Ex. No. 07	APPLICATION DEVELOPMENT USING EXCEPTION HANDLING
07.10.2023	

Aim

To develop C# console application using Exception Handling statements.

Description

Exception Handling:

Catching and recording the errors or bugs such that those can be fixed later mostly they can be logged in databases.

Blocks/Statements of Exception:

- try: Statements that causes exceptions will be included here
- catch: Statements that has to be performed when an exception is raised
- finally: Statements will be executed whether any exception is raised or not.
- throw: To manually throw an exception

Syntax:

```
class UserDefinedException:Exception{

        public UserDefinedException(string msg):base(msg){}

}

class program{

try{ //try block of statements}

catch (Exception ex){/catch block of statements}

finally{//finally block of statements}

}
```

Source Code

A 1.

```
using System;

using System.Threading.Tasks;

namespace Ex7{

    internal class SetA1{

        static void Main(string[] args){

            try{

                Console.Write("Enter Numerator: ");

                int num=Convert.ToInt32(Console.ReadLine());

                Console.Write("Enter Denominator: ");

                int den = Convert.ToInt32(Console.ReadLine());

                Console.WriteLine("Result: " + num / den);}

            catch (FormatException){

                Console.WriteLine("System.ArgumentException");}

            catch (DivideByZeroException){

                Console.WriteLine("System.DivideByZeroException: / by zero");}

            Console.ReadKey();}}}
```

A 2.

```
using System;

using System.Threading.Tasks;

namespace Ex7{

    class MyCalculator{
```

```
    public long power(int n, int p){
        if (n < 0 || p < 0) throw new Exception("System.Exception: n or p should not be
negative");
        if (n == 0 && p==0) throw new Exception("System.Exception: n and p should not be
zero");
        return (long) Math.Pow(n, p);}}
  internal class SetA2{
    static void Main(string[] args){
        Console.Write("Enter n value: ");
        int n=Convert.ToInt32(Console.ReadLine());
        Console.Write("Enter p value: ");
        int p = Convert.ToInt32(Console.ReadLine());
        MyCalculator mycal=new MyCalculator();
        try{
            long result=mycal.power(n, p);
            Console.WriteLine("Result: " + result);}
        catch (Exception ex){
            Console.WriteLine(ex.Message);}
        Console.ReadKey();}}}
```

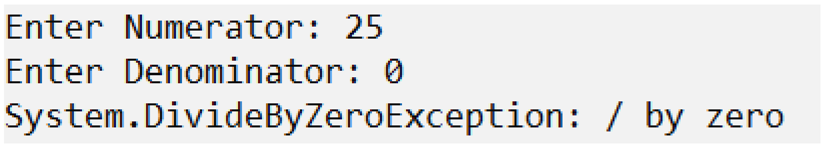
B.

```
using System;
using System.Threading.Tasks;
namespace Ex7{
```

```
class InvalidEmpidException : Exception{
   public InvalidEmpidException(string msg) : base(msg) { }}
class InvalidNameException : Exception{
   public InvalidNameException(string msg) : base(msg) { }}
class InvalidAgeException:Exception{
   public InvalidAgeException(string msg) : base(msg) { }}
class Employee{
   string empid,name;
   int age;
   public Employee(string empid, string name, int age){
      if (empid.Length < 4) throw new InvalidEmpidException("Length of the Empid should be greater than 4");
      if (int.TryParse(name, out int result)) throw new InvalidNameException("Name Should not be a number");
      if (age > 50) throw new InvalidAgeException("Age should not be less than or equal to 50");
      this.empid = empid;
      this.name = name;
      this.age = age;}}
internal class SetB{
   static void Main(string[] args){
      Console.Write("Enter Employee Id: ");
      string eid=Console.ReadLine();
      Console.Write("Enter Employee Name: ");
      string ename = Console.ReadLine();
      Console.Write("Enter Employee Age: ");
      int age = Convert.ToInt32(Console.ReadLine());
      try{
         Employee emp1 = new Employee(eid, ename, age);
         Console.WriteLine("Employee Object Created Successfully");}
      catch (Exception ex){
         Console.WriteLine(ex.Message);}
      Console.ReadKey();}}}
```

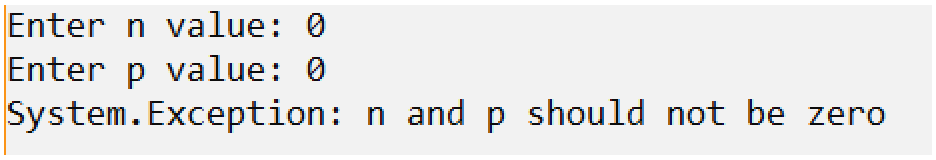
Output

A 1.



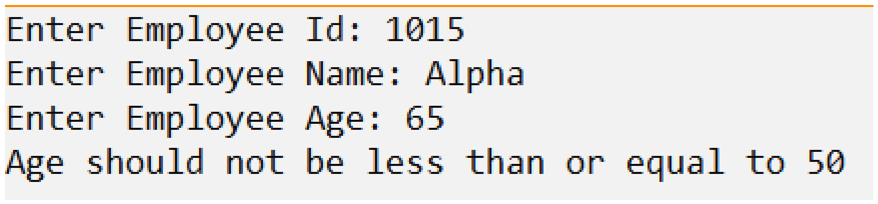
```
Enter Numerator: 25
Enter Denominator: 0
System.DivideByZeroException: / by zero
```

A 2.



```
Enter n value: 0
Enter p value: 0
System.Exception: n and p should not be zero
```

B.



```
Enter Employee Id: 1015
Enter Employee Name: Alpha
Enter Employee Age: 65
Age should not be less than or equal to 50
```

Result

The C# console application using Exception Handling statements has been executed successfully and the desired output is displayed on the screen.