) for Full Name, textbox(txt2) for enrolment, textbox(txt3) for email, textbox(txt4) for mobile, combobox(cmb1) for Semester, radiobutton(rd1,rd2) for Gender and datetimepicker(dtp1) for birthdate and button(btn1). Write backend code for taking input of each and display all values in pop-up box with proper message on button (btn1) click.</p>																											
9	<p>a. Create a GUI for the following: Consider textbox(txt1) for Full Name, textbox(txt2) for enrolment, textbox(txt3) for email, textbox(txt4) for mobile, textArea(txtarea1) for Address, textbox(txt5) for City, combobox(cmb1) for Semester, radiobutton(rd1,rd2) for Gender and datetimepicker(dtp1) for birthdate, checkbox(ck1) for Agree to Register and button(btn1). Write backend code for taking input of each control and if Agree checkbox is checked, then store all these data in the database. Show Pop-Up message: "Registration Successful".</p>																											
10	<p>a. Write a Windows based application to create following table using ADO. Net.</p> <p>b. Write a C# Windows based application to display all the records of a table.</p> <p>Use Above Table as per Lab 5.</p>																											
11	<p>a. Write a C# Windows based application to implement a functionality to insert a new record in the table</p> <p>b. Write a C# Windows based application to implement a functionality to display specific record from the table.</p> <p>Use Above Table as per Lab 5.</p>																											

12	<p>a. Write a C# Windows based application to implement a functionality to insert a new record in the table</p> <p>b. Write a C# Windows based application to implement a functionality to display specific record from the table.</p> <p>Use Above Table as per Lab 5.</p>		
13	<p>a. Write a C# code to generate 3 different lines of different colors.</p> <p>b. Write a C# code to generate 4 different lines of Multicolor Rectangle.</p> <p>c. Write a C# code to generate 2 ellipses on a windows form.</p>		
14	<p>a. Write XAML code for the following: Consider textbox(txt1) for First Number, textbox(txt2) for Second Number, textbox(txt3) for Answer, and 4 buttons (btn1,btn2,btn3,btn4) for Addition, Subtraction, Multiplication and Division respectively. Write backend code for taking input of 2 numbers and display relevant output as per button click.</p> <p>b. Write XAML code for the following: Consider textbox(txt1) for Full Name, textbox(txt2) for enrolment, textbox(txt3) for email, textbox(txt4) for mobile, combobox(cmb1) for Semester, radiobutton(rd1,rd2) for Gender and datetimepicker(dtp1) for birthdate and button(btn1). Write backend code for taking input of each and display all values in pop-up box with proper message on button (btn1) click.</p>		

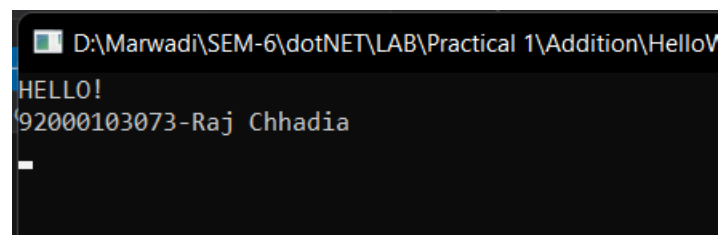
LAB - 1

Program 1: Write a C# Program to print “Hello World”.

Code:

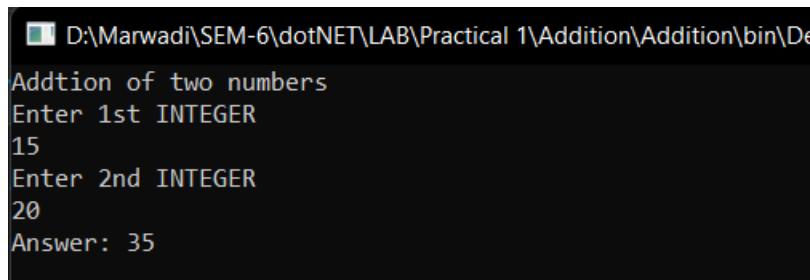
```
1  using System;
2
3  namespace HelloWorld
4  {
5      0 references
6      internal class Program
7      {
8          0 references
9          private static void Main(string[] args)
10         {
11             Console.WriteLine("HELLO!");
12             Console.WriteLine("92000103073-Raj Chhadia");
13             Console.Read();
14         }
15     }
16 }
```

Output:



