Day 12 Assignments

Ву

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NB Health Care

1. What is Exception Handling and why we need exception handling

A process to handle Runtime errors is called Exception Handling.

Need of Exception Handling:

To keep the flow of application maintained even after runtime errors To deal with the exceptional cases

2. Write a simple division program and handle three exceptions discussed in the class and also add super exception at the last.

Code:

```
using System;
using System.Collections.Generic;
using System.Ling;
using System.Text;
using System. Threading. Tasks;
namespace Day_12_Project_1
{
  internal class Program
     static void Main(string[] args)
       try
          int a:
          int b:
          int c;
          Console.WriteLine("Enter any Number: ");
          a = Convert.ToInt32(Console.ReadLine());
          Console.WriteLine("Enter any Number: ");
          b = Convert.ToInt32(Console.ReadLine());
          c = a / b;
          Console.WriteLine($"Result = {c}");
          Console.ReadLine();
       }
       // Exceptions
       catch (FormatException)
```

```
Console.WriteLine("Wrong input. Only enter Numbers");
         Console.ReadLine();
       catch (OverflowException)
         Console.WriteLine("Only numbers between -2147483647 and 2147483647 are
allowed"):
         Console.ReadLine();
       catch(DivideByZeroException)
         Console.WriteLine("Number cannot be divide by zero. Undefined");
         Console.ReadLine();
      }
       // Super Exception
       catch (Exception)
         Console.WriteLine("Some Error Occured. Please contact abc@gmail.com");
         Console.ReadLine();
    }
  }
```

Output:

```
C:\Day 12 Assignments\Day 12 F

Enter any Number:
9
Enter any Number:
3
Result = 3

C:\Day 12 Assignments\Day 12 Project

Enter any Number:
a
Wrong input. Only enter Numbers
```

C:\Day 12 Assignments\Day 12 Project 1\Day 12 Project 1\bin\Debug\

```
Enter any Number:
2147483648
Only numbers between –2147483647 and 2147483647 are allowed
```

```
C:\Day 12 Assignments\Day 12 Project 1\Day 12 F

Enter any Number:
3
Enter any Number:
6
Number cannot be divide by zero. Undefined

C:\Day 12 Assignments\Day 12 Project 1\Day 12 Project
Enter any Number:
9
Some Error Occured. Please contact abc@gmail.com
```

4. What is the use of "finally block" illustrate with an example

Finally block is used to execute statements irrespective of exception

```
Code:
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System. Threading. Tasks;
namespace Day_12_Project_3
  // Author : Praveen Chakravarthi
  // Purpose : Finally block Example
  internal class Program
     static void Main(string[] args)
       try
         int a:
         int b:
         int c;
         Console.WriteLine("Enter any Number: ");
         a = Convert.ToInt32(Console.ReadLine());
         Console.WriteLine("Enter any Number: ");
         b = Convert.ToInt32(Console.ReadLine());
         c = a / b;
         Console.WriteLine($"Result = {c}");
       }
       // Exceptions
       catch (FormatException)
```

```
Console.WriteLine("Wrong input. Only enter Numbers");
       }
       catch (OverflowException)
         Console.WriteLine("Only numbers between -2147483647 and 2147483647 are
allowed");
       catch (DivideByZeroException)
         Console.WriteLine("Number cannot be divide by zero. Undefined");
       // Super Exception
       catch (Exception)
       {
         Console.WriteLine("Some Error Occured. Please contact abc@gmail.com");
       // Finally Block
       finally
         Console.WriteLine("\n\n\nDesigned by Praveen Chakravarthi");
         Console.ReadLine();
  }
}
```

Output:

```
Enter any Number:
4
Enter any Number:
2
Result = 2

Designed by Praveen Chakravarthi

C:\Day 12 Assignments\Day 12 Project 3\Day 12 Project 3\
```

5. Write the 5 points I explained about exception handling

- 1. Exception Handling is done to ensure that our application will not crash or will not display any technical details.
- 2. To make sure we handle errors gracefully and display friendly messages.

