

Pass task 2.2:

Counter.cs file:

E:\COS20007\week2\Task2_2P\CounterTask\Counter.cs

```
E:\COS20007\week2\Task2_2P\CounterTask\Counter.cs 1
1 public class Counter
2 {
3     private int _count;
4     private string _name;
5
6     public Counter(string name)
7     {
8         _name = name;
9         _count = 0;
10    }
11
12    public void Increment()
13    {
14        checked
15        {
16            _count++;
17        }
18    }
19
20    public void Reset()
21    {
22        _count = 0;
23    }
24
25    public string Name
26    {
27        get
28        {
29            return _name;
30        }
31        set
32        {
33            _name = value;
34        }
35    }
36
37    public int Ticks
38    {
39        get
40        {
41            return _count;
42        }
43    }
44
45    public void ResetByDefault()
46    {
47        _count = unchecked(2147483647473);
48    }
49 }
```

Program.cs file:

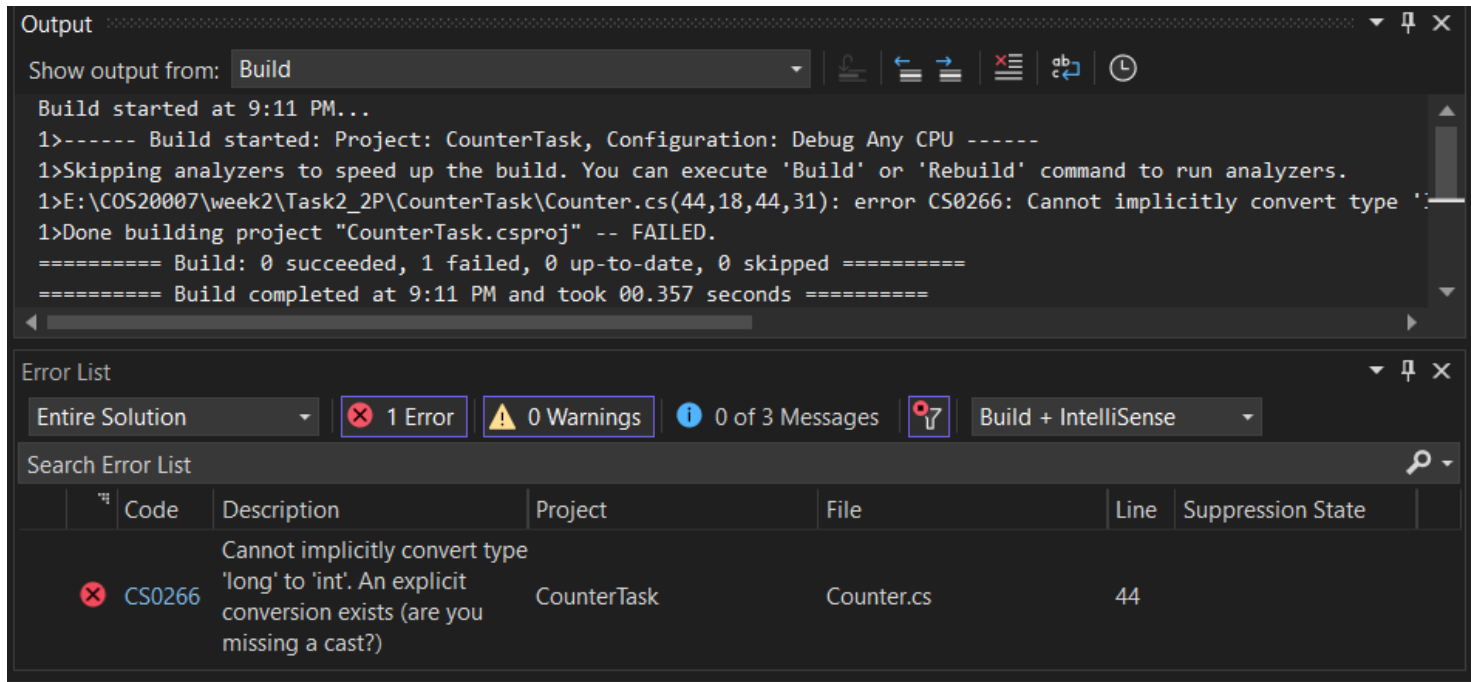
E:\COS20007\week2\Task2_2P\CounterTask\Program.cs

1

```
1 using System;
2 namespace CounterTask
3 {
4     internal class Program
5     {
6         private static void PrintCounters(Counter[] counters)
7         {
8             foreach (Counter c in counters)
9             {
10                 Console.WriteLine("{0} is {1}", c.Name, c.Ticks);
11             }
12         }
13
14         static void Main(string[] args)
15         {
16             Counter[] myCounters= new Counter[3];
17             myCounters[0] = new Counter("Counter 1");
18             myCounters[1] = new Counter("Counter 2");
19             myCounters[2] = myCounters[0];
20
21             for(int i=1; i<10; i++)
22             {
23                 myCounters[0].Increment();
24             }
25
26             for(int i=1; i<15; i++)
27             {
28                 myCounters[1].Increment();
29             }
30
31             PrintCounters(myCounters);
32             myCounters[2].Reset();
33             PrintCounters(myCounters);
34         }
35     }
36 }
37
```

13. Tell the Counter to increase the count value. Does the code still run without any bugs/crash? What is the reason behind? You can provide the answers as the comments in the code.

