Day 12 Assignments

By

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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

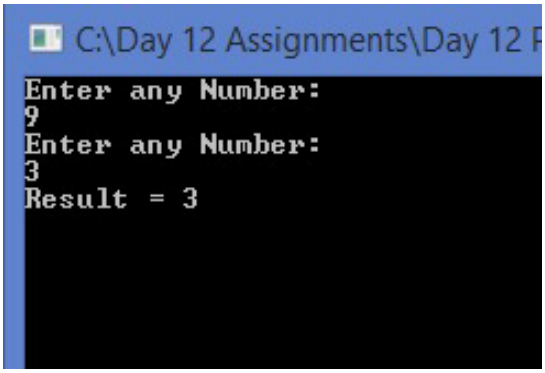
2. Write a simple division program and handle three exceptions discussed in the class and also add super exception at the last.

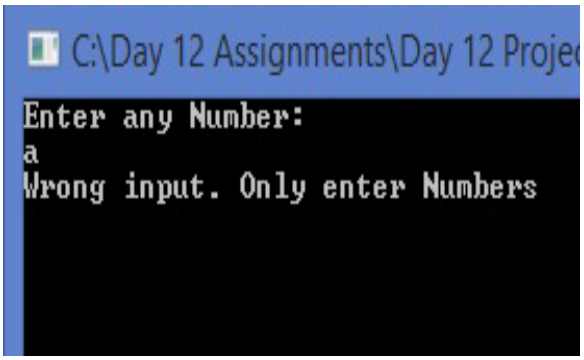
Code :

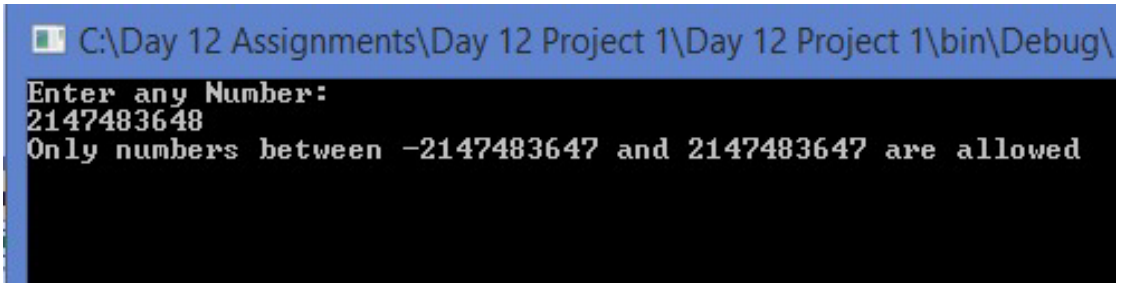
```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

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)
            {
```

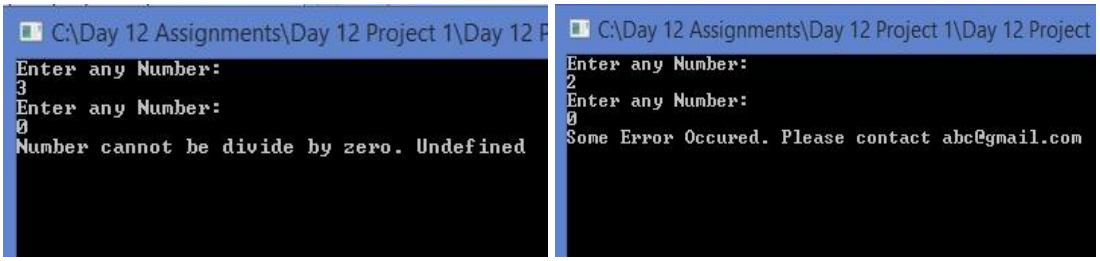
```
            Console.WriteLine("Wrong input. Only enter Numbers");
            Console.ReadLine();
        }
        catch (OverflowException)
        {
            Console.WriteLine("Only numbers between -2147483647 and 2147483647 are
allowed");
            Console.ReadLine();
        }
         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 :









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

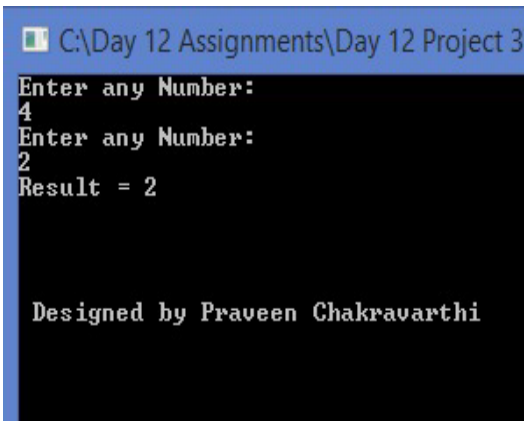
- Finally block is used to execute statements irrespective of exception

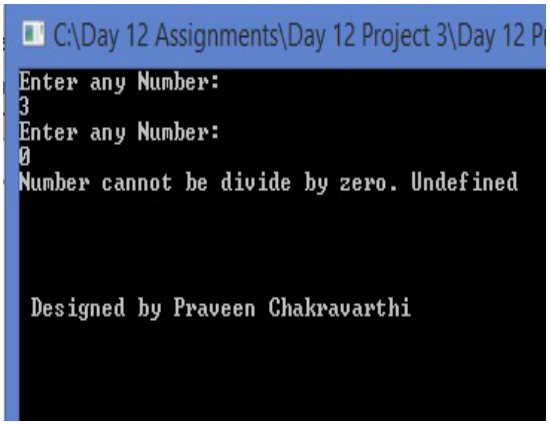
Code :