Program 2: Write a C# Program to add 2 Numbers.**Code:**

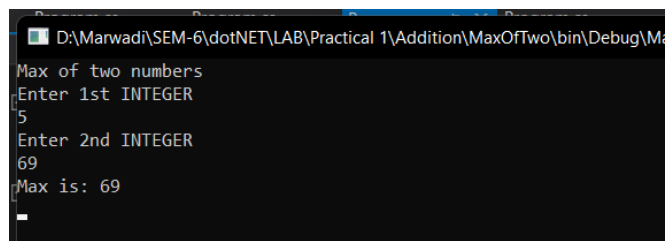
```
1 namespace Addition
2 {
3     using System;
4
5     0 references
6     internal class Program
7     {
8         0 references
9         private static void Main(string[] args)
10        {
11            Console.WriteLine("Addition of two numbers");
12            Console.WriteLine("Enter 1st INTEGER");
13            int a = int.Parse(Console.ReadLine());
14            Console.WriteLine("Enter 2nd INTEGER");
15            int b = int.Parse(Console.ReadLine());
16
17            int c = a + b;
18
19            Console.WriteLine("Answer: " + c);
20            Console.Read();
21        }
22    }
23 }
```

Output:

```
D:\Marwadi\SEM-6\dotNET\LAB\Practical 1\Addition\Addition\bin\Debug
Addition of two numbers
Enter 1st INTEGER
15
Enter 2nd INTEGER
20
Answer: 35
```

Program 3: Write a C# Program to find maximum of 2 Numbers.**Code:**

```
1  using System;
2
3  namespace MaxOfTwo
4  {
5      0 references
6      internal class Program
7      {
8          0 references
9          private static void Main(string[] args)
10         {
11             Console.WriteLine("Max of two numbers");
12             Console.WriteLine("Enter 1st INTEGER");
13             int a = int.Parse(Console.ReadLine());
14             Console.WriteLine("Enter 2nd INTEGER");
15             int b = int.Parse(Console.ReadLine());
16             if (a > b)
17                 Console.WriteLine("Max is : " + a);
18             else if (b > a)
19                 Console.WriteLine("Max is: " + b);
20             else
21                 Console.WriteLine("Both are equal");
22             Console.Read();
23         }
24     }
25 }
```

Output:

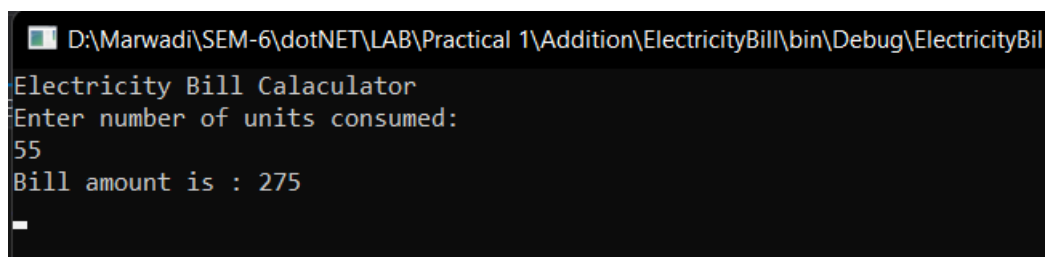
```
D:\Marwadi\SEM-6\dotNET\LAB\Practical 1\Addition\MaxOfTwo\bin\Debug\MaxOfTwo.exe
Max of two numbers
Enter 1st INTEGER
5
Enter 2nd INTEGER
69
Max is: 69
```

Program 4: Write a C# Program to generate electricity bill using Else-If ladder

Code:

```
1  using System;
2
3  namespace ElectricityBill
4  {
5      0 references
6      internal class Program
7      {
8          0 references
9          private static void Main(string[] args)
10         {
11             Console.WriteLine("Electricity Bill Calaculator");
12             Console.WriteLine("Enter number of units consumed: ");
13             float a = float.Parse(Console.ReadLine());
14             if (a > 0 && a <= 100)
15                 Console.WriteLine("Bill amount is : " + (a * 5));
16             else if (a >= 100 && a < 200)
17                 Console.WriteLine("Bill amount is : " + (a * 10));
18             else if (a >= 200 && a < 300)
19                 Console.WriteLine("Bill amount is : " + (a * 20));
20             else if (a >= 300 && a < 400)
21                 Console.WriteLine("Bill amount is : " + (a * 30));
22             else if (a >= 400 && a < 500)
23                 Console.WriteLine("Bill amount is : " + (a * 40));
24             else
25                 Console.WriteLine("Bill amount is : " + (a * 50));
26             Console.Read();
27         }
28     }
29 }
```

