Lab 1

1.Write a Program to demonstrate the difference between Console.ReadLine() and Console.Read(), Console.Write() and Console.WriteLine() in C#.

Code:

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
namespace lab1
{
   internal class Program
   {
      static void Main(string[] args)
      {
         Console.WriteLine("-----Console.ReadLine----");
         Console.Write("Enter Your Name: ");
         string name = Console.ReadLine(); // Reads entire line
         Console.WriteLine($"Your name is {name}.");

         Console.WriteLine("-----Console.Read--------");
         Console.Write("Enter a character:");
```

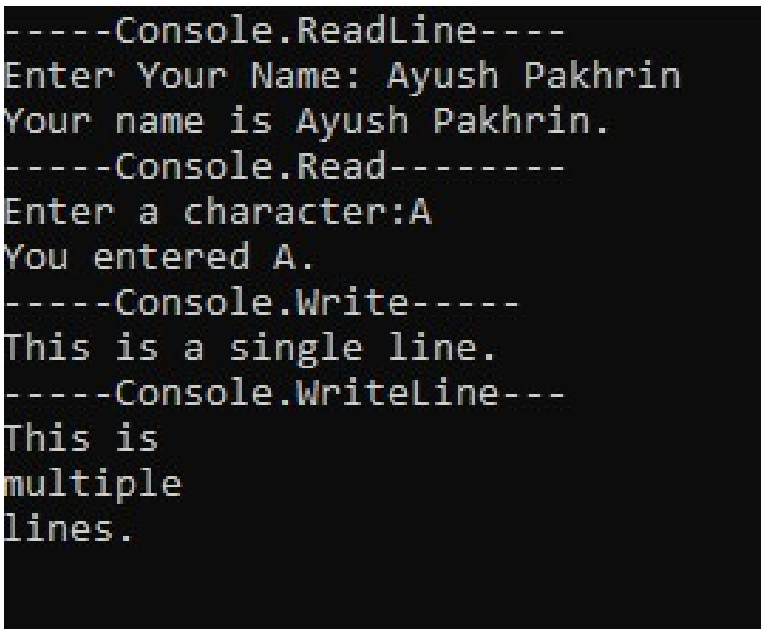
```
            char charac = (char)Console.Read(); // Reads only one character
            Console.WriteLine($"You entered {charac}.");

            Console.WriteLine("-----Console.Write-----");
            Console.Write("This is ");
            Console.Write("a single ");
            Console.Write("line."); // Outputs without newline

            Console.WriteLine();

            Console.WriteLine("-----Console.WriteLine---");
            Console.WriteLine("This is");
            Console.WriteLine("multiple");
            Console.WriteLine("lines."); // Outputs with newline each time
            Console.ReadKey();
        }
    }
}
```

Output:


-----Console.ReadLine----
Enter Your Name: Ayush Pakhrin
Your name is Ayush Pakhrin.
-----Console.Read--------
Enter a character:A
You entered A.
-----Console.Write-----
This is a single line.
-----Console.WriteLine---
This is
multiple
lines.

Lab 2

2.Write a program to add number x, y and z. One Function to add x and y another function to add all three Numbers. Print on Screen As given output.

Code:

```
using System;


namespace lab2
{
   internal class Program
   {
      static void Main(string[] args)
      {
         Console.WriteLine($"The Sum of 5 and 6 = {Sum(5, 6)}");
         Console.WriteLine();
         Console.WriteLine($"The Sum of 5,6 and 7 = {Sum(5,6,7)}");
         Console.ReadKey();
      }
      static int Sum(int x,int y)
      {
         return x + y;
      }
      static int Sum(int x,int y,int z)
      {
         return x + y + z;
      }
   }
}
```

Output:


C:\Users\pakhr\OneDrive\Desktop\.labreport\lab2\bin\Debug\lab2.exe
The Sum of 5 and 6 = 11
The Sum of 5,6 and 7 = 18

Lab 3

3.Write a Program to implement the concept of default constructor, parameterized Constructor.

Code:

Program.cs

```
using lab3.Classes;
using System;
namespace lab3
{
   internal class Program
   {
      static void Main(string[] args)
      {
         Wish Wish = new Wish();
         Console.WriteLine("-----Default Constructor----------");
         Wish.Happy();
         Console.WriteLine();
         Console.WriteLine("-----Parameterized Constructor----");
         Wish Wish2 = new Wish("Merry Christmas","Duck");
         Wish2.Happy();
         Console.ReadKey();
      }
   }
}
```

Wish.cs

