Taazaa Training

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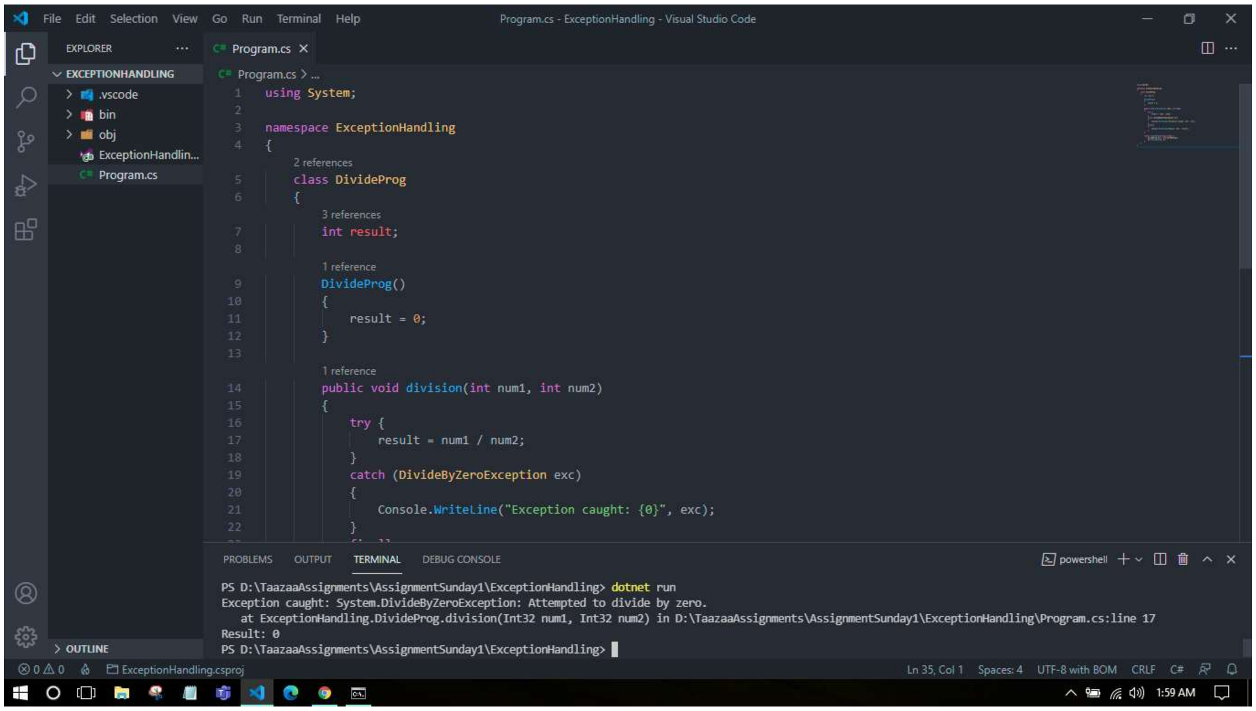
Assignment 9

1. Exception Handling

```
using System;

namespace ExceptionHandling
{
    class DivideProg
    {
        int result;

        DivideProg()
        {
            result = 0;
        }

        public void division(int num1, int num2)
        {
            try {
                result = num1 / num2;
            }
            catch (DivideByZeroException exc)
            {
                Console.WriteLine("Exception caught: {0}", exc);
            }
            finally
            {
                Console.WriteLine("Result: {0}", result);
            }
        }

        static void Main(string[] args) {
            DivideProg div = new DivideProg();
            div.division(12, 0);
        }
    }
}
```

```
PS D:\TaazaaAssignments\AssignmentSunday1\ExceptionHandling> dotnet run

Exception caught: System.DivideByZeroException: Attempted to divide by zero.

   at ExceptionHandling.DivideProg.division(Int32 num1, Int32 num2) in D:\TaazaaAssignments\AssignmentSunday1\ExceptionHandling\Program.cs:line 17

Result: 0
```



```
using System;

namespace ExceptionHandling
{
    class DivideProg
    {
        int result;

        DivideProg()
        {
            result = 0;
        }

        public void division(int num1, int num2)
        {
            try {
                result = num1 / num2;
            }
            catch (DivideByZeroException exc)
            {
                Console.WriteLine("Exception caught: {0}", exc);
            }
```

```
PS D:\TaazaaAssignments\AssignmentSunday1\ExceptionHandling> dotnet run
Exception caught: System.DivideByZeroException: Attempted to divide by zero.
   at ExceptionHandling.DivideProg.division(Int32 num1, Int32 num2) in D:\TaazaaAssignments\AssignmentSunday1\ExceptionHandling\Program.cs:line 17
Result: 0
PS D:\TaazaaAssignments\AssignmentSunday1\ExceptionHandling>
```