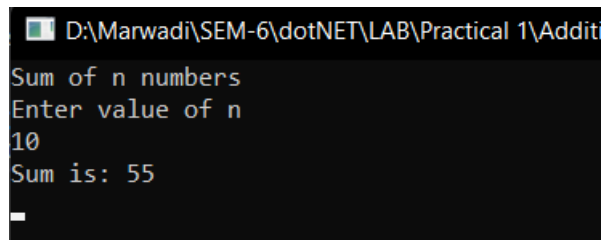
Output:



```
D:\Marwadi\SEM-6\dotNET\LAB\Practical 1\Addition\ElectricityBill\bin\Debug\ElectricityBill
Electricity Bill Calaculator
Enter number of units consumed:
55
Bill amount is : 275
```


Program 5: Write a C# Program to find the sum of first N numbers.**Code:**

```
1  using System;
2
3  namespace SumOfN
4  {
5      0 references
6      internal class Program
7      {
8          0 references
9          private static void Main(string[] args)
10         {
11             Console.WriteLine("Sum of n numbers");
12             Console.WriteLine("Enter value of n");
13             int a = int.Parse(Console.ReadLine());
14             int sum = 0;
15
16             for (int i = 1; i <= a; i++)
17             {
18                 sum += i;
19             }
20             Console.WriteLine("Sum is: " + sum);
21             Console.Read();
22         }
23     }
24 }
```

Output:

```
D:\Marwadi\SEM-6\dotNET\LAB\Practical 1\Addit
Sum of n numbers
Enter value of n
10
Sum is: 55
_
```

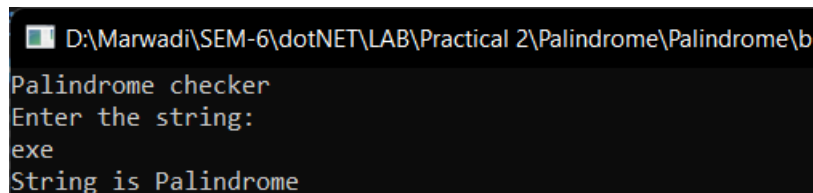
LAB - 2

Program 1: Write a C# Program to check a number is Palindrome or not.

Code:

```
1  using System;
2
3  namespace Palindrome
4  {
5      0 references
6      internal class Program
7      {
8          0 references
9          private static void Main(string[] args)
10         {
11             Console.WriteLine("Palindrome checker");
12             Console.WriteLine("Enter the string: ");
13             string originalString = Console.ReadLine();
14             char[] stringArray = originalString.ToCharArray();
15             Array.Reverse(stringArray);
16             string reverseString = new string(stringArray);
17
18             if (reverseString.Equals(originalString))
19                 Console.WriteLine("String is Palindrome");
20             else
21                 Console.WriteLine("String is not Palindrome");
22             Console.Read();
23         }
24     }
25 }
```

Output:



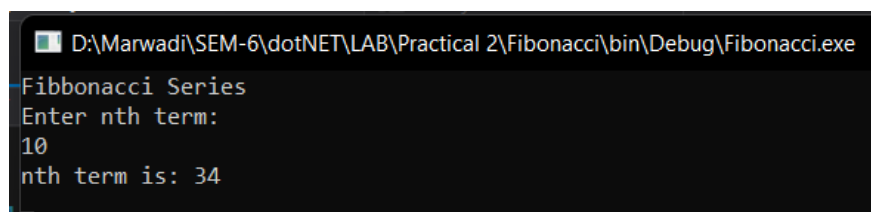
```
D:\Marwadi\SEM-6\dotNET\LAB\Practical 2\Palindrome\Palindrome\b
Palindrome checker
Enter the string:
exe
String is Palindrome
```

Program 2: Write a C# Program to generate Fibonacci series up to N Numbers.