```
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\n\nDesigned by Praveen Chakravarthi");
            Console.ReadLine();
        }
    }
  }
}
```

Output:





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
1. 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	1. 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
3. 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

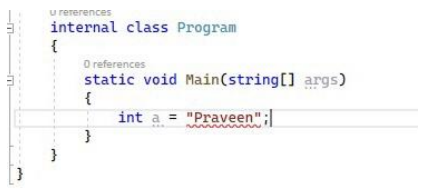
7. Write any 6 compilation errors with small code snippet.
Add compilation error screen shots.

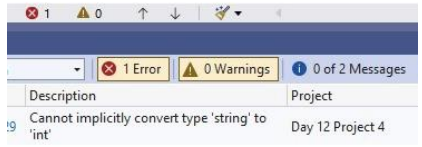
Code :

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

```
using System.Threading.Tasks;

namespace Day_12_Project_4
{
    internal class Program
    {
        static void Main(string[] args)
        {
            int a = "Praveen";
        }
    }
}
```

Compilation Error 1 :



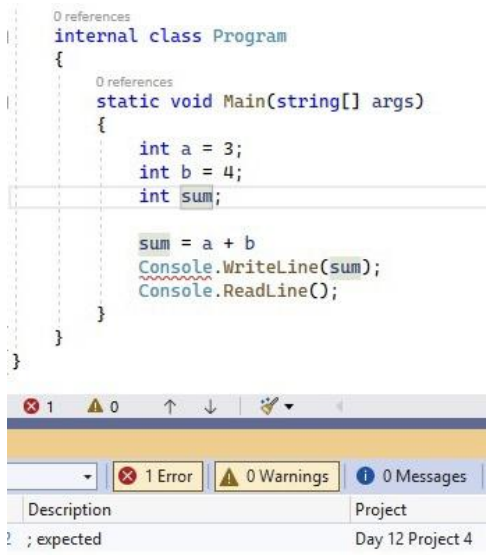


Code:

```
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)
        {
            int a = 3;
            int b = 4;
            int sum;

            sum = a + b
            Console.WriteLine(sum);
            Console.ReadLine();
        }
```