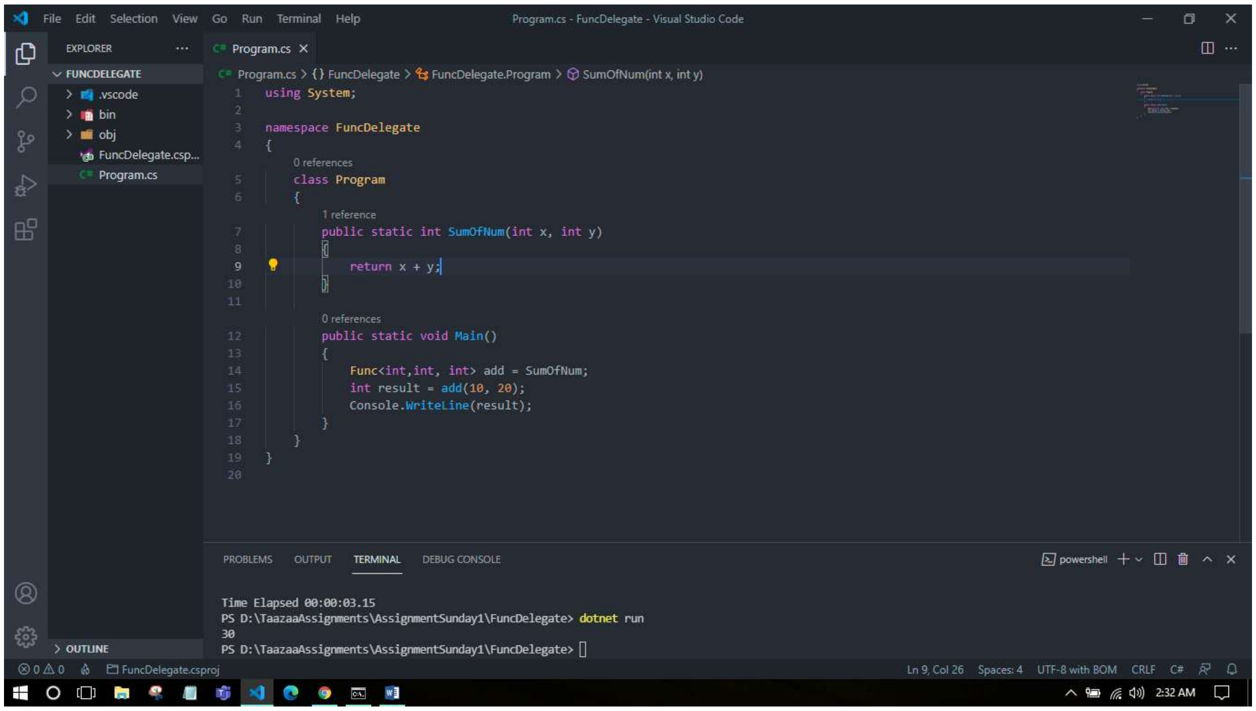
File Edit Selection View Go Run Terminal Help
Program.cs - ExceptionHandling - Visual Studio Code
EXPLORER
EXCEPTIONHANDLING
.vscode
bin
obj
ExceptionHandlin...
Program.cs
OUTLINE
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
powershell
Ln 35, Col 1 Spaces: 4 UTF-8 with BOM CRLF C#
ExceptionHandling.csproj
1:59 AM

2. Func <>
   Func is built-in delegate type and it must return a value.

```
using System;

namespace FuncDelegate
{
    class Program
    {
        public static int SumOfNum(int x, int y)
        {
            return x + y;
        }

        public static void Main()
        {
            Func<int,int, int> add = SumOfNum;
```

```
      int result = add(10, 20);
      Console.WriteLine(result);
    }
  }
}
```

```
PS D:\TaazaaAssignments\AssignmentSunday1\FuncDelegate> dotnet run
30
```



File Edit Selection View Go Run Terminal Help
Program.cs - FuncDelegate - Visual Studio Code
EXPLORER
FUNCDELEGATE
.vscode
bin
obj
FuncDelegate.csp...
Program.cs
OUTLINE
Program.cs > {} FuncDelegate > FuncDelegate.Program > SumOfNum(int x, int y)
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
powershell
Ln 9, Col 26 Spaces: 4 UTF-8 with BOM CRLF C#
2:32 AM

```
using System;

namespace FuncDelegate
{
    0 references
    class Program
    {
        1 reference
        public static int SumOfNum(int x, int y)
        {
            return x + y;
        }

        0 references
        public static void Main()
        {
            Func<int,int, int> add = SumOfNum;
            int result = add(10, 20);
            Console.WriteLine(result);
        }
    }
}
```

```
Time Elapsed 00:00:03.15
PS D:\TaazaaAssignments\AssignmentSunday1\FuncDelegate> dotnet run
30
PS D:\TaazaaAssignments\AssignmentSunday1\FuncDelegate>
```