Code:

```
1  using System;
2
3  namespace Fibonacci
4  {
5      0 references
6      internal class Program
7      {
8          3 references
9          public static int Fibonacci(int n)
10         {
11             if (n == 1)
12                 return 0;
13             else if (n == 2)
14                 return 1;
15             else
16                 return Fibonacci(n - 1) + Fibonacci(n - 2);
17         }
18
19         0 references
20         private static void Main(string[] args)
21         {
22             Console.WriteLine("Fibonacci Series");
23             Console.WriteLine("Enter nth term: ");
24             int number = int.Parse(Console.ReadLine());
25             int term = Fibonacci(number);
26             Console.WriteLine("nth term is: " + term);
27             Console.Read();
28         }
29     }
30 }
```

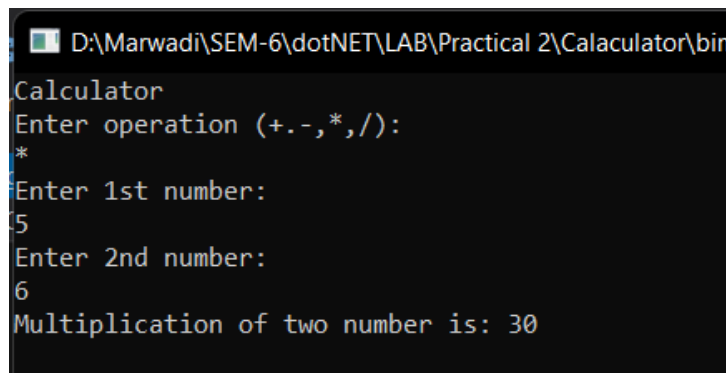
Output:



```
D:\Marwadi\SEM-6\dotNET\LAB\Practical 2\Fibonacci\bin\Debug\Fibonacci.exe
Fibonacci Series
Enter nth term:
10
nth term is: 34
```

Program 3: Write a C# program to create a calculator using Switch Case.**Code:**

```
1  using System;
2
3  namespace Calculator
4  {
5      0 references
6      internal class Program
7      {
8          0 references
9          private static void Main(string[] args)
10         {
11             Console.WriteLine("Calculator");
12             Console.WriteLine("Enter operation (+,-,*,/): ");
13             string operation = Console.ReadLine();
14             Console.WriteLine("Enter 1st number: ");
15             float a = float.Parse(Console.ReadLine());
16             Console.WriteLine("Enter 2nd number: ");
17             float b = float.Parse(Console.ReadLine());
18             switch (operation)
19             {
20                 case "+":
21                     Console.WriteLine("Addition of two number is: " + (a + b));
22                     break;
23                 case "-":
24                     Console.WriteLine("Subtraction of two number is: " + (a - b));
25                     break;
26                 case "*":
27                     Console.WriteLine("Multiplication of two number is: " + (a * b));
28                     break;
29                 case "/":
30                     Console.WriteLine("Division of two number is: " + (a / b));
31                     break;
32                 default:
33                     Console.WriteLine("Invalid Input!");
34                     break;
35             }
36             Console.Read();
37         }
38     }
39 }
40
41 }
```

Output:

```
D:\Marwadi\SEM-6\dotNET\LAB\Practical 2\Calaculator\bin
Calculator
Enter operation (+,-,*,/):
*
Enter 1st number:
5
Enter 2nd number:
6
Multiplication of two number is: 30
```

Program 4: Write a C# Program to print a given array in reverse.**Code:**

```
1  using System;
2
3  namespace Reverse
4  {
5      0 references
6      internal class Program
7      {
8          0 references
9          private static void Main(string[] args)
10         {
11             Console.WriteLine("Reversal of array");
12             Console.WriteLine("Enter the number of element : ");
13             int size = Convert.ToInt32(Console.ReadLine());
14
15             int[] original_array = new int[size];
16
17             for (int i = 0; i < size; i++)
18             {
19                 Console.Write("Array[{0}] :", i);
20                 original_array[i] = Convert.ToInt32(Console.ReadLine());
21             }
22             Array.Reverse(original_array);
23             for (int i = 0; i < size; i++)
24             {
25                 Console.Write("Reverse array is :");
26                 Console.WriteLine(original_array[i]);
27             }
28             Console.Read();
29         }
30     }
```

Output:

```
D:\Marwadi\SEM-6\dotNET\LAB\Practical 2\Reverse\bin\Debug\
Reversal of array
Enter the number of element :
3
Array[0] :0
Array[1] :7
Array[2] :3
Reverse array is :3
Reverse array is :7
Reverse array is :0
```

Program 5: Create a simple C# code for the following:

55555

4444

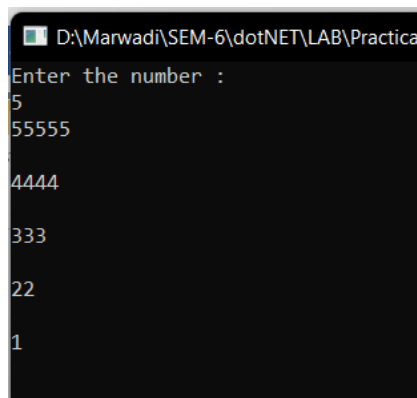
333

22

1

Code:

```
1  using System;
2
3  namespace StarPattern
4  {
5      internal class StarPattern
6      {
7          0 references
8          private static void Main()
9          {
10             Console.WriteLine("Enter the number : ");
11             int number = Convert.ToInt32(Console.ReadLine());
12
13             for (int i = 0; i < number; i++)
14             {
15                 for (int j = number - i; j > 0; j--)
16                 {
17                     Console.Write(number - i);
18                 }
19                 Console.WriteLine("\n");
20             }
21             Console.Read();
22         }
23     }
```

Output:

```
D:\Marwadi\SEM-6\dotNET\LAB\Practica
Enter the number :
5
55555
4444
333
22
1
```

LAB - 3

Program 1: Write a C# program find area of Circle, Rectangle and Square using Polymorphism.

Code:

```
1  using System;
2
3  namespace Area
4  {
5      3 references
6      internal class Circle
7      {
8          1 reference
9          public void area(float r)
10         {
11             float area = (float)3.14 * r * r;
12             Console.WriteLine("Area of Circle is: " + area);
13         }
14
15         3 references
16         internal class Rectangle : Circle
17         {
18             1 reference
19             public void area(float l, float b)
20             {
21                 float area = (float)l * b;
22                 Console.WriteLine("Area of Rectangle is: " + area);
23             }
24         }
25     }
26 }
```

```
23 internal class Square : Rectangle
24 {
25     1 reference
26     public void area(float s)
27     {
28         float area = (float)s * s;
29         Console.WriteLine("Area of Square is: " + area);
30     }
31 }
32
33 0 references
34 internal class Program : Square
35 {
36     0 references
37     private static void Main(string[] args)
38     {
39         Circle c = new Circle();
40         Rectangle r = new Rectangle();
41         Square s = new Square();
42         Console.WriteLine("Raj Chhadia");
43         Console.WriteLine("Enter the radius of circle: ");
44         c.area(float.Parse(Console.ReadLine()));
45         Console.WriteLine("Enter the Length and breadth of Rectangle: ");
46         r.area(float.Parse(Console.ReadLine()), float.Parse(Console.ReadLine()));
47         Console.WriteLine("Enter the side of square: ");
48         s.area(float.Parse(Console.ReadLine()));
49         Console.Read();
50     }
51 }
```

Output:

```
D:\Marwadi\SEM-6\dotNET\LAB\Practical 3\Area\Area\bin\Debug\Area.
Raj Chhadia
Enter the radius of circle:
10
Area of Circle is: 314
Enter the Length and breadth of Rectangle:
5
6
Area of Rectangle is: 30
Enter the side of square:
8
Area of Square is: 64
```


Program 2: Consider a class Information that has data members as Name, Surname and Contact number. Let Employee and Student class inherits Information class with its own other information such as Students Semester or Employee Salary. Implement a system using Method Overriding to take input from the user for all the information and display proper output.

Code:

```
1  using System;
2
3  namespace Information
4  {
5      0 references
6      internal class Program
7      {
8          0 references
9          private static void Main(string[] args)
10         {
11             Console.WriteLine("Raj Chhadia");
12             Student s1 = new Student();
13             Employee e1 = new Employee();
14             Console.WriteLine("Enter your choice: ");
15             Console.WriteLine("1. Student");
16             Console.WriteLine("2. Employee");
17             int choice = int.Parse(Console.ReadLine());
18             switch (choice)
19             {
20                 case (1):
21                     s1.getData();
22                     s1.putData();
23                     break;
24                 case (2):
25                     e1.getData();
26                     e1.putData();
27                     break;
28             }
29             Console.Read();
30         }
31     }
32 }
```

```

29     }
30     }
31
32     2 references
33     internal class Information
34     {
35         public string name;
36         public string surname;
37         public int number;
38
39         2 references
40         public void getData()
41         {
42             Console.WriteLine("Enter the first name: ");
43             name = Console.ReadLine();
44             Console.WriteLine("Enter the surname: ");
45             surname = Console.ReadLine();
46             Console.WriteLine("Enter the contact number: ");
47             number = int.Parse(Console.ReadLine());
48         }
49     }
50
51     2 references
52     internal class Employee : Information
53     {
54         private int salary;
55
56         1 reference
57         public void getData()
58         {
59             base.getData();
60
61             Console.WriteLine("Enter the employee salary: ");
62             salary = int.Parse(Console.ReadLine());
63         }
64
65         public void putData()
66         {
67             Console.WriteLine("Name: " + name);
68             Console.WriteLine("SurName: " + surname);
69             Console.WriteLine("Contact Number: " + number);
70             Console.WriteLine("Salary: " + salary);
71         }
72     }
73
74     internal class Student : Information
75     {
76         private int semester;
77
78         public void getData()
79         {
80             base.getData();
81             Console.WriteLine("Enter the semester number: ");
82             semester = int.Parse(Console.ReadLine());
83         }
84     }