3. A single try box can have multiple catch box
4. Always super exception should be written at last
5. Statements inside finally box will be displayed irrespective of exception

Syntax:
try
{
}
catch(exception)
{
}
finally

6. What is compilation and Runtime error Write atleast 3 differences between them

Compilation Error	Runtime Error
The Error which occurs in the syntax of a program which is detected by the compiler at the time of compilation is called Compilation Error	The Error which occurs while the program is running and not detected by the compiler which leads to unpredictable results is called Runtime Error
2. It occurs due to violation of Grammar rules	2. It occurs due to performing of illegal operation
These Errors can be fixed during the code development	3. These Errors are difficult to fix during code development until it shows up in the Runtime environment

7. Write any 6 compilation errors with small code snippet. Add compilation error screen shots.

Code:

using System.Collections.Generic;

using System.Ling;

using System.Text;

Code: using System; using System.Collections.Generic; using System.Linq; using System.Text; using System.Threading.Tasks; namespace Day_12_Project_4 internal class Program static void Main(string[] args) int a = 3; int b = 4; int sum; sum = a + bConsole.WriteLine(sum); Console.ReadLine(); }

```
Code:
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
namespace Day_12_Project_4
{
  internal class Program
    static void Main(string[] args)
       int a = 3:
       int b = 4;
       int sum;
       sum = a + b;
       Console.WriteLine(sum);
       Console.ReadLine();
  }
```

Compilation 3:

```
⊟using System.Collections.Generic;
             using System.Linq;
using System.Text;
             using System.Threading.Tasks;
           □namespace Day_12_Project_4
                  internal class Program
     10
                      static void Main(string[] args)
     11
     12
13
14
                           int a = 3;
int b = 4;
                           int sum;
     16
17
                           sum = a + b;
                           Console.WriteLine(sum);
                           Console.ReadLine();
     19
     20
     21
             3 ⊗ 2 ▲ 0 ↑ ↓ | 💞 ▼
100 %
                     Entire Solution
     Tode Description

⊗ CS0103 The name 'Console' does not exist in the current context

                                                  Day 12 Project 4
    CS0103 The name 'Console' does not exist in the current context
                                                 Day 12 Project 4
```

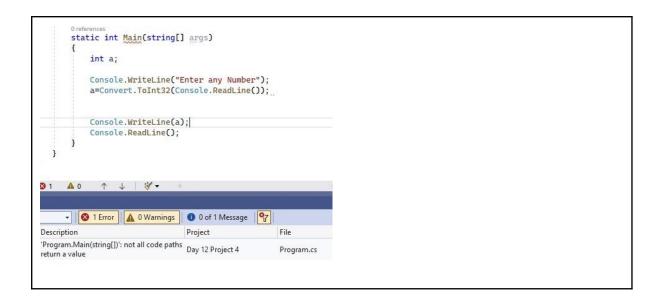
```
Code:
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System. Threading. Tasks;
namespace Day_12_Project_4
  internal class Program
    static void Main(string[] args)
       int a;
       char b;
       Console.WriteLine("Enter any Number");
       a=Console.ReadLine();
       Console.WriteLine("Enter any Name");
       b = Console.ReadLine();
       Console.WriteLine(a);
       Console.WriteLine(b);
       Console.ReadLine();
    }
  }
}
Compilation Error 4:
```

```
CHAL DI
          Console.WriteLine("Enter any Number");
          a=Console.ReadLine();
          Console.WriteLine("Enter any Name");
          b = Console.ReadLine();
          Console.WriteLine(a);
          Console.WriteLine(b);
          Console.ReadLine();
      }
⊗2 A0 ↑ ↓ | * ✓
     Description
                              Project
Cannot implicitly convert type 'string' to
                              Day 12 Project 4
Cannot implicitly convert type 'string' to
                              Day 12 Project 4
'char'
```

```
Code:
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System. Threading. Tasks;
namespace Day_12_Project_4
{
  internal class Program
    static void Main(string[] args)
       int a;
       Console.WriteLine("Enter any Number");
       a=Convert.ToInt32(Console.ReadLine());
       console.WriteLine(a);
       Console.ReadLine();
    }
  }
```

Compilation Error 5:

```
Code:
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System. Threading. Tasks;
namespace Day_12_Project_4
{
  internal class Program
    static int Main(string[] args)
       int a;
       Console.WriteLine("Enter any Number");
       a=Convert.ToInt32(Console.ReadLine());
       Console.WriteLine(a);
       Console.ReadLine();
    }
Compilation Error 6:
```



8. Write any 6 runtime errors with small code snippets and add run time error screen shots.

Code:

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

namespace Day_12_Project_4
{
   internal class Program
   {
     static void Main(string[] args)
     {
        string value = null;
        if (value.Length == 0)
        {
             Console.WriteLine(value);
        }
        Console.ReadLine();
        }
   }
}
```

Runtime Error 1:

```
Code:
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System. Threading. Tasks;
namespace Day_12_Project_4
{
   internal class Program
       static void Main(string[] args)
          string data = "Praveen";
          int a = Convert.ToInt32(data);
          Console.WriteLine(a);
          Console.ReadLine();
   }
}
Runtime Error 2:
stem.Ling;
                                     Exception Unhandled
stem.Text
stem.Threading.Tasks;
                                      System.FormatException: 'Input string was not in a correct format.'
e Day_12_Project_4
                                      This exception was originally thrown at this call stack: [External Code]
                                       Day_12_Project_4.Program.Main(string[]) in Program.cs
rnal class Program
                                      View Details | Copy Details | Start Live Share session...