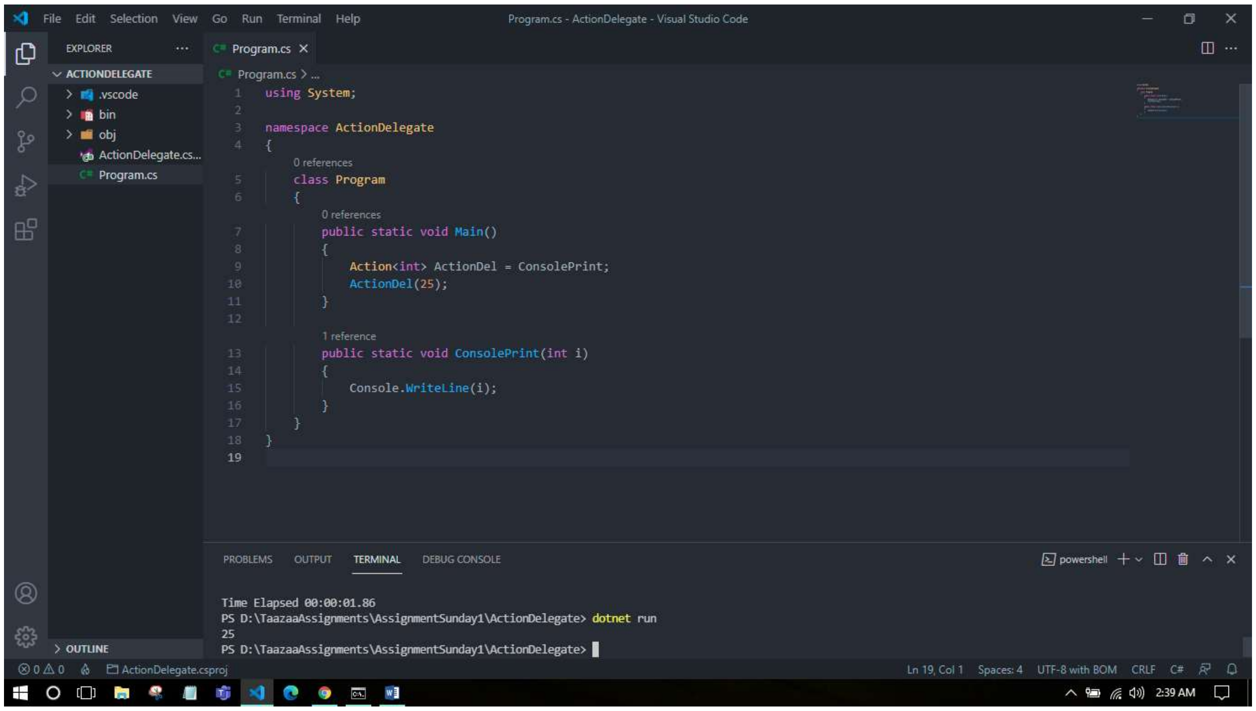
3. Action <>

Action delegate is same as func delegate except that it does not return anything. Return type must be void.

```
using System;

namespace ActionDelegate
{
  class Program
  {
    public static void Main()
    {
      Action<int> ActionDel = ConsolePrint;
      ActionDel(25);
    }
```

```
        public static void ConsolePrint(int i)
        {
            Console.WriteLine(i);
        }
    }
}
```

```
PS D:\TaazaaAssignments\AssignmentSunday1\ActionDelegate> dotnet run
25
```



```
using System;

namespace ActionDelegate
{
    0 references
    class Program
    {
        0 references
        public static void Main()
        {
            Action<int> ActionDel = ConsolePrint;
            ActionDel(25);
        }

        1 reference
        public static void ConsolePrint(int i)
        {
            Console.WriteLine(i);
        }
    }
}
```