```
using System;
using System;

namespace lab3.Classes
{
   public class Wish
   {
      public string wish;
      public string name;
      public Wish()
      {
         wish = "Happy Birthday";
         name= "Ayush";
      }
      public Wish(string wish,string Name)
      {
         this.wish = wish;
         this.name = Name;

      }
      public void Happy()
      {
         Console.WriteLine($"{wish} {name}!");
      }
   }
}
```

Output:


C:\Users\pakhr\OneDrive\Desktop\.labreport\lab3\bin\Debug\lab3.exe
-----Default Constructor----------
Happy Birthday Ayush!
-----Parameterized Constructor----
Merry Chirstmas Duck!

Lab 4

4. Write the concept of multilevel inheritance and multiple inheritance in C#.

Code:

Multilevel inheritance:

```
using System;


namespace lab4
{
   public class Animal
   {
      public void Eat()
      {
         Console.WriteLine("Animal is Eating");
      }
   }
   public class Dog:Animal
   {
      public void Bark()
      {
         Console.WriteLine("Dog is barking.");
      }
   }
   public class Doberman:Dog
   {
      public void Type()
      {
         Console.WriteLine("Doberman is a security Type Dog.");
```

```
    }
  }

  public class Program
  {
    static void Main(string[] args)
    {
      Doberman doberman = new Doberman();
      doberman.Eat();
      doberman.Bark();
      doberman.Type();
      Console.ReadKey();
    }
  }
}
```

Output:

Multiple Inheritance:

```
using System;

namespace lab4._1
{
   public interface Addition
   {
      double add(double a, double b);
   }
   public interface Substraction
   {
      double sub(double a, double b);
   }
   public interface Multiply
   {
      double mul(double a, double b);
   }
   public interface Division
   {
      double div(double a, double b);
   }
  public class Calculation : Addition, Substraction, Division, Multiply
   {
      public double add(double a, double b)
      {
         return a + b;
      }
      public double sub(double a, double b)
```

```
        {
            return a - b;
        }

        public double mul(double a, double b)
        {
            return a * b;
        }
        public double div(double a, double b)
        {
            return a / b;
        }
        public class Program
        {
            static void Main(string[] args)
            {
                Calculation calc = new Calculation();
                Console.WriteLine($"Addition:{calc.add(5, 6)}");
                Console.WriteLine($"Substraction:{calc.sub(10,5)}");
                Console.WriteLine($"Multiplication:{calc.mul(5,5)}");
                Console.WriteLine($"Division:{calc.div(10,5)}");
                Console.ReadKey();
            }
        }
    }
}
```

Output:


C:\Users\pakhr\OneDrive\Desktop\.labreport\lab4.1\bin\Debug\lab4.1.exe
Addition:11
Substraction:5
Multiplication:25
Division:2

Lab 5

5. Write a program on method overloading and method overriding in C#.

Code:

Method Overriding:

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


namespace lab5
{
   public class RoadHouse
   {
     public virtual void SpecialDish()
      {
         Console.WriteLine("Today's Special Dish is BBQ Pizza.");
      }
   }
   public class LavieHouse:RoadHouse
   {
      public override void SpecialDish()
      {
         Console.WriteLine("Today's Special Dish is Arabic Biryani.");
      }
   }
```

```
    public class Program
    {
        static void Main(string[] args)
        {
            RoadHouse roadHouse = new RoadHouse();
            roadHouse.SpecialDish();
            LavieHouse lavie = new LavieHouse();
            lavie.SpecialDish();
            Console.ReadKey();
        }
    }
}
```

Output:

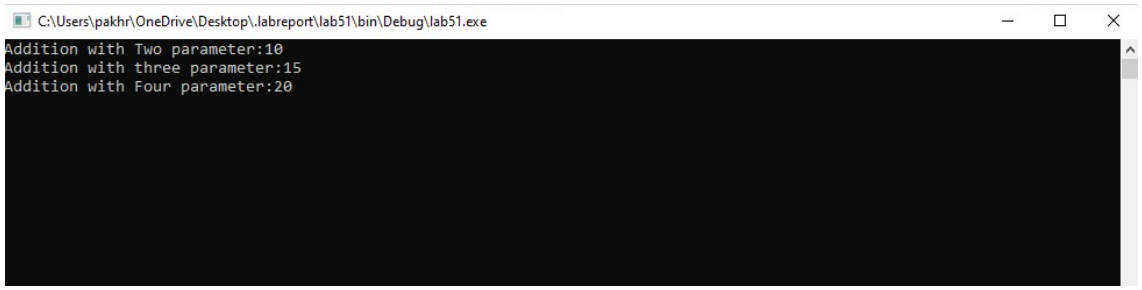
Method Overloading:

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

namespace lab51
{
   public class Addition
   {
      public int Sum(int a, int b)
      {
         return a + b;
      }
      public int Sum(int a, int b, int c)
      {
         return a + b + c;
      }
      public int Sum(int a, int b, int c, int d)
      {
         return a + b + c + d;
      }
   }
   public class Program
   {
      static void Main(string[] args)
      {
```

```
 Addition addition = new Addition();
Console.WriteLine($"Addition with Two parameter:{addition.Sum(5, 5)}");
Console.WriteLine($"Addition with three parameter:{addition.Sum(5, 5, 5)}");
Console.WriteLine($"Addition with Four parameter:{addition.Sum(5, 5, 5, 5)}");
Console.ReadKey();
        }
    }
}
```

Output:



Lab 6

6. Write a C# console application that calculates the final grade based on individual scores.

Code:

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


namespace lab6
{
   internal class Program
   {
      static void Main(string[] args)
      {
         Console.Write("Enter Marks for Dotnet:");
         double mark1=double.Parse(Console.ReadLine());
         Console.Write("Enter Marks for MIS:");
         double mark2=double.Parse(Console.ReadLine());
         Console.Write("Enter Marks for ComputerNetworking:");
         double mark3=double.Parse(Console.ReadLine());
         Console.Write("Enter Marks for Management:");
         double mark4=double.Parse(Console.ReadLine());
         Console.Write("Enter Marks for Computer Graphics:");
         double mark5=double.Parse(Console.ReadLine());
         double total=mark1 + mark2 + mark3 + mark4+mark5;
         Console.WriteLine("----------------------------");
```

```
            string grade;
            if(total >= 400 && total <= 500)
            {
               grade = "A";
            }
            else if(total>=300 && total < 400)
            {
               grade = "B";
            }
            else if(total>=200 && total < 300)
            {
               grade = "C";
            }
            else if(total>=100 && total < 200)
            {
               grade = "D";
            }
            else
            {
               grade="E";
            }
            Console.WriteLine("Final Grade:"+grade);
            Console.ReadKey();
        }
    }
}
```

Output:


C:\Users\pakhr\OneDrive\Desktop\.labreport\lab6\bin\Debug\lab6.exe
Enter Marks for Dotnet:97
Enter Marks for MIS:68
Enter Marks for ComputerNetworking:79
Enter Marks for Management:79
Enter Marks for Computer Graphics:60

Final Grade:B

Lab 7

7.Write a program that checks user input number is odd or even.

Code:

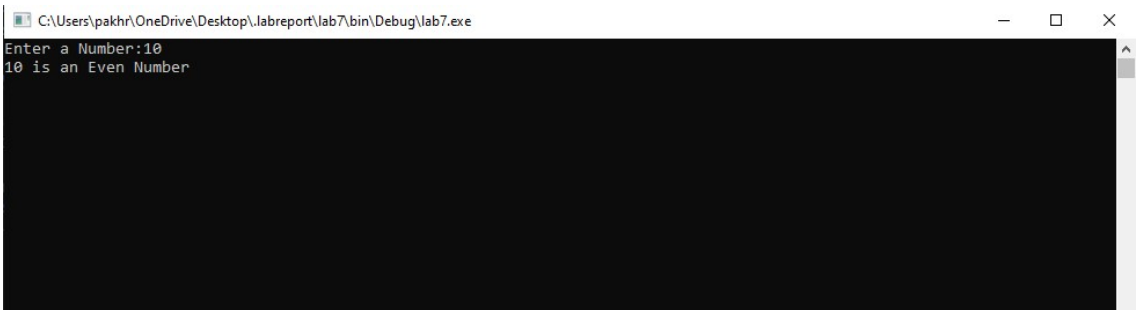
```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace lab7
{
   internal class Program
   {
      static void Main(string[] args)
      {
         Console.Write("Enter a Number:");
         int n=int.Parse(Console.ReadLine());
         if(n%2==0)
         {
            Console.WriteLine($"{n} is an Even Number");
         }
         else
         {
            Console.WriteLine($"{n} is an Odd Number.");
         }
         Console.ReadKey();

      }
```

```
    }
}
```