```
    }
}
```

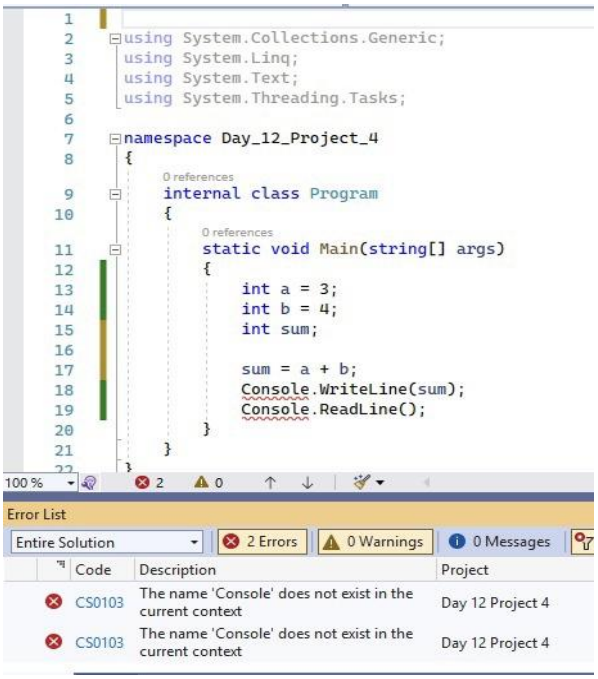
Compilation Error 2 :



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 :



Code :

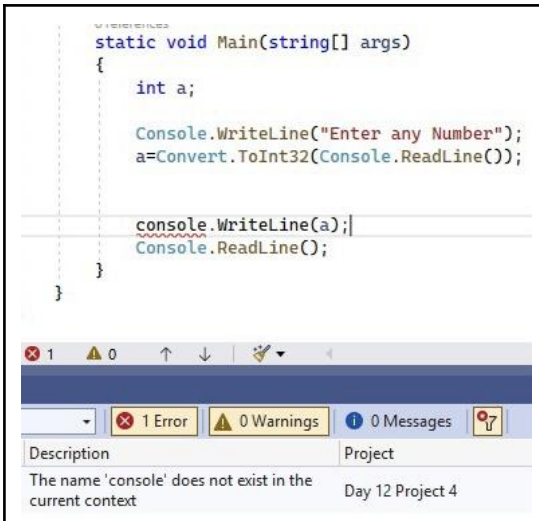
```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

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 :

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 :

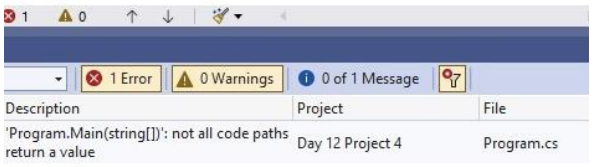


Code :

```
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 :

```
0 references
static int Main(string[] args)
{
    int a;

    Console.WriteLine("Enter any Number");
    a=Convert.ToInt32(Console.ReadLine());


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

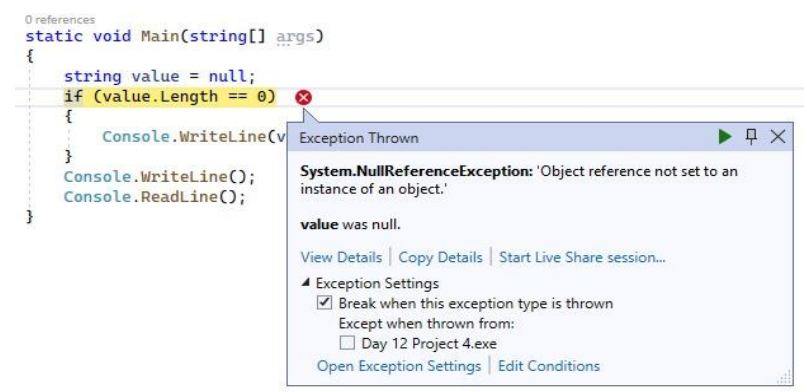


8. Write any 6 runtime errors with small code snippets and add run time error screen shots.

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

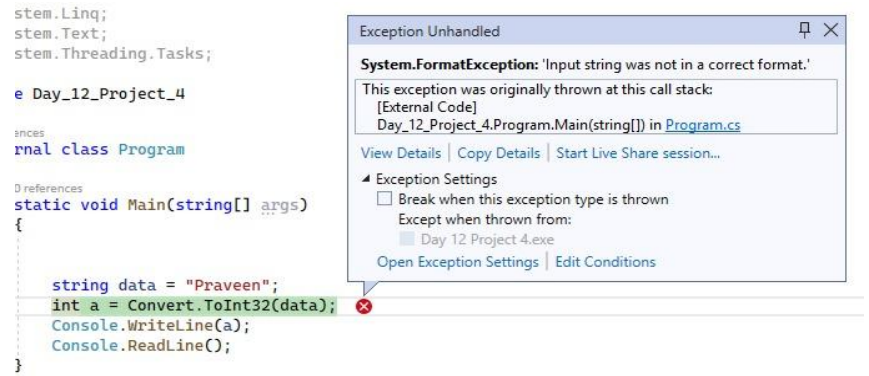
Runtime Error 1 :