```

```
80      public void putData()  
81      {  
82          Console.WriteLine("Name: " + name);  
83          Console.WriteLine("SurName: " + surname);  
84          Console.WriteLine("Contact Number: " + number);  
85          Console.WriteLine("Semester: " + semester);  
86      }  
87  }  
88 }
```

Output:

```
Raj Chhadia  
Enter your choice:  
1. Student  
2. Employee  
1  
Enter the first name:  
Raj  
Enter the surname:  
C  
Enter the contact number:  
12  
Enter the semester number:  
6  
Name: Raj  
SurName: C  
Contact Number: 12  
Semester: 6  
_
```

Program 3: Consider a class Apartment that has data members as Apartment number and balcony type. Implement a system that has 3 classes as 1bhk,2bhk and 3bhk such that it does not allow to create any other classes above 3bhk. Also implement inheritance in such a way that 1bhk will have Rectangular Balcony and all other flats have Rounded Balcony (Use Sealed Class).

Code:

```
1  using System;
2
3  namespace Apartment
4  {
5      0 references
6      internal class Program
7      {
8          0 references
9          private static void Main(string[] args)
10         {
11             OneBHK f1 = new OneBHK();
12             f1.welcome();
13             f1.display();
14             f1.balcony();
15
16             TwoBHK f2 = new TwoBHK();
17             f2.welcome();
18             f2.display();
19             f2.balcony();
20
21             ThreeBHK f3 = new ThreeBHK();
22             f3.welcome();
23             f3.display();
24             f3.balcony();
25             Console.Read();
26         }
27     }
```

```

28 public class Flat
29 {
30     3 references
    public void welcome()
31     {
32         Console.WriteLine("Welcome to Beautiful Apartment... Raj Chhadia");
33     }
34
35     6 references
    public virtual void display()
36     {
37         Console.WriteLine("Not ready yet...");
38     }
39
40     3 references
    public virtual void features()A
41     {
42         Console.WriteLine("Not ready yet...");
43         balcony();
44     }
45
46     9 references
    public virtual void balcony()
47     {
48         Console.WriteLine("Not ready yet...");
49     }
50 }
51

```

```

52 public class OneBHK : Flat
53 {
54     6 references
    public override void display()
55     {
56         Console.WriteLine("This is 1 BHK flat");
57     }
58
59     3 references
    public override void features()
60     {
61         Console.WriteLine("\tFeatures...");
62         balcony();
63     }
64
65     9 references
    public override void balcony()
66     {
67         Console.WriteLine("\tBalcony: Rectangular\n");
68     }
69 }
70
71 3 references
    public class TwoBHK : OneBHK
72 {
73     6 references
    public override void display()
74     {
75         Console.WriteLine("This is 2 BHK flat");
76     }
77 }

```

```
78 | public override void features()  
79 | {  
80 |     Console.WriteLine("\tFeatures...");  
81 |     balcony();  
82 | }  
83 |  
84 | 9 references  
85 | public override sealed void balcony()  
86 | {  
87 |     Console.WriteLine("\tBalcony: Circular\n");  
88 | }  
89 |  
90 | 2 references  
91 | public sealed class ThreeBHK : TwoBHK  
92 | {  
93 |     6 references  
94 |     public override void display()  
95 |     {  
96 |         Console.WriteLine("This is 3 BHK flat");  
97 |     }  
98 |  
99 |     3 references  
100 |     public override void features()  
101 |     {  
102 |         Console.WriteLine("\tFeatures...");  
        balcony();  
    }  
}
```

Output:

```
D:\Marwadi\SEM-6\dotNET\LAB\Practical 3\Apartment\bin\Debug\Apartment.exe  
Welcome to Beautiful Apartment... Raj Chhadia  
This is 1 BHK flat  
Balcony: Rectangular  
  
Welcome to Beautiful Apartment... Raj Chhadia  
This is 2 BHK flat  
Balcony: Circular  
  
Welcome to Beautiful Apartment... Raj Chhadia  
This is 3 BHK flat  
Balcony: Circular
```

LAB - 4

Program 1: Apply Interface to find the area of Square, Rectangle and Circle. Display proper output.