Output:


C:\Users\pakhr\OneDrive\Desktop\.labreport\lab7\bin\Debug\lab7.exe
Enter a Number:10
10 is an Even Number


C:\Users\pakhr\OneDrive\Desktop\.labreport\lab7\bin\Debug\lab7.exe
Enter a Number:7
7 is an Odd Number.

Lab 8

8.Build a simple calculator that performs addition, subtraction, multiplication, or division based on user input using function.

Code:

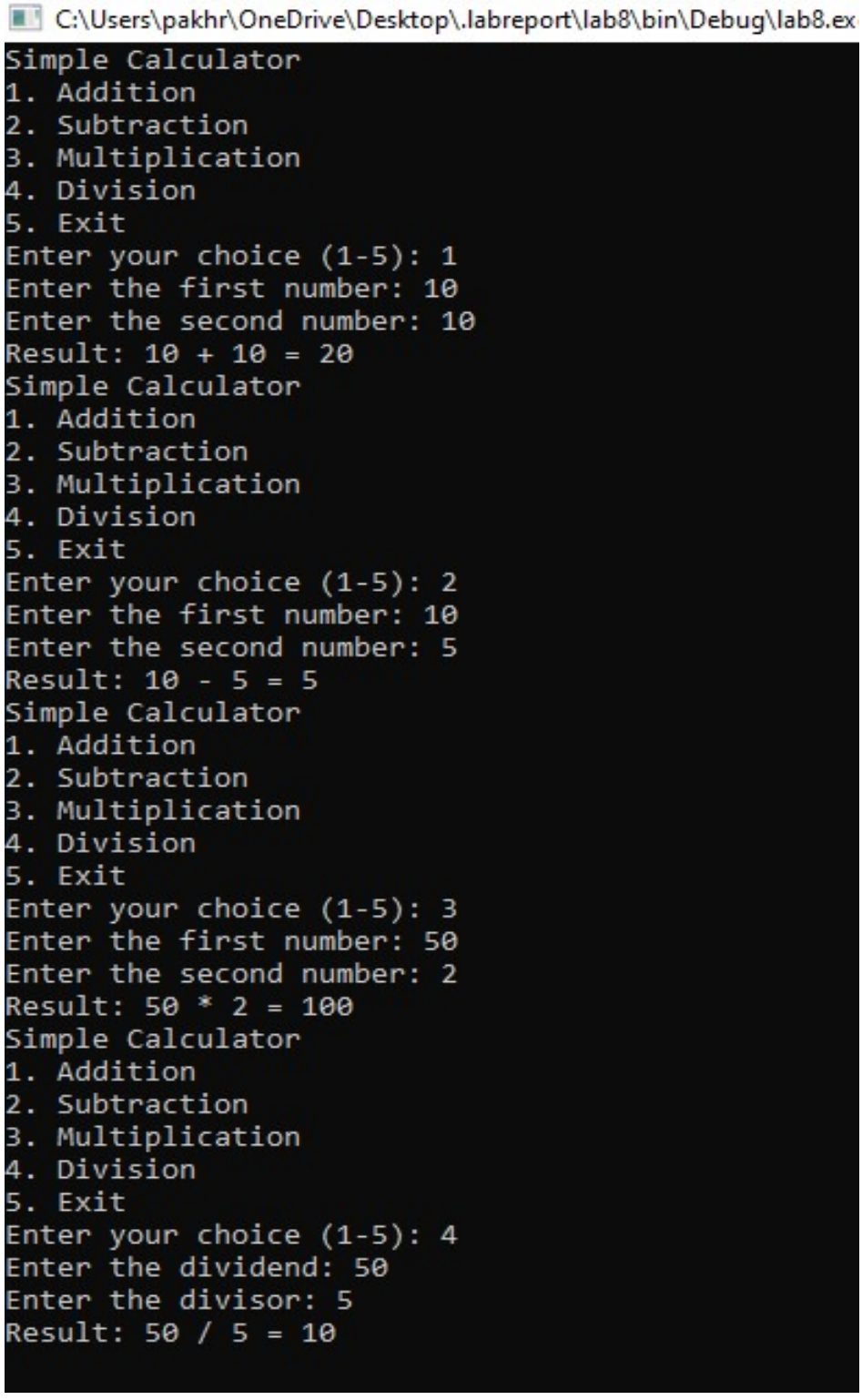
```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
namespace lab8
{
   class Program
   {
      static void Main()
      {
         bool exit = false;
         while (!exit)
         {
            Console.WriteLine("Simple Calculator");
            Console.WriteLine("1. Addition");
            Console.WriteLine("2. Subtraction");
            Console.WriteLine("3. Multiplication");
            Console.WriteLine("4. Division");
            Console.WriteLine("5. Exit");
            Console.Write("Enter your choice (1-5): ");
            int choice = int.Parse(Console.ReadLine());
            switch (choice)
            {
```

```
                case 1:
                    Addition();
                    break;
                case 2:
                    Subtraction();
                    break;
                case 3:
                    Multiplication();
                    break;
                case 4:
                    Division();
                    break;
                case 5:
                    exit = true;
                    Console.WriteLine("Exiting the calculator. Goodbye!");
                    break;
                default:
                    Console.WriteLine("Invalid choice. Please enter a number
