.Net Technology (01CE0602)

Department of Computer Engineering

6th Semester

Lab Manual

(Year: 2022-23)

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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).		

<table>
<tr><td>4</td><td>a. Apply Interface to find the area of Square, Rectangle and Circle. Display proper output.
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b. Write a C# Console based application to display all the records of a table.
<table>
<tr><th>Emp_id</th><th>Name</th><th>Designation</th><th>Department</th><th>Salary</th></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>
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<tr><td>6</td><td>a. Write a C# Console based application to implement a functionality to insert a new record in the table
b. Write a C# Console based application to implement a functionality to display specific record from the table
Use Above Table as per Lab 5.</td><td></td><td></td></tr>
<tr><td>7</td><td>a. Create a Simple Calculator using Windows Forms.
b. Create a Windows Forms that will change the background color, forecolor and styling of the given text.</td><td></td><td></td></tr>
<tr><td>8</td><td>a. Create a Windows Form that will move the data from one tool to other tool (Usage of ComboBox and ListBox)
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.</td><td></td><td></td></tr>
<tr><td>9</td><td>a. Create a GUI for the following: Consider textbox(txt1) for Full Name, textbox(txt2) for enrolment, textbox(txt3) for email,</td><td></td><td></td></tr>
</table>

	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".		
10	a. Write a Windows based application to create following table using ADO. Net. b. Write a C# Windows based application to display all the records of a table. Use Above Table as per Lab 5.		
11	a. Write a C# Windows based application to implement a functionality to insert a new record in the table b. Write a C# Windows based application to implement a functionality to display specific record from the table. Use Above Table as per Lab 5.		
12	a. Write a C# Windows based application to implement a functionality to insert a new record in the table b. Write a C# Windows based application to implement a functionality to display specific record from the table. Use Above Table as per Lab 5.		
13	a. Write a C# code to generate 3 different lines of different colors. b. Write a C# code to generate 4 different lines of Multicolor Rectangle. c. Write a C# code to generate 2 ellipses on a windows form.		
14	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. 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.		

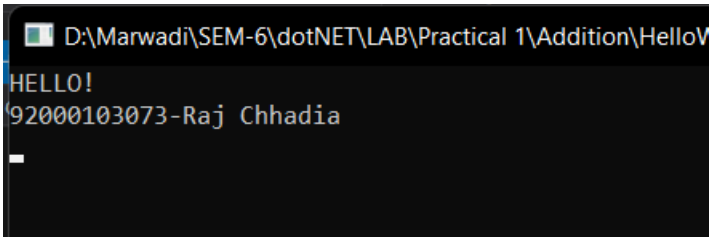
LAB - 1

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

Code:

```
using System;

namespace HelloWorld
{
    internal class Program
    {
        private static void Main(string[] args)
        {
            Console.WriteLine("HELLO!");
            Console.WriteLine("92000103073-Raj Chhadia");
            Console.ReadKey();
        }
    }
}
```

Output:

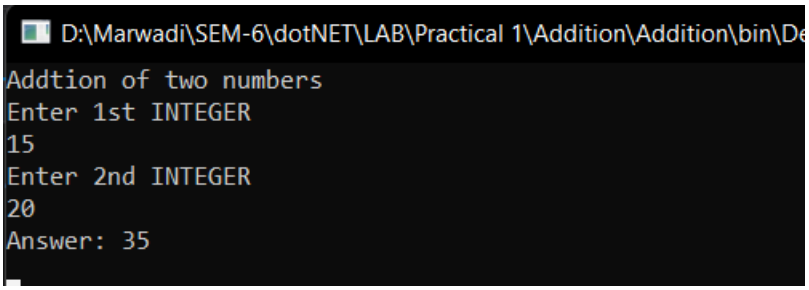


Program 2: Write a C# Program to add 2 Numbers.

