

Optimize the preceding code for Kathy and find out the errors (if any). What would be the output of the preceding code, if the first number is 46 while the second number is 37?

**Solution:**

Optimization methods for code:

- make the method "SwapNum" static, so you can use it without creating an instance of the class;
- initialize the variable in the same line as the variable declaration;
- use a try-catch construction for finding errors (incorrect data, program crashes, exceptions);
- Use "int.Parse" instead of "Convert.ToInt32", because when working with a format string "Convert.ToInt32", it uses "int.Parse".

**Optimized code:**

```
using System;
public class SwapNumber
{
    static void SwapNum(ref int a, ref int b)
    {
        int temp = a;
        a = b;
        b = temp;
    }
    static void Main(string[] args)
    {
        try
        {
            Console.WriteLine("Enter the first number");
            int Number1 = int.Parse(Console.ReadLine());
            Console.WriteLine("Enter the second number");
            int Number2 = int.Parse(Console.ReadLine());
            Console.WriteLine("The value of first number is {0}", Number1);
            Console.WriteLine("The value of second number is {0}", Number2);
            SwapNum(ref Number1, ref Number2);
            Console.WriteLine("Now the value of first number after swapping is {0}", Number1);
            Console.WriteLine("Now the value of second number after swapping is {0}", Number2);
        }
        catch (Exception e)
        {
            Console.WriteLine(e.Message);
        }
    }
}
```

**Answer:**

Input	Output
Enter the first number 46	Now the value of first number after swapping is 37
Enter the second number 37	Now the value of second number after swapping is 46

