Task -1

```
using System;
public
class math
{
   static void MaximumNumber()
   {
      Console.WriteLine("Enter First Number");
      int num1 = Convert.ToInt32(Console.ReadLine());
      Console.WriteLine("Enter First Number");
      int num2 = Convert.ToInt32(Console.ReadLine());
      Console.WriteLine($"Maximum of Both Numbers is : {Math.Max(num1,
num2)}");
   }
   static void MinimumNumber()
   {
      Console.WriteLine("Enter First Number");
      int num1 = Convert.ToInt32(Console.ReadLine());
      Console.WriteLine("Enter Second Number");
      int num2 = Convert.ToInt32(Console.ReadLine());
      Console.WriteLine("Enter Third Number");
      int num3 = Convert.ToInt32(Console.ReadLine());
```

```
    Console.WriteLine($"Minimum Number is : {Math.Min(Math.Min(num1, num2), num3)}");
  }
  static void SquareRoot()
  {
    Console.WriteLine("Enter number to find the square Root");
    int num = Convert.ToInt32(Console.ReadLine());
    if (num < 0)
    {
      Console.WriteLine("Please enter positive value");
    }
    else
    {
      Console.WriteLine($"Square Root of {num} is : {Math.Sqrt(num)}");
    }

  }
  static void AbsoluteDifference()
  {
    Console.WriteLine("Enter First Number");
    double num1 = Convert.ToDouble(Console.ReadLine());
    Console.WriteLine("Enter Second Number");
```

```
    double num2 = Convert.ToDouble(Console.ReadLine());
    Console.WriteLine($"Absolute difference of numbers is : {Math.Abs(num1 - num2)}");


  }
  static void Calculator()
  {
    Console.WriteLine("Enter first Number");
    double num1= Convert.ToDouble(Console.ReadLine());
    Console.WriteLine("Enter Second Number");
    double num2= Convert.ToDouble(Console.ReadLine());
    Console.WriteLine("Enter operator");
    char op=Convert.ToChar(Console.ReadLine());
    if (op == '+')
    {
      Console.WriteLine($"{num1}{op}{num2} = {num1 + num2}");
    }
    else if (op == '-')
    {
      Console.WriteLine($"{num1}{op}{num2} = {num1 - num2}");
    }
    else if (op == '/')
```

```
    {
        Console.WriteLine($"{num1}{op}{num2} = {num1 / num2}");
    }
    else if (op == '*')
    {
        Console.WriteLine($"{num1}{op}{num2} = {num1 * num2}");
    }
}
static void purchase()
{
    Console.WriteLine("Enter total number of items");
    int num = Convert.ToInt32(Console.ReadLine());
    double[] price= new double[num];
    double[] taxRate= new double[num];
    for(int i = 0; i < num; i++)
    {
        Console.WriteLine($"Enter price of item {i + 1}");
        double it=Convert.ToDouble(Console.ReadLine());
        price[i]=it;
        Console.WriteLine($"Enter tax rate of item {i + 1}");
        double tax = Convert.ToDouble(Console.ReadLine());
        taxRate[i]=tax;
```

```
        }
        double ans=0;
        for(int i = 0; i < num; i++)
        {
            ans += price[i] + (price[i] * taxRate[i]) / 100;
        }
        Console.WriteLine($"Total cost of purchased itmes is : {Math.Round(ans,
2)}");
    }
public  static void Main(string[] args)
    {
        MaximumNumber();
        MinimumNumber();
        SquareRoot();
        AbsoluteDifference();
        Calculator();
        purchase();
```

```
    }
```

Task -2

```
using System;
using System.IO.Pipes;


public
class op
{
    static void leapYear()
    {
        Console.WriteLine("Enter year to check leap year");
        int n=Convert.ToInt32(Console.ReadLine());
        if (n % 400 == 0 || n % 100 != 0 && n % 4 == 0)
        {
            Console.WriteLine($"Year {n} is a leap year");
        }
        else
        {
            Console.WriteLine($"Year {n} is not a leap year");
        }
    }
    static void checkType()
```

```
{
    Console.WriteLine("Enter Number");
    int n = Convert.ToInt32(Console.ReadLine());
    if (n == 0)
    {
        Console.WriteLine("Number is Zero");
    }
    else if (n > 0)
    {
        Console.WriteLine("Number is positive");
    }
    else
    {
        Console.WriteLine("Number is negative");
    }
}
static void purchase()
{
    Console.WriteLine("Enter total number of items");
    int num = Convert.ToInt32(Console.ReadLine());
    double[] price = new double[num];
    double[] taxRate = new double[num];
```

```
        for (int i = 0; i < num; i++)
        {
            Console.WriteLine($"Enter price of item {i + 1}");
            double it = Convert.ToDouble(Console.ReadLine());
            price[i] = it;
            Console.WriteLine($"Enter tax rate of item {i + 1}");
            double tax = Convert.ToDouble(Console.ReadLine());
            taxRate[i] = tax;
        }
        double ans = 0;
        for (int i = 0; i < num; i++)
        {
            ans += price[i] + (price[i] * taxRate[i]) / 100;
        }
        ans = ans > 50 * 80 ? ans - (ans * 10) / 100 : ans;
        Console.WriteLine($"Total cost of purchased itmes is : {Math.Round(ans,
2)}");
    }
    static void checkVowelOrConstant()
    {
        Console.WriteLine("Enter character");
        char var = Convert.ToChar(Console.ReadLine());
```

```
    if (var == 'a' || var == 'A' || var == 'e' || var == 'E' || var == 'i' || var == 'I'
        || var == 'o' || var == 'O' || var == 'u' || var == 'U')
    {
        Console.WriteLine($"Character {var} is a vowel");
    }
    else
    {
        Console.WriteLine($"Character {var} is a consonant");
    }
}
static void checkBMI()
{
    Console.WriteLine("Enter User's weight in kg");
    double weight = Convert.ToDouble(Console.ReadLine());
    Console.WriteLine("Enter User's height in meters");
    Double height=Convert.ToDouble(Console.ReadLine());
    double ans=weight/(height*height);
    if (ans <= 18.5)
    {