Code:

```
using System;
namespace Addition
{
    internal class Program
    {
        private static void Main(string[] args)
        {
            Console.WriteLine("Addtion of two numbers");
            Console.WriteLine("Enter 1st INTEGER");
            int a = int.Parse(Console.ReadLine());
            Console.WriteLine("Enter 2nd INTEGER");
            int b = int.Parse(Console.ReadLine());

            int c = a + b;

            Console.WriteLine("Answer: " + c);
            Console.ReadKey();
        }
    }
}
```

Output:

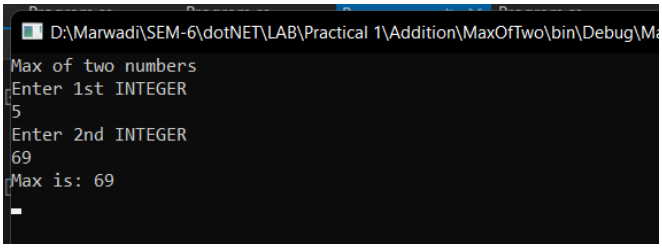


Program 3: Write a C# Program to find maximum of 2 Numbers.

Code:

```
using System;
namespace MaxOfTwo
{
    internal class Program
    {
        private static void Main(string[] args)
        {
            Console.WriteLine("Max of two numbers");
            Console.WriteLine("Enter 1st INTEGER");
            int a = int.Parse(Console.ReadLine());
            Console.WriteLine("Enter 2nd INTEGER");
            int b = int.Parse(Console.ReadLine());
            if (a > b)
                Console.WriteLine("Max is : " + a);
            else if (b > a)
                Console.WriteLine("Max is: " + b);
            else
                Console.WriteLine("Both are equal");
            Console.ReadKey();
        }
    }
}
```

Output:



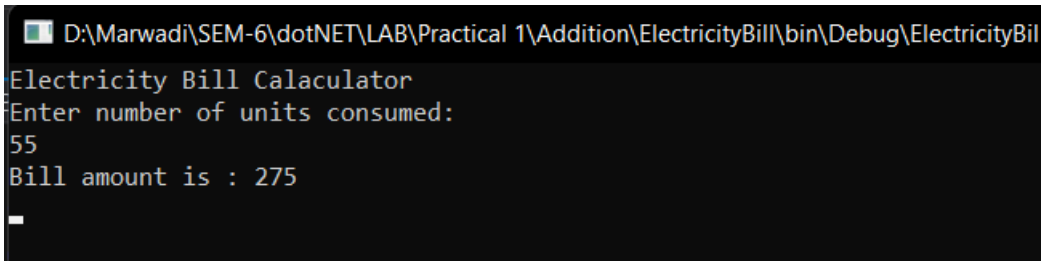
Program 4: Write a C# Program to generate electricity bill using Else-If ladder

Code:

```
using System;
namespace ElectricityBill
{
    internal class Program
    {
        private static void Main(string[] args)
        {
            Console.WriteLine("Electricity Bill
Calaculator");
            Console.WriteLine("Enter number of units
consumed: ");
            float a = float.Parse(Console.ReadLine());
            if (a > 0 && a <= 100)
                Console.WriteLine("Bill amount is : " + (a
* 5));
            else if (a >= 100 && a < 200)
                Console.WriteLine("Bill amount is : " + (a
* 10));
            else if (a >= 200 && a < 300)
                Console.WriteLine("Bill amount is : " + (a
* 20));
            else if (a >= 300 && a < 400)
                Console.WriteLine("Bill amount is : " + (a
* 30));
            else if (a >= 400 && a < 500)
                Console.WriteLine("Bill amount is : " + (a
* 40));
            else
```

```
                Console.WriteLine("Bill amount is : " + (a
* 50));
            Console.Read();
        }
    }
}
```

Output:



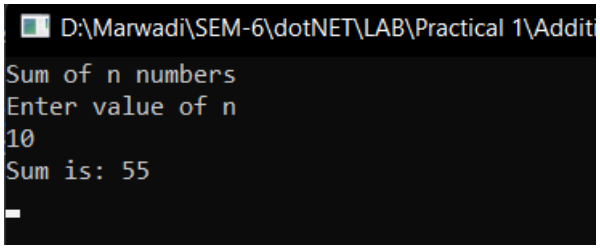
Program 5: Write a C# Program to find the sum of first N numbers.

