Recursion Workshop - String Length

1. Create a static CountStrLen class that returns the length of a string. The static class has a public method Count that accepts a string and an implementation option.

```
public static class CountStrLen
{
    public static int Count(string str, string impl="recursive")
    {
        if (impl ≠ "recursive" && impl ≠ "iterative") {
            throw new Exception("Unknown implementation type");
        }

        return (impl == "recursive") ? RCount(str) : ICount(str);
    }

    private static int ICount(string str)
    {
        return 0;
    }

    private static int RCount(string str)
    {
        return 0;
    }
}
```

2. Provide implementations for the private methods ICount and RCount. ICount counts the length of a string iteratively (using a for loop), while RCount counts recursively.

3. Use the following Main program to test your code.

```
class Program
{
    static void Main(string[] args)
    {
        string impl = "iterative";

        Count("hello world");
        Count("hello world", impl);

        Count("apple");
        Count("apple", impl);

        Count("toy");
        Count("toy", impl);

        Count("");
        Count("", impl);
    }

    static void Count(string str, string impl="recursive")
    {
        Console.WriteLine("'{0}' has a length of {1}",
            str, CountStrLen.Count(str, impl));
    }
}
```

4. The output should look like this.

```
'hello world' has a length of 11
'hello world' has a length of 11
'apple' has a length of 5
'apple' has a length of 5
'toy' has a length of 3
'toy' has a length of 3
'' has a length of 0
'' has a length of 0
```