Code:

```
1 namespace Interface_area
2 {
3     using System;
4
5     3 references
6     internal interface Area
7     {
8         6 references
9         void area();
10    }
11
12    3 references
13    internal class Square : Area
14    {
15        private float side;
16
17        1 reference
18        public Square(float side)
19        {
20            this.side = side;
21            this.area();
22        }
23
24        2 references
25        public void area()
26        {
27            Console.WriteLine("Area of sqaure is: " + (side * side));
28        }
29    }
30
31    internal class Rectangle : Area
32    {
33        private float length;
34        private float breadth;
35
36        1 reference
37        public Rectangle(float length, float breadth)
38        {
39            this.length = length;
40            this.breadth = breadth;
41            this.area();
42        }
43
44        2 references
45        public void area()
46        {
47            Console.WriteLine("Area of rectangle is: " + (length * breadth));
48        }
49    }
```

```

45 internal class Circle : Area
46 {
47     private float radius;
48
49     1 reference
50     public Circle(float radius)
51     {
52         this.radius = radius;
53         this.area();
54     }
55
56     2 references
57     public void area()
58     {
59         Console.WriteLine("Area of circle is: " + (3.14 * radius * radius));
60     }
61
62 internal class Program
63 {
64     0 references
65     private static void Main(string[] args)
66     {
67         Console.WriteLine("Area using interface");
68         Console.WriteLine("Raj Chhadia");
69         float side, length, breadth, radius;
70
71         Console.WriteLine("Enter side of a square");
72         side = float.Parse(Console.ReadLine());
73         Square sq = new Square(side);
74
75         Console.WriteLine("Enter length of a rectangle");
76         length = float.Parse(Console.ReadLine());
77         Console.WriteLine("Enter breadth of a rectangle");
78         breadth = float.Parse(Console.ReadLine());
79         Rectangle rec = new Rectangle(length, breadth);
80
81         Console.WriteLine("Enter radius of a circle");
82         radius = float.Parse(Console.ReadLine());
83         Circle circ = new Circle(radius);
84
85         Console.Read();
86     }
87 }

```

Output:

```

D:\Marwadi\SEM-6\dotNET\LAB\Practical 4\Interface_area\Interface_area\bin\Debug\Interface_area.exe
Area using interface
Raj Chhadia
Enter side of a square
5
Area of sqaure is: 25
Enter length of a rectangle
6
Enter breadth of a rectangle
7
Area of rectangle is: 42
Enter radius of a circle
10
Area of circle is: 314

```


Program 2: Create two interfaces Icredit and Idebit with methods deposit and withdraw respectively. Create a class Account that inherits interface such that it provides the functionality of Crediting some amount and withdrawing some amount. Use Proper Variables and display output accordingly.

Code:

```
1  using System;
2
3  namespace bank
4  {
5      1 reference
6      internal interface Icredit
7      {
8          2 references
9          void deposit();
10     }
11
12     1 reference
13     internal interface Idebit
14     {
15         2 references
16         void withdraw();
17     }
18
19     internal class Account : Icredit, Idebit
20     {
21         private int balance = 0;
22
23         2 references
24         public void deposit()
25         {
26             Console.WriteLine("\nEnter amount to deposit : ");
27             balance += int.Parse(Console.ReadLine());
28             Console.WriteLine("Deposit successful ");
29             Console.WriteLine("New balance is : " + balance);
30         }
31
32         2 references
33         public void withdraw()
34         {
35             Console.WriteLine("\nEnter amount to withdraw : ");
36             int amount = int.Parse(Console.ReadLine());
37
38             if (amount > balance)
39             {
40                 Console.WriteLine("Can not be withdraw ");
41             }
42             else
43             {
44                 Console.WriteLine("withdraw successful ");
45                 balance -= amount;
46                 Console.WriteLine("New balance is : " + balance);
47             }
48         }
49     }
50 }
```

```

41     }
42 }
43 }
44
45 0 references
46 internal class Program
47 {
48     0 references
49     private static void Main(string[] args)
50     {
51         Console.WriteLine("\nEnter your choice : ");
52         Console.WriteLine("1. deposit : ");
53         Console.WriteLine("2. withdraw : ");
54         Console.WriteLine("3. exit : ");
55         int choice = int.Parse(Console.ReadLine());
56
57         Account a = new Account();
58
59         while (choice != 3)
60         {
61             if (choice == 1)
62             {
63                 a.deposit();
64             }
65             else if (choice == 2)
66             {
67                 a.withdraw();
68             }
69             Console.WriteLine("\nEnter your choice : ");
70             Console.WriteLine("1. deposit : ");
71             Console.WriteLine("2. withdraw : ");
72             Console.WriteLine("3. exit : ");
73             choice = int.Parse(Console.ReadLine());
74             Console.Read();
75         }
76     }

