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Question 1: Briefly describe the regex library of C#.

The regex library of C# is a powerful tool for working with regular expressions. It provides a set of classes and methods that allow you to match, search, and replace text based on regular expression patterns.

The most important class in the regex library is the Regex class. This class represents a regular expression and provides a variety of methods for working with it. For example, you can use the Match() method to find a match for the regular expression in a given string, and the Replace() method to replace all matches for the regular expression with a new string.

The regex library also includes a number of other classes and methods that can be useful for working with regular expressions. For example, the MatchCollection class represents a collection of matches for a regular expression, and the Group class represents a group of characters within a match.

Here is an example of how to use the regex library to match and replace text:

```
// Create a regular expression object

Regex regex = new Regex(@"\d+");

// Match the regular expression in the input string

Match match = regex.Match("This string contains 123 numbers");

// If there is a match, replace it with the string "numbers"

if (match.Success)

{

    string output = match.Result.Replace("123 numbers", "numbers");


    Console.WriteLine(output); // This string contains numbers

}
```

The regex library is a very powerful tool for working with text, and it can be used to solve a wide variety of problems.

Here are some of the benefits of using the regex library of C#:

- It is very efficient and can be used to process large amounts of text quickly.
- It is very flexible and can be used to create complex regular expression patterns.
- It is well-documented and there are many resources available to help you learn how to use it.

If you need to work with text in your C# applications, I highly recommend using the regex library.