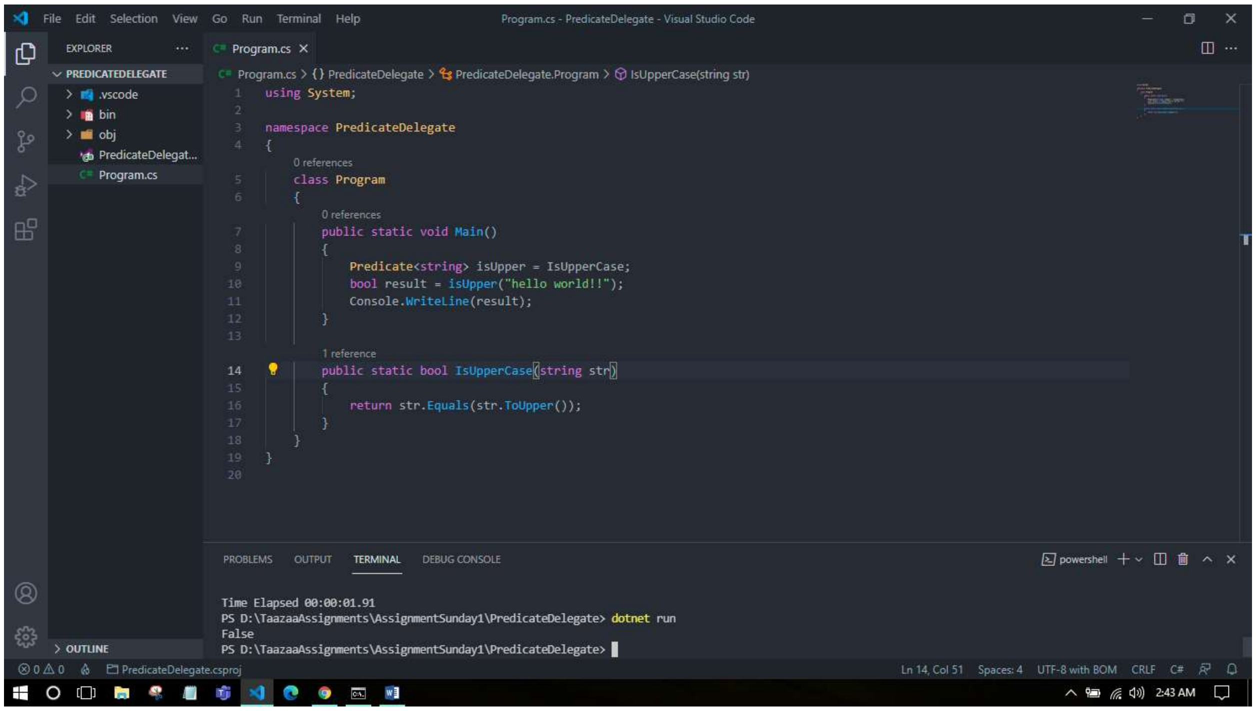
```
Time Elapsed 00:00:01.86
PS D:\TaazaaAssignments\AssignmentSunday1\ActionDelegate> dotnet run
25
PS D:\TaazaaAssignments\AssignmentSunday1\ActionDelegate>
```

4. Predicate <>

Predicate delegate takes one input parameter and boolean return type.

```
using System;

namespace PredicateDelegate
{
    class Program
    {
        public static void Main()
        {
            Predicate<string> isUpper = IsUpperCase;
            bool result = isUpper("hello world!!");
            Console.WriteLine(result);
        }

        public static bool IsUpperCase(string str)
        {
            return str.Equals(str.ToUpper());
        }
    }
}
```

```
PS D:\TaazaaAssignments\AssignmentSunday1\PredicateDelegate> dotnet run
False
```



```
using System;

namespace PredicateDelegate
{
    class Program
    {
        public static void Main()
        {
            Predicate<string> isUpper = IsUpperCase;
            bool result = isUpper("hello world!!");
            Console.WriteLine(result);
        }

        public static bool IsUpperCase(string str)
        {
            return str.Equals(str.ToUpper());
        }
    }
}
```

```
Time Elapsed 00:00:01.91
PS D:\TaazaaAssignments\AssignmentSunday1\PredicateDelegate> dotnet run
False
PS D:\TaazaaAssignments\AssignmentSunday1\PredicateDelegate>
```

5. File Handling

When we open a file for reading or writing, it becomes stream. Stream is a sequence of bytes traveling from a source to a destination over a communication path.

