

Delegates In C#

A Delegate is type that enables you to store references to functions. Delegate are declare much like functions, but no function body and using delegate keyword. The delegate declares specify the return type and parameter list.

After defining a delegate, you can declare a variable with the type of that delegate. You can then initialize the variable as a reference to any function that has the same return type of list as that delegate. Once you have done this, you can call that function by using the delegate variable as if it were a function.

When you have a variable that refers to a function, you can also perform other operation that would be otherwise impossible. For example, you can pass a delegate variable to function as a parameter, and then that function can use delegate to call whatever function its refers to, without knowing that function will be call at runtime.

Try it out:

```
using System;
```

```
using System.Collections.Generic;
```

```
using System.Linq;
```

```
using System.Text;
```

```
namespace Ch06Ex05
```

```
{
```

```
    class Program
```

```
    {
```

```
        delegate double ProcessDelegate(double param1, double param2);
```

```
        static double Multiply(double param1, double param2)
```

```
        {
```

```
            return param1 * param2;
```

```
        }
```

```
static double Divide(double param1, double param2)
{
    return param1 / param2;
}

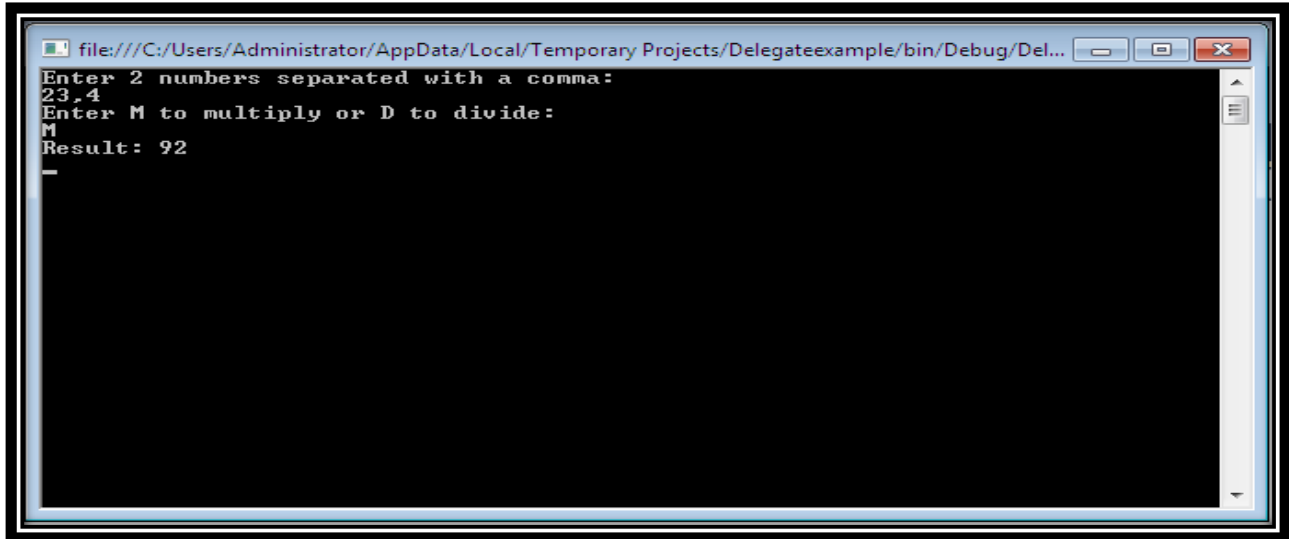
static void Main(string[] args)
{
    ProcessDelegate process;

    Console.WriteLine("Enter 2 numbers separated with a comma:");
    string input = Console.ReadLine();
    int commaPos = input.IndexOf(',');
    double param1 = Convert.ToDouble(input.Substring(0, commaPos));
    double param2 = Convert.ToDouble(input.Substring(commaPos + 1,
        input.Length - commaPos - 1));

    Console.WriteLine("Enter M to multiply or D to divide:");
    input = Console.ReadLine();
    if (input == "M")
        process = Multiply;
    else
        process = Divide;

    Console.WriteLine("Result: {0}", process(param1, param2));
    Console.ReadKey();
}
}
}
```

Output of above code...



```
file:///C:/Users/Administrator/AppData/Local/Temporary Projects/Delegateexample/bin/Debug/Del...
Enter 2 numbers separated with a comma:
23,4
Enter M to multiply or D to divide:
M
Result: 92
_
```