between 1 and 5.");
                break;
                }
            }
        }
        static void Addition()
        {
            Console.Write("Enter the first number: ");
            double num1 = double.Parse(Console.ReadLine());
            Console.Write("Enter the second number: ");
            double num2 = double.Parse(Console.ReadLine());
```

```
    double result = num1 + num2;
    Console.WriteLine($"Result: {num1} + {num2} = {result}");
}
static void Subtraction()
{
    Console.Write("Enter the first number: ");
    double num1 = double.Parse(Console.ReadLine());
    Console.Write("Enter the second number: ");
    double num2 = double.Parse(Console.ReadLine());
    double result = num1 - num2;
    Console.WriteLine($"Result: {num1} - {num2} = {result}");
}
static void Multiplication()
{
    Console.Write("Enter the first number: ");
    double num1 = double.Parse(Console.ReadLine());
    Console.Write("Enter the second number: ");
    double num2 = double.Parse(Console.ReadLine());
    double result = num1 * num2;
    Console.WriteLine($"Result: {num1} * {num2} = {result}");
}
static void Division()
{
    Console.Write("Enter the dividend: ");
    double dividend = double.Parse(Console.ReadLine());
    Console.Write("Enter the divisor: ");
    double divisor = double.Parse(Console.ReadLine());
    if (divisor == 0)
    {
```

```
            Console.WriteLine("Error: Division by zero is not allowed.");
        }
        else
        {
            double result = dividend / divisor;
            Console.WriteLine($"Result: {dividend} / {divisor} =
{result}");
        }
        Console.ReadKey();
    }
  }
}
```

