Practical-2

1. **Write a program to get integer, double, character and string values from user and display it on the screen.**

Code:

```
using System;

namespace practical_2_1
{
   class Program
   {
      private static void Main(string[] args)
      {          int
a;          double
b;          char c;
string d;

          Console.WriteLine("Enter the value of a: ");
a = Convert.ToInt32(Console.ReadLine());
Console.WriteLine("The value of a is = " + a);

          Console.WriteLine("Enter the value of b: ");
b = Convert.ToDouble(Console.ReadLine());
Console.WriteLine("The value of b is = " + b);

          Console.WriteLine("Enter the value of c: ");
c = Convert.ToChar(Console.ReadLine());
Console.WriteLine("The value of c is = " + c);

          Console.WriteLine("Enter the value of d: ");
d = Console.ReadLine();
          Console.WriteLine("The value of d is = " +
d);

          // To print all the values in a single line,

          Console.WriteLine("The value of all the mentioned above are as follows: \na:{0} \nb:{1} \nc:{2} \nd:{3}", a, b,
c, d);
      }
   } }
```

Output:

```
Enter the value of a:
77
The value of a is = 77
Enter the value of b:
8.6
The value of b is = 8.6
Enter the value of c:
A
The value of c is = A
Enter the value of d:
Anuj
The value of d is = Anuj
The value of all the mentioned above are as follows:
a:77
b:8.6
c:A
d:Anuj
Press any key to continue . . .
```

2. Write a program to check whether the entered value is numeric or not. [Note: use try and catch.

CODE:

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

namespace practical_2_2
{
   class Program
   {
      static void Main(string[] args)
      {
try          {
int a;
            Console.WriteLine("Enter a number: ");
a = Convert.ToInt32(Console.ReadLine());
            Console.WriteLine(a);
         }
         catch (Exception e)
         {
            Console.WriteLine("You cannot enter anything but an integer!");
         }
      }
   }
}
```

Output:

```
Enter a number:
77.7
You cannot enter anything but an integer!
Press any key to continue . . .
```

3. Write a program to accept a number from the user and throw an exception if the number is not an even number.

Code:

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

namespace practical_2_3
{
   class Program
   {

      public static void Main(String[] args)
      {
         Console.WriteLine("Enter an even number: ");
         int n = Convert.ToInt32(Console.ReadLine());
try
         {
            Validate(n);
         }
         catch (Exception e)
         {
            Console.WriteLine(e);
         }
      }
      public static void Validate(int even)
      {
         if(even % 2 == 0)
         {
            Console.WriteLine("The number is an even number.");
         }
else
         {
            throw new Exception("The number is not even.");
         }
      }
   }
}
```

Output:

```
Enter an even number:
7
System.Exception: The number is not even.
  at Prac2.Prac2_3.Validate (System.Int32 even) [0x00017] in <d3b1127982f04d49bf4f1047ceb59d8c>:0
  at Prac2.Prac2_3.Main (System.String[] args) [0x00015] in <d3b1127982f04d49bf4f1047ceb59d8c>:0
```

4. Write a program to find whether the given year is leap year or not. (Leap year is evenly divisible by 4, but if it is evenly divisible by 100 then it is not a leap year, but if it is evenly divisible by 400, then it is a leap year) Code:

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

namespace practical_2_4
{
   class Program
   {
      static void Main(string[] args)
      {
         Console.WriteLine("Enter year: ");
         int y = int.Parse(Console.ReadLine());

         bool leap = false;

         if(y % 4==0)
         {
            if (y % 100==0)
            {
               if (y % 400==0)
               {
                  leap = true;
               }
else                  {
                  leap = false;
               }
}
else
{
               leap = true;
            }           }
else          {
leap = false;
         }

         if(leap==true)
         {
            Console.WriteLine("This is a leap year.");

         }
else
         {
            Console.WriteLine("This is not a leap year.");

         }
         Console.ReadLine();
      }
   }
```

}

Output:

5. Write a program to check whether the given number is perfect or not. A number is perfect if its sum of all digits is same as multiplication of all digits.

Code:

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

namespace practical_2_5
{
   class Program
   {
      static void Main()
      {
         int n, temp, num, sum = 0, mul = 1;
Console.Write("Enter: ");
         num = Convert.ToInt32(Console.ReadLine());
temp = num;
         while (num > 0)
         {
            n = num % 10;
sum = sum + n;
mul = mul * n;
            num = num / 10;
         }
         if(sum == mul)
         {
            Console.Write(temp + " is a Perfect Number.");
         }
else           {
            Console.Write(temp + " is not a Perfect Number.");
         }
      }
   }
}
```

Output:

6. Write a program to check whether the given number is lucky or not. (A number is lucky if the number is itself a prime and the sum of digit of a number is also prime) Code:

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

namespace practical_2_6
{
   class Program
   {
      static void Main(string[] args)
      {
         Console.WriteLine("Enter a number: ");
int n = Convert.ToInt32(Console.ReadLine());

         if (n <= 1)
         {
            Console.WriteLine("Number is not a lucky.");
return;
         }           int
flag = 0;
         for (int i = 2; i <= Math.Sqrt(n); i++)
         {
            if (n % i == 0)
            {
               flag++;
            }
}
         if (flag == 0)
         {
            int num = n;
            int sum = 0;

            while (num != 0)
            {
               int temp = num % 10;
sum += temp;
               num = num / 10;
            }

            for (int i = 2; i < Math.Sqrt(sum); i++)
            {
               if (sum % i==0)
               {
                  flag++;
               }
            }

            if (flag == 0)
            {
               Console.WriteLine("Number is Lucky");
            }
else
            {
               Console.WriteLine("Number is not a lucky.");
```

```
            }
}
else
{
            Console.WriteLine("Number is not a lucky.");
        }
        Console.ReadLine();
    }

  } }
```

Output:

7. Write a program to generate Floyds Triangle.

Code:

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

namespace practical_2_7
{
   class Program
   {
      static void FloyedTriangle(int n)
      {
int x = 1;
         for (int i = 1; i<=n; i++)
         {              for (int j=1;
j<= i; j++)
            {
               Console.Write(x + " ");
               x++;
            }
            Console.WriteLine();
         }
      }
      static void Main(string[] args)
      {
         Console.WriteLine("Enter line you want to print: ");
int lines = Convert.ToInt32(Console.ReadLine());
         FloyedTriangle(lines);
         Console.ReadLine();

      }
   }
}
```

Output:

```
Enter line you want to print:
10
1
2 3
4 5 6
7 8 9 10
11 12 13 14 15
16 17 18 19 20 21
22 23 24 25 26 27 28
29 30 31 32 33 34 35 36
37 38 39 40 41 42 43 44 45
46 47 48 49 50 51 52 53 54 55
```

8. Write a program to replace a substring of given length with new substring.

Code:

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

namespace practical_2_8
{
   class Program
   {
      static void Main(string[] args)
      {
string s, ss;
int i, l;
         Console.Write("Enter the string: ");
s = Console.ReadLine();
         Console.Write("Enter the substring: ");
ss = Console.ReadLine();
         Console.Write("Enter first index: ");
i = int.Parse(Console.ReadLine());
         Console.Write("Enter the length  of substring you want to remove: ");
l = int.Parse(Console.ReadLine());
         s = s.Remove(i, l);
s = s.Insert(i, ss);
Console.Write(s);
      }
   }
}
```

Output:

```
Enter the string: Anuj
Enter the substring: Patel
Enter first index: 1
Enter the length  of substring you want to remove: 1
APatelujPress any key to continue . . .
```