        Console.WriteLine("User is underweight");
    }
    else if(ans>18.5 && ans <= 24.9)
```

```
        {
            Console.WriteLine("User has Normal Weight");
        }
        else if(ans>=25 && ans <= 29.9)
        {
            Console.WriteLine("User is OverWeight");
        }
        else
        {
            Console.WriteLine("User is in the category of obesity");
        }
    }
    public static void Main(string[] args)
    {

        leapYear();
        checkType();
        purchase();
        checkVowelOrConstant();
        checkBMI();
    }
}
```

Task -3

```
using System;
using System.ComponentModel;

public
class SwitchCase
{
   static void printMonth()
   {
      Console.WriteLine("Please Enter Month value(1-12)");
      int n=Convert.ToInt32(Console.ReadLine());
      switch (n)
      {
         case 1:
            Console.WriteLine($"Month value : {n} , Month Name : January");
            break;
         case 2:
            Console.WriteLine($"Month value : {n} , Month Name : February");
            break;
         case 3:
            Console.WriteLine($"Month value : {n} , Month Name : March");
```

```
    break;
case 4:
    Console.WriteLine($"Month value : {n} , Month Name : April");
    break;
case 5:
    Console.WriteLine($"Month value : {n} , Month Name : May");
    break;
case 6:
    Console.WriteLine($"Month value : {n} , Month Name : June");
    break;
case 7:
    Console.WriteLine($"Month value : {n} , Month Name : July");
    break;
case 8:
    Console.WriteLine($"Month value : {n} , Month Name : August");
    break;
case 9:
    Console.WriteLine($"Month value : {n} , Month Name : September");
    break;
case 10:
    Console.WriteLine($"Month value : {n} , Month Name : October");
    break;
```

```
        case 11:
            Console.WriteLine($"Month value : {n} , Month Name : November");
            break;
        case 12:
            Console.WriteLine($"Month value : {n} , Month Name : December");
            break;
        default:
            Console.WriteLine("Please Enter Month Value between (1-12)");
            break;
    }
}
static void VendingMachine()
{
    Console.WriteLine("Please Enter item code");
    int n = Convert.ToInt32(Console.ReadLine());
    switch (n)
    {
        case 1:
            Console.WriteLine($"Item Code : {n} , Item Name : Soda");
            break;
        case 2:
            Console.WriteLine($"Item Code : {n} , Item Name : Chips");
```

```
            break;
        default:
            Console.WriteLine("You Entered Wrong item code ! Please Select Valid Item Code");
            break;
    }
  }

  static void printDays()
  {
    static bool leapYear(int n)
    {
      if (n % 400 == 0 || n % 100 != 0 && n % 4 == 0)
      {
        return true;
      }
      else
      {
        return false;
      }
    }
    Console.WriteLine("Please Enter Month value(1-12)");
```

```
        int n = Convert.ToInt32(Console.ReadLine());
        Console.WriteLine("Please Enter Year");
        int m = Convert.ToInt32(Console.ReadLine());
        switch (n)
        {
            case 1:
                Console.WriteLine($"Month value : {n} , Month Name : January , Days
:31");
                break;
            case 2:
                if (leapYear(m))
                {
                    Console.WriteLine($"Month value : {n} , Month Name : February , Days
:29");
                }
                else
                {
                    Console.WriteLine($"Month value : {n} , Month Name : February , Days
:28");
                }
                break;
            case 3:
```

```
            Console.WriteLine($"Month value : {n} , Month Name : March , Days :
31");
            break;
        case 4:
            Console.WriteLine($"Month value : {n} , Month Name : April , Days :
30");
            break;
        case 5:
            Console.WriteLine($"Month value : {n} , Month Name : May , Days : 31");
            break;
        case 6:
            Console.WriteLine($"Month value : {n} , Month Name : June , Days : 30");
            break;
        case 7:
            Console.WriteLine($"Month value : {n} , Month Name : July , Days : 31");
            break;
        case 8:
            Console.WriteLine($"Month value : {n} , Month Name : August , Days :
31");
            break;
        case 9:
            Console.WriteLine($"Month value : {n} , Month Name : September , Days
: 30");
```

```
            break;
        case 10:
            Console.WriteLine($"Month value : {n} , Month Name : October , Days :
31");
            break;
        case 11:
            Console.WriteLine($"Month value : {n} , Month Name : November , Days
: 30");
            break;
        case 12:
            Console.WriteLine($"Month value : {n} , Month Name : December , Days
: 31");
            break;
        default:
            Console.WriteLine("Please Enter Month Value between (1-12)");
            break;
    }

}
static void gradeSystem()
{
    Console.WriteLine("Enter numberic grade(0-100)");
    int grade=Convert.ToInt32(Console.ReadLine());
```

```
    switch (grade / 10)
    {
        case 10:
        case 9:
            Console.WriteLine("Grade A");
            break;
        case 8:
            Console.WriteLine("Grade B");
            break;
        case 7:
            Console.WriteLine("Grade C");
            break;
        case 6:
            Console.WriteLine("Grade D");
            break;
        default:
            Console.WriteLine("Fail");
            break;

    }
}
public static void Main(string[] args)
```

```
    {


        printMonth();
        VendingMachine();
        printDays();
        gradeSystem();
    }
}
```