■ Exception Settings

                                       Break when this exception type is thrown
static void Main(string[] args)
                                          Except when thrown from:
                                       Open Exception Settings | Edit Conditions
    string data = "Praveen";
    int a = Convert.ToInt32(data);
Console.WriteLine(a);
    Console.ReadLine();
```

```
Code:
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System. Threading. Tasks;
namespace Day_12_Project_4
{
   internal class Program
      static void Main(string[] args)
        int a = 3; int b = 0;
        int c = a / b;
         Console.WriteLine(c);
         Console.ReadLine();
  }
}
Runtime Error 3:
 static void Main(string[] args)
     int a = 3; int b = 0;
int c = a / b; ⊗
      Console.WriteLi Exception Unhandled
                                                                     P×
      Console.ReadLin
                      System.DivideByZeroException: 'Attempted to divide by zero.'
                      View Details | Copy Details | Start Live Share session...
                      Exception Settings
```

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

namespace Day_12_Project_4
{
   internal class Program
   {
     static void Main(string[] args)
     {
        int[] data = new int[3];
        data[2] = 20;
```

```
Console.WriteLine(data[4]);
          Console.ReadLine();
      }
   }
}
Runtime Error 4:
 static void Main(string[] args)
      int[] data = new int[3];
      data[2] = 20;
      Console.WriteLine(data[4]);
      Console.ReadLine();
                                                                                      Р×
                                     Exception Unhandled
                                     System.IndexOutOfRangeException: 'Index was outside the bounds
                                     View Details | Copy Details | Start Live Share session...
                                     Exception Settings
```

```
Code:
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System. Threading. Tasks;
namespace Day_12_Project_4
  internal class Program
    static void Main(string[] args)
       byte p;
       Console.WriteLine("Enter any Number");
       p = Convert.ToByte(Console.ReadLine());
       Console.WriteLine(p);
       Console.ReadLine();
    }
```

Runtime Error 5:

```
/stem;
                                                                                                                                Р×
                                                                Exception Unhandled
/stem.Collections.Generic;
/stem.Ling;
                                                                System.OverflowException: 'Value was either too large or too small
                                                                for an unsigned byte.
/stem.Threading.Tasks;
                                                                This exception was originally thrown at this call stack:
                                                                   [External Code]
ce Day_12_Project_4
                                                                  Day_12_Project_4.Program.Main(string[]) in <u>Program.cs</u>
                                                                View Details | Copy Details | Start Live Share session...
ernal class Program
                                                                ▲ Exception Settings
                                                                  Break when this exception type is thrown
                                                                     Except when thrown from:
 static void Main(string[] args)
      byte p;
Console.WriteLine("Enter any Number");
p = Convert.ToByte(Console.ReadLine());
Console.WriteLine(p);
                                                                  Open Exception Settings | Edit Conditions
      Console.ReadLine();
```

```
Code:
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System. Threading. Tasks;
namespace Day_12_Project_4
   internal class Program
      static void Main(string[] args)
         string[] a = { "Praveen" };
         object[] b = a;
         b[0] = 3;
         Console.ReadLine();
      }
  }
}
Runtime Error 6:
ystem.Linq;
                              Exception Unhandled
ystem.Text;
ystem. Threading. Tasks;
                              System.ArrayTypeMismatchException: 'Attempted to access an
                              element as a type incompatible with the array.'
ce Day_12_Project_4
                              This exception was originally thrown at this call stack:
                                Day_12_Project_4.Program.Main(string[]) in Program.cs
ernal class Program
                              View Details | Copy Details | Start Live Share session...

■ Exception Settings

                                Break when this exception type is thrown
 static void Main(string[
                                  Except when thrown from:
                                    Day 12 Project 4.exe
      string[] a = { "Prav
                                Open Exception Settings | Edit Conditions
      object[] b = a;
      b[0] = 3;
      Console.ReadLine();
```