Code:

```
using System;
namespace SumOfN
{
    internal class Program
    {
        private static void Main(string[] args)
        {
            Console.WriteLine("Sum of n numbers");
            Console.WriteLine("Enter value of n");
            int a = int.Parse(Console.ReadLine());
            int sum = 0;
```

```
                for (int i = 1; i <= a; i++)
                {
                    sum += i;
                }
                Console.WriteLine("Sum is: " + sum);
                Console.Read();
            }
        }
    }
```

Output:



LAB - 2

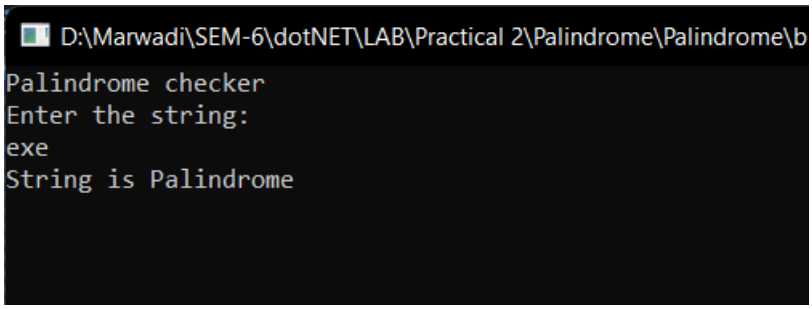
Program 1: Write a C# Program to check a number is Palindrome or not.

Code:

```
using System;


namespace Palindrome
{
    internal class Program
    {
        private static void Main(string[] args)
        {
            Console.WriteLine("Palindrome checker");
            Console.WriteLine("Enter the string: ");
            string originalString = Console.ReadLine();
            char[] stringArray =
originalString.ToCharArray();
            Array.Reverse(stringArray);
            string reverseString = new
string(stringArray);


            if (reverseString.Equals(originalString))
                Console.WriteLine("String is
Palindrome");
            else
                Console.WriteLine("String is not
Palindrome");
            Console.ReadKey();
        }
    }
```

```
    }
```

Output:

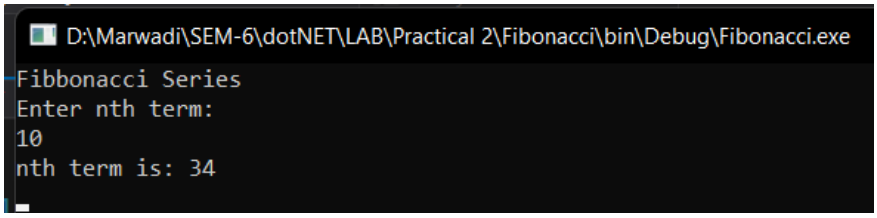

D:\Marwadi\SEM-6\dotNET\LAB\Practical 2\Palindrome\Palindrome\b
Palindrome checker
Enter the string:
exe
String is Palindrome

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

Code:

```
using System;
namespace Fibonacci {
    internal class Program {
        public static int Fibonacci(int n)  {
            if (n == 1)
                return 0;
            else if (n == 2)
                return 1;
            else
                return Fibonacci(n - 1) + Fibonacci(n -
2);
        }
        private static void Main(string[] args) {
            Console.WriteLine("Fibbonacci Series");
            Console.WriteLine("Enter nth term: ");
            int number = int.Parse(Console.ReadLine());
            int term = Fibonacci(number);
            Console.WriteLine("nth term is: " + term);
            Console.ReadKey();
        }
    }
}
```

Output:



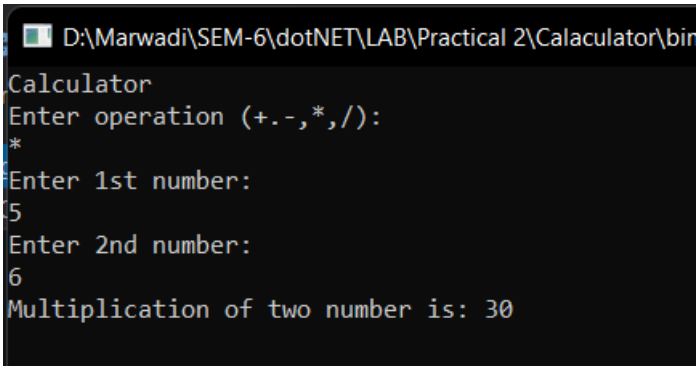
Program 3: Write a C# program to create a calculator using Switch Case.

