Question: 01

Answer:

The regex library of C# is a set of classes and methods that provide regular expression matching and replacement functionality. It is part of:

System.Text.RegularExpressions namespace.

Regular expressions are a powerful tool for text processing. They can be used to match, extract, replace, and split text strings. Regular expressions are defined using a special pattern language, which is made up of special characters and operators.

The C# regex library provides a number of methods for working with regular expressions. These methods include:

IsMatch(): Determines whether a regular expression pattern matches a given string.

Match(): Returns a Match object that contains information about the first match of a regular expression pattern in a given string.

Matches(): Returns a Match Collection object that contains a collection of Match objects, each of which represents a match of a regular expression pattern in a given string.

Replace(): Replaces all occurrences of a regular expression pattern in a given string with a replacement string.

Split(): Splits a given string into an array of substrings, using a regular expression pattern as the delimiter.

The C# regex library also provides a number of options that can be used to control how regular expressions are matched. These options include:

IgnoreCase: Specifies whether to ignore case when matching regular expressions.

Multiline: Specifies whether to match regular expressions across multiple lines.

Singleline: Specifies whether to treat the input string as a single line.

ExplicitCapture: Specifies whether to explicitly capture matched groups.

RightToLeft: Specifies whether to match regular expressions from right to left.

The C# regex library is a powerful tool for text processing. It can be used to perform a wide variety of tasks, such as validating user input, extracting data from text files, and converting text from one format to another.

Here is an example of how to use the C# regex library to validate an email address:

Code of C#:

```
using System;

using System.Text.RegularExpressions;


public class EmailValidator

{

    private static readonly Regex emailRegex = new Regex(@"^[a-zA-Z0-9.!#$%&'*+-/=?^_`{|}~-]+@[a-zA-Z0-9-]+(?:\.[a-zA-Z0-9-]+)*$", RegexOptions.IgnoreCase);


    public static bool IsValidEmail(string emailAddress)

    {

        return emailRegex.IsMatch(emailAddress);

    }

}
```

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