-The code will appear a bug/crash because the count value which is 2,147,483,647,473 exceeded the maximum value that an integer can have in C#(2,147,483,647).



The screenshot shows the Visual Studio interface with the Output and Error List windows. The Output window shows the build process for 'CounterTask' which failed due to an error. The Error List window shows a single error, CS0266, which is a compiler error indicating that the count value exceeded the maximum value for an integer.

Output

Show output from: Build

Build started at 9:11 PM...

1>----- Build started: Project: CounterTask, Configuration: Debug Any CPU -----

1>Skipping analyzers to speed up the build. You can execute 'Build' or 'Rebuild' command to run analyzers.

1>E:\COS20007\week2\Task2_2P\CounterTask\Counter.cs(44,18,44,31): error CS0266: Cannot implicitly convert type 'long' to 'int'. An explicit conversion exists (are you missing a cast?)

1>Done building project "CounterTask.csproj" -- FAILED.

===== Build: 0 succeeded, 1 failed, 0 up-to-date, 0 skipped =====

===== Build completed at 9:11 PM and took 00.357 seconds =====

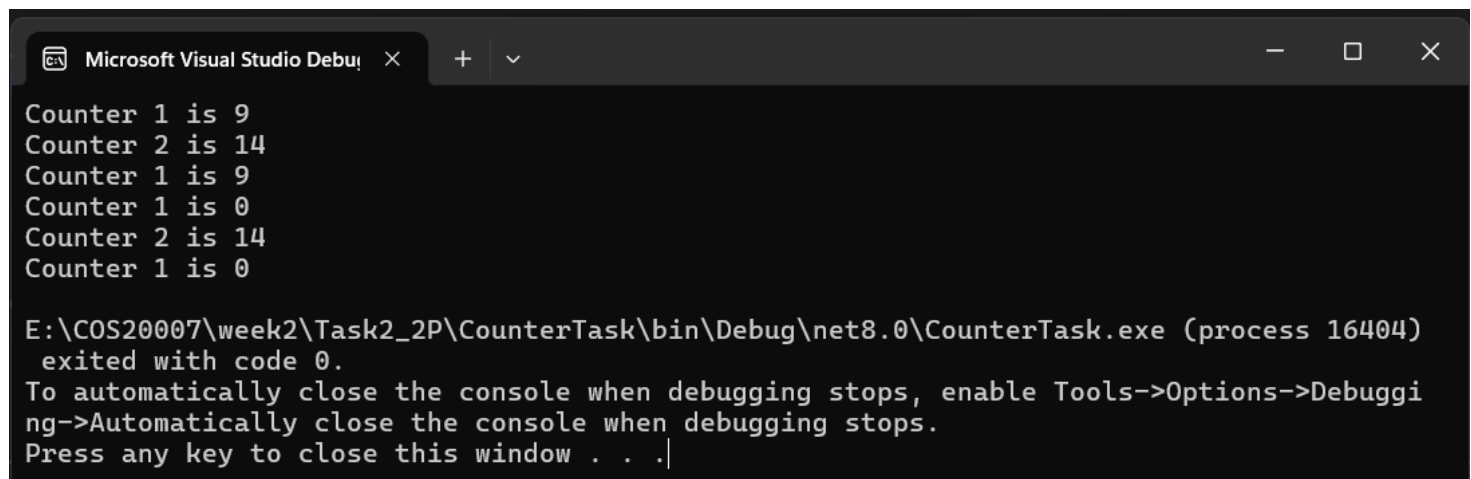
Error List

Entire Solution 1 Error 0 Warnings 0 of 3 Messages Build + IntelliSense

Search Error List

	Code	Description	Project	File	Line	Suppression State
✖	CS0266	Cannot implicitly convert type 'long' to 'int'. An explicit conversion exists (are you missing a cast?)	CounterTask	Counter.cs	44	

Program's output:



The screenshot shows the Visual Studio Debug Console window. The output shows the program's execution, which prints the count value for each counter. The output is as follows:

```
Counter 1 is 9
Counter 2 is 14
Counter 1 is 9
Counter 1 is 0
Counter 2 is 14
Counter 1 is 0
```

E:\COS20007\week2\Task2_2P\CounterTask\bin\Debug\net8.0\CounterTask.exe (process 16404) exited with code 0.

To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.

Press any key to close this window . . .