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();
        }
    }
}
```

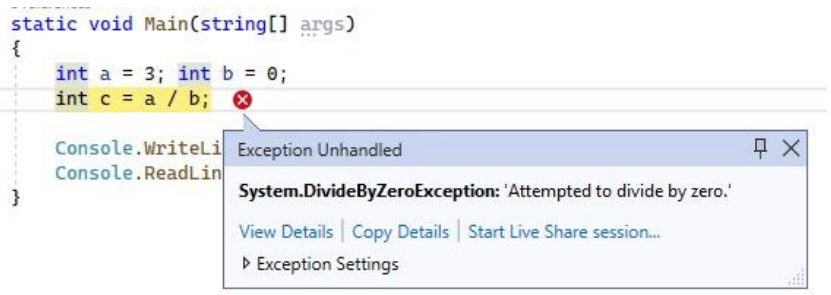
Runtime Error 2 :



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 :

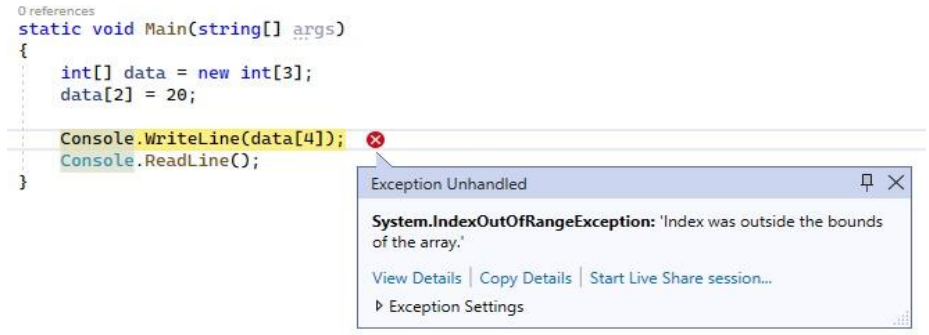


Code :

```
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[] data = new int[3];
            data[2] = 20;
```

```
        Console.WriteLine(data[4]);
        Console.ReadLine();
    }
  }
}
```

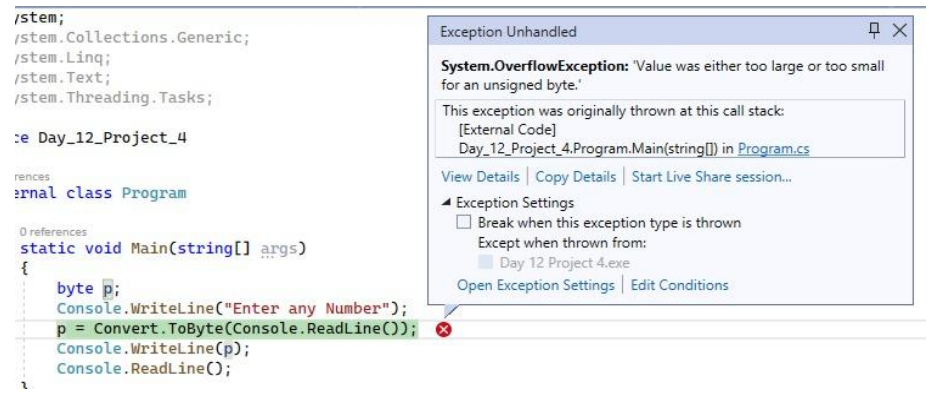
Runtime Error 4 :



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)
    {
      byte p;
      Console.WriteLine("Enter any Number");
      p = Convert.ToByte(Console.ReadLine());
      Console.WriteLine(p);
      Console.ReadLine();
    }
  }
}
```

Runtime 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 void Main(string[] args)
        {
            string[] a = { "Praveen" };
            object[] b = a;
            b[0] = 3;
            Console.ReadLine();
        }
    }
}
```

Runtime Error 6 :