```

Output:

```

D:\Marwadi\SEM-6\dotNET\LAB\Practical 4\Credit_Debit\bin\Debug\Credit_Debit.exe
1. deposit :
2. withdraw :
3. exit :

Enter your choice :
1

Enter amount to deposit :
500
Deposit successful
New balance is : 500
1. deposit :
2. withdraw :
3. exit :

Enter your choice :
2

Enter amount to withdraw :
800
Can not be withdraw
1. deposit :
2. withdraw :
3. exit :

Enter your choice :
3

```

Program 3 Demonstrate a calculator using delegate**Code:**

```
1  using System;
2
3  namespace ArithmeticOperation
4  {
5      0 references
6      class Program
7      {
8          delegate double ArithmeticDelegate(double a, double b);
9
10         1 reference
11         static void Menu()
12         {
13             Console.WriteLine("Select an arithmetic operation");
14             Console.WriteLine("1)Addition");
15             Console.WriteLine("2)Subtraction");
16             Console.WriteLine("3)Multiplication");
17             Console.WriteLine("4)Division");
18             Console.WriteLine("5)Remainder");
19             Console.WriteLine("6)Quit");
20         }
21
22         1 reference
23         static double Add(double a, double b)
24         {
25             return a + b;
26         }
27
28         1 reference
29         static double Subtract(double a, double b)
```

```
30         {
31             return a - b;
32         }
33
34         1 reference
35         static double Multiply(double a, double b)
36         {
37             return a * b;
38         }
39
40         1 reference
41         static double Divide(double a, double b)
42         {
43             return a / b;
44         }
45
46         1 reference
47         static double Modulus(double a, double b)
48         {
49             return a % b;
50         }
51     }
52 }
```

```
45 static void Main(string[] args)
46 {
47     int operation;
48     ArithmeticDelegate arithmetic = null;
49     double n1, n2;
50
51     do
52     {
53         Console.WriteLine("Enter two numbers");
54         n1 = double.Parse(Console.ReadLine());
55         n2 = double.Parse(Console.ReadLine());
56
57         Menu();
58         operation = int.Parse(Console.ReadLine());
59
60         switch (operation)
61         {
62             //Addition
63             case 1:
64                 arithmetic = new ArithmeticDelegate(Add);
65                 break;
66             //Subtraction
67             case 2:
68                 arithmetic = new ArithmeticDelegate(Subtract);
69                 break;
70             //Multiplication
71             case 3:
72                 arithmetic = new ArithmeticDelegate(Multiply);
73                 break;
74             //Division
75             case 4:
76                 arithmetic = new ArithmeticDelegate(Divide);
77                 break;
78             //Remainder
79             case 5:
80                 arithmetic = new ArithmeticDelegate(Modulus);
81                 break;
82             default:
83                 Console.WriteLine("Exiting program");
84                 break;
85         }
86         if (arithmetic != null)
87         {
88             Console.WriteLine("Answer is: "+arithmetic(n1, n2));
89         }
90         Console.WriteLine("Press any key to continue");
91         Console.ReadKey(true);
92         Console.Clear();
93
94     } while (operation != 6);
95
96 }
97
98 }
```

Output:

```
D:\Marwadi\SEM-6\dotNET\LAB\Practical 4\Calculator_delegate\bin\Debug\Calculator_delegate.exe
Enter two numbers
5
6
Select an arithmetic operation
1)Addition
2)Subtraction
3)Multiplication
4)Division
5)Remainder
6)Quit
3
Answer is: 30
Press any key to continue
■
```