Output:


C:\Users\pakhr\OneDrive\Desktop\.labreport\lab8\bin\Debug\lab8.ex
Simple Calculator
1. Addition
2. Subtraction
3. Multiplication
4. Division
5. Exit
Enter your choice (1-5): 1
Enter the first number: 10
Enter the second number: 10
Result: 10 + 10 = 20
Simple Calculator
1. Addition
2. Subtraction
3. Multiplication
4. Division
5. Exit
Enter your choice (1-5): 2
Enter the first number: 10
Enter the second number: 5
Result: 10 - 5 = 5
Simple Calculator
1. Addition
2. Subtraction
3. Multiplication
4. Division
5. Exit
Enter your choice (1-5): 3
Enter the first number: 50
Enter the second number: 2
Result: 50 * 2 = 100
Simple Calculator
1. Addition
2. Subtraction
3. Multiplication
4. Division
5. Exit
Enter your choice (1-5): 4
Enter the dividend: 50
Enter the divisor: 5
Result: 50 / 5 = 10

Lab 9

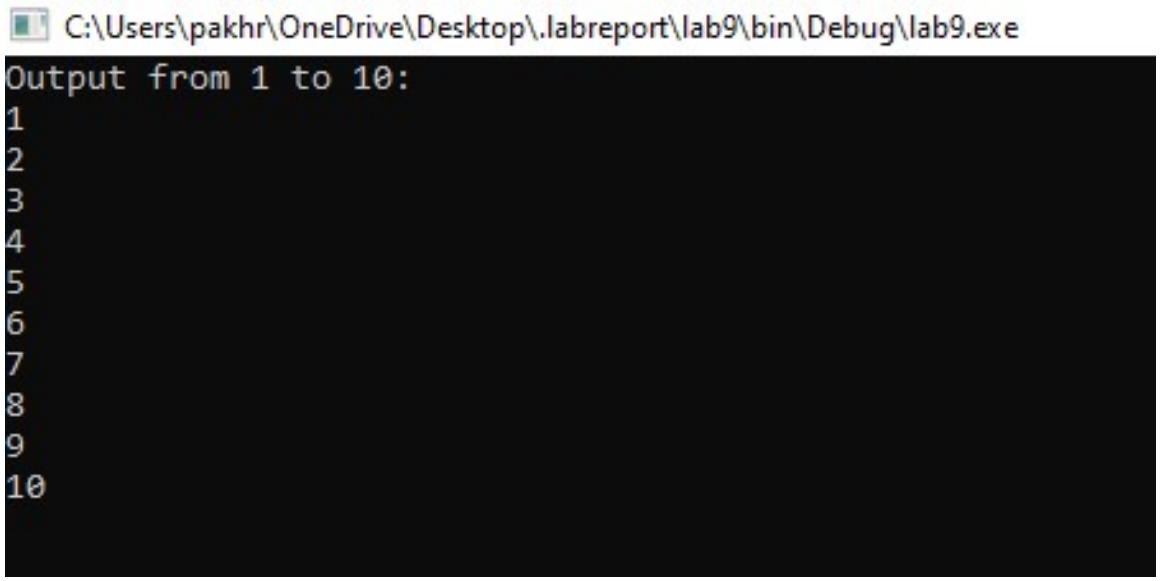
9. Write a program that prints numbers from 1 to 10 using a for loop. Use a for loop to iterate through the numbers and display each number to the console.

Code:

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


namespace lab9
{
   internal class Program
   {
      static void Main(string[] args)
      {
         Console.WriteLine("Output from 1 to 10:");
         for (int i = 1; i <= 10; i++)
         {
            Console.WriteLine(i);
         }
         Console.ReadKey();
      }
   }
}
```

Output:


C:\Users\pakhr\OneDrive\Desktop\.labreport\lab9\bin\Debug\lab9.exe
Output from 1 to 10:
1
2
3
4
5
6
7
8
9
10

Lab 10

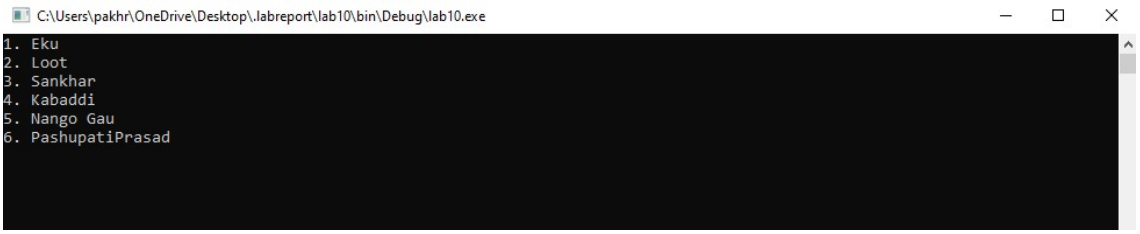
10.Create a program that initializes an array with some predefined values. Use a foreach loop to iterate through the array and display each element to the console.

Code:

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

namespace lab10
{
   internal class Program
   {
      static void Main(string[] args)
      {
         int i = 1;
         string[] movies = new string[] { "Eku",
"Loot","Sankhar","Kabaddi","Nango Gau","PashupatiPrasad" };
         foreach (string movie in movies)
         {
            Console.WriteLine($"{i}. {movie}");
            i++;
         }
         Console.ReadKey();
      }
   }
}
```

Output:


C:\Users\pakhr\OneDrive\Desktop\.labreport\lab10\bin\Debug\lab10.exe
1. Eku
2. Loot
3. Sankhar
4. Kabaddi
5. Nango Gau
6. PashupatiPrasad