Code:

```
using System;


namespace Calculator
{
    internal class Program
    {
        private static void Main(string[] args)
        {
            Console.WriteLine("Calculator");
            Console.WriteLine("Enter operation (+.-,*,/): ");
            string operation = Console.ReadLine();
            Console.WriteLine("Enter 1st number: ");
            float a = float.Parse(Console.ReadLine());
            Console.WriteLine("Enter 2nd number: ");
            float b = float.Parse(Console.ReadLine());
            switch (operation)
            {
                case "+":
                    Console.WriteLine("Addition of two number
is: " + (a + b));
                    break;


                case "-":
                    Console.WriteLine("Subtraction of two
number is: " + (a - b));
                    break;


                case "*":
```

```
                    Console.WriteLine("Multiplication of two
number is: " + (a * b));
                    break;


                case "/":
                    Console.WriteLine("Division of two number
is: " + (a / b));
                    break;


                default:
                    Console.WriteLine("Invalid Input!");
                    break;
            }
            Console.ReadKey();
        }
    }
}
```

Output:



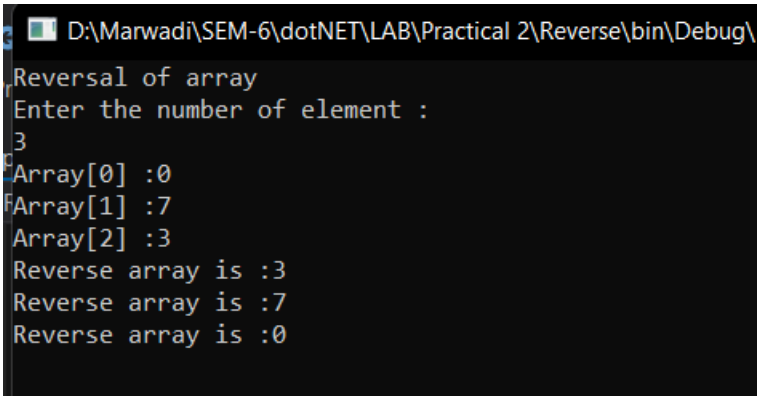
Program 4: Write a C# Program to print a given array in reverse.

Code:

```
using System;


namespace Reverse
{
    internal class Program
    {
        private static void Main(string[] args)
        {
            Console.WriteLine("Reversal of array");
            Console.WriteLine("Enter the number of element :
");
            int size = Convert.ToInt32(Console.ReadLine());

            int[] original_array = new int[size];

            for (int i = 0; i < size; i++)
            {
                Console.Write("Array[{0}] :", i);
                original_array[i] =
Convert.ToInt32(Console.ReadLine());
            }
            Array.Reverse(original_array);
            for (int i = 0; i < size; i++)
            {
                Console.Write("Reverse array is :");
                Console.WriteLine(original_array[i]);
            }
            Console.Read();
```

```
            }
        }
    }
```

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

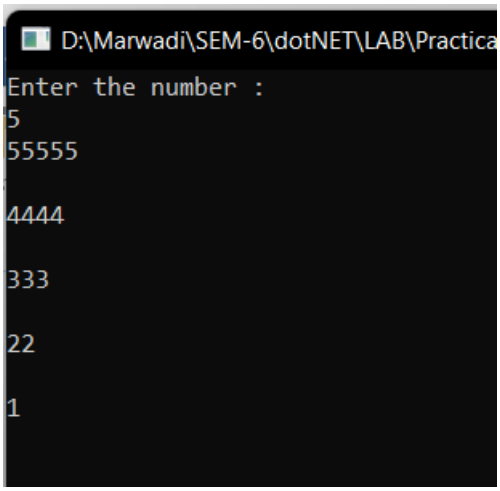
22

1

Code:

```
using System;

internal class HelloWorld
{
    private static void Main()
    {
        Console.WriteLine("Enter the number : ");
        int number = Convert.ToInt32(Console.ReadLine());

        for (int i = 0; i < number; i++)
        {
            for (int j = number - i; j > 0; j--)
            {
                Console.Write(number - i);
            }
            Console.WriteLine("\n");
        }
        Console.Read();
    }
}
```