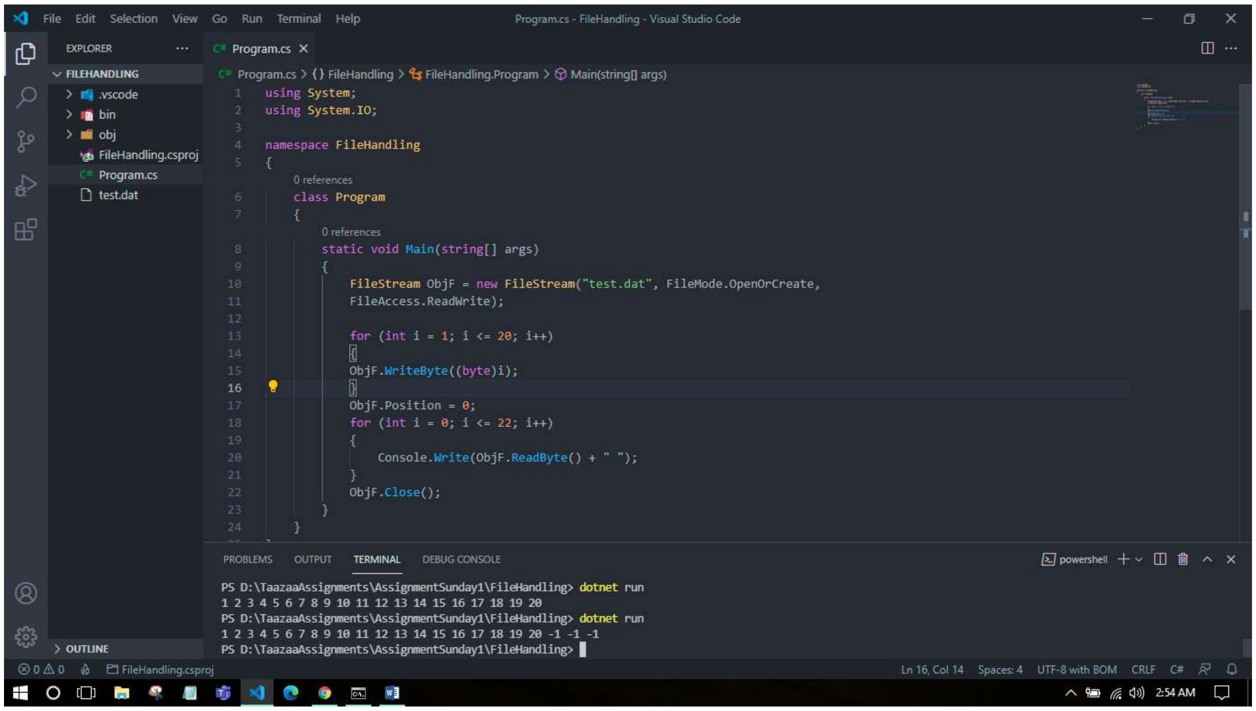
The two basic streams are input and output streams. Input stream is used to read and output stream is used to write.

The System.IO namespace includes various classes for file handling.

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

```
namespace FileHandling
{
  class Program
  {
    static void Main(string[] args)
    {
      FileStream ObjF = new FileStream("test.dat", FileMode.OpenOrCreate,
      FileAccess.ReadWrite);

      for (int i = 1; i <= 20; i++)
      {
      ObjF.WriteByte((byte)i);
      }
      ObjF.Position = 0;
      for (int i = 0; i <= 22; i++)
      {
        Console.Write(ObjF.ReadByte() + " ");
      }
      ObjF.Close();
    }
  }
}
```

```
PS D:\TaazaaAssignments\AssignmentSunday1\FileHandling> dotnet run
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 -1 -1 -1
```



File Edit Selection View Go Run Terminal Help
Program.cs - FileHandling - Visual Studio Code
EXPLORER
FILEHANDLING
.vscode
bin
obj
FileHandling.csproj
Program.cs
test.dat
OUTLINE
Program.cs
Program.cs > {} FileHandling > FileHandling.Program > Main(string[] args)
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
powershell
Ln 16, Col 14 Spaces: 4 UTF-8 with BOM CRLF C#
2:54 AM

```
using System;
using System.IO;

namespace FileHandling
{
    0 references
    class Program
    {
        0 references
        static void Main(string[] args)
        {
            FileStream ObjF = new FileStream("test.dat", FileMode.OpenOrCreate,
            FileAccess.ReadWrite);

            for (int i = 1; i <= 20; i++)
            {
            ObjF.WriteByte((byte)i);
            }
            ObjF.Position = 0;
            for (int i = 0; i <= 22; i++)
            {
                Console.Write(ObjF.ReadByte() + " ");
            }
            ObjF.Close();
        }
    }
```

```
PS D:\TaazaaAssignments\AssignmentSunday1\FileHandling> dotnet run
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
PS D:\TaazaaAssignments\AssignmentSunday1\FileHandling> dotnet run
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 -1 -1 -1
PS D:\TaazaaAssignments\AssignmentSunday1\FileHandling>
```