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**Question No 01**  
Briefly describe the regex library of C#

**Solution:**The regular expression (regex) library in C# is provided by the System.Text.RegularExpressions namespace, which contains classes and methods for working with regular expressions. Here's a brief overview along with examples:

* **Regex Class:** The Regex class is the core of C#'s regex library. It provides methods for pattern matching and searching within strings.
* **Example:**

using System;

using System.Text.RegularExpressions;

class Program {

static void Main() {

string input = "Hello, 12345";

string pattern = @"\d+"; // Matches one or more digits

// Match and print the first match

Match match = Regex.Match(input, pattern);

if (match.Success) {

Console.WriteLine(match.Value); // Output: 12345

}

// Find and print all matches

MatchCollection matches = Regex.Matches(input, pattern);

foreach (Match m in matches) {

Console.WriteLine(m.Value); // Output: 12345

}

}

}

* **Regular Expression Patterns:** You can create complex patterns using metacharacters and quantifiers. For example, "\d+" matches one or more digits.
* **Match and MatchCollection:** Match represents a single match, while MatchCollection contains multiple matches found in the input string.
* **Regex Options:** You can specify options like case-insensitivity, multi-line mode, etc., using the RegexOptions enum.
* **Regex.Replace:** You can replace matched patterns with a specified replacement string.
* **Example:**

string input = "Hello, 12345";

string pattern = @"\d+";

string replacement = "X";

string result = Regex.Replace(input, pattern, replacement);

// Output: "Hello, X"

* **Regex.Split:** Split a string based on a regex pattern.
* **Example:**

string input = "apple,banana,cherry";

string pattern = ",";

string[] parts = Regex.Split(input, pattern);

// Output: ["apple", "banana", "cherry"]