Output:


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

LAB - 3

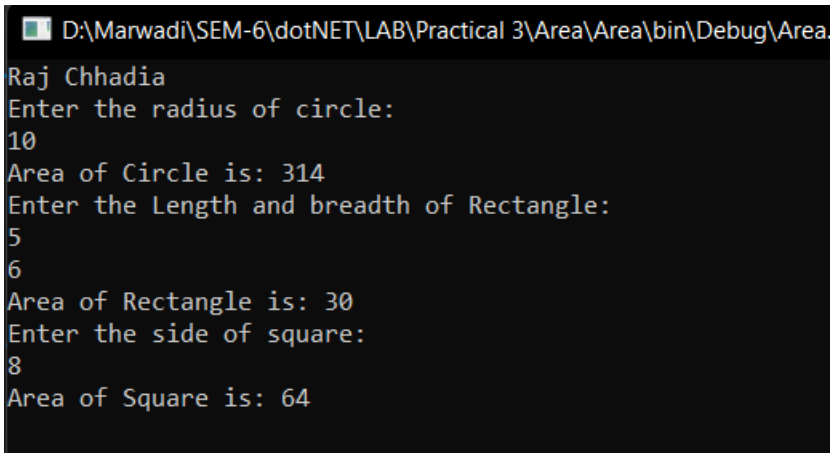
Program 1: Write a C# program find area of Circle, Rectangle and Square using Polymorphism.

Code:

```
using System;
namespace Area
{
    internal class Circle
    {
        public void area(float r)
        {
            float area = (float)3.14 * r * r;
            Console.WriteLine("Area of Circle is: " +
area);
        }
    }

    internal class Rectangle : Circle
    {
        public void area(float l, float b)
        {
            float area = (float)l * b;
            Console.WriteLine("Area of Rectangle is: " +
area);
        }
    }

    internal class Square : Rectangle
    {
```

```
        public void area(float s)
        {
            float area = (float)s * s;
            Console.WriteLine("Area of Square is: " +
area);
        }
    }

    internal class Program : Square
    {
        private static void Main(string[] args)
        {
            Circle c = new Circle();
            Rectangle r = new Rectangle();
            Square s = new Square();
            Console.WriteLine("Raj Chhadia");
            Console.WriteLine("Enter the radius of
circle: ");
            c.area(float.Parse(Console.ReadLine()));
            Console.WriteLine("Enter the Length and
breadth of Rectangle: ");
            r.area(float.Parse(Console.ReadLine()),
float.Parse(Console.ReadLine()));
            Console.WriteLine("Enter the side of square:
");
            s.area(float.Parse(Console.ReadLine()));
            Console.ReadKey();
        }
    }
}
```

Output:



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:

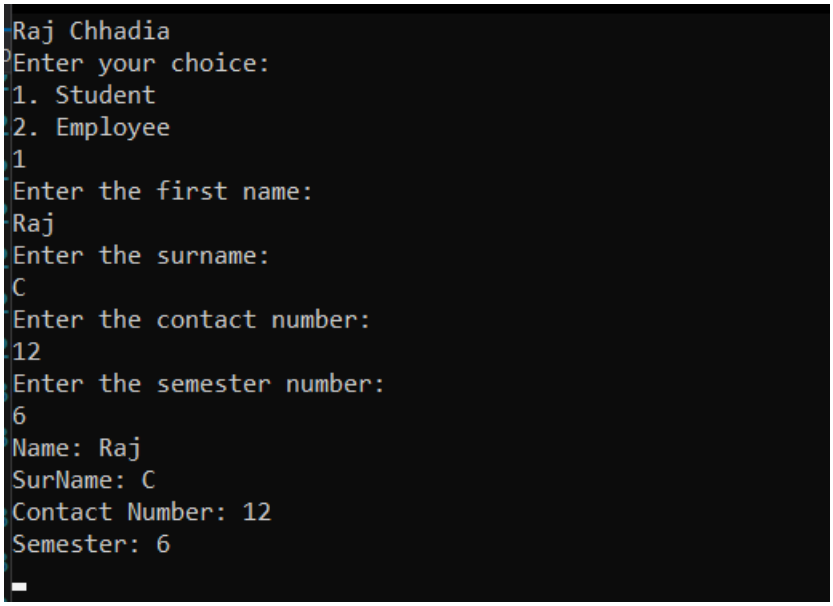
```
using System;

namespace Information
{
    internal class Program
    {
        private static void Main(string[] args)
        {
            Console.WriteLine("Raj Chhadia");
            Student s1 = new Student();
            Employee e1 = new Employee();
            Console.WriteLine("Enter your choice: ");
            Console.WriteLine("1. Student");
            Console.WriteLine("2. Employee");
            int choice = int.Parse(Console.ReadLine());
```

```
            switch (choice)
            {
                case (1):
                    s1.getData();
                    s1.putData();
                    break;

                case (2):
                    e1.getData();
                    e1.putData();
                    break;
            }
            Console.Read();
        }
    }

    internal class Information
    {
        public string name;
        public string surname;
        public int number;

        public void getData()
        {
            Console.WriteLine("Enter the first name: ");
            name = Console.ReadLine();
            Console.WriteLine("Enter the surname: ");
            surname = Console.ReadLine();
            Console.WriteLine("Enter the contact number: ");
```

```
            number = int.Parse(Console.ReadLine());
        }
    }

    internal class Employee : Information
    {
        private int salary;

        public void getData()
        {
            base.getData();
            Console.WriteLine("Enter the employee salary: ");
            salary = int.Parse(Console.ReadLine());
        }

        public void putData()
        {
            Console.WriteLine("Name: " + name);
            Console.WriteLine("SurName: " + surname);
            Console.WriteLine("Contact Number: " + number);
            Console.WriteLine("Salary: " + salary);
        }
    }

    internal class Student : Information
    {
        private int semester;

        public void getData()
```

```
        {
            base.getData();
            Console.WriteLine("Enter the semester number: ");
            semester = int.Parse(Console.ReadLine());
        }

        public void putData()
        {
            Console.WriteLine("Name: " + name);
            Console.WriteLine("SurName: " + surname);
            Console.WriteLine("Contact Number: " + number);
            Console.WriteLine("Semester: " + semester);
        }
    }
}
```

Output:



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:

```
using System;
namespace Apartment
{
    internal class Program
    {
        private static void Main(string[] args)
        {
            OneBHK f1 = new OneBHK();
            f1.welcome();
            f1.display();
            f1.balcony();

            TwoBHK f2 = new TwoBHK();
            f2.welcome();
            f2.display();
            f2.balcony();

            ThreeBHK f3 = new ThreeBHK();
            f3.welcome();
            f3.display();
            f3.balcony();

            Console.ReadKey();
```

```
        }
    }

    public class Flat
    {
        public void welcome()
        {
            Console.WriteLine("Welcome to Beautiful
Apartment... Raj Chhadia");
        }

        public virtual void display()
        {
            Console.WriteLine("Not ready yet...");
        }

        public virtual void features()
        {
            Console.WriteLine("Not ready yet...");
            balcony();
        }

        public virtual void balcony()
        {
            Console.WriteLine("Not ready yet...");
        }
    }

    public class OneBHK : Flat
    {
```

```
        public override void display()
        {
            Console.WriteLine("This is 1 BHK flat");
        }

        public override void features()
        {
            Console.WriteLine("\tFeatures...");
            balcony();
        }

        public override void balcony()
        {
            Console.WriteLine("\tBalcony: Rectangular\n");
        }
    }

    public class TwoBHK : OneBHK
    {
        public override void display()
        {
            Console.WriteLine("This is 2 BHK flat");
        }

        public override void features()
        {
            Console.WriteLine("\tFeatures...");
            balcony();
        }
```

```
        public override sealed void balcony()
        {
            Console.WriteLine("\tBalcony: Circular\n");
        }
    }

    public sealed class ThreeBHK : TwoBHK
    {
        public override void display()
        {
            Console.WriteLine("This is 3 BHK flat");
        }

        public override void features()
        {
            Console.WriteLine("\tFeatures...");
            balcony();
        }
    }
}
```

Output: