**CC LAB MID**

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**Question # 01:**

Briefly describe the regex library of C#

**Answer:**

In C#, the .NET Framework provides a powerful regular expression library through the System.Text.RegularExpressions namespace. This library allows you to work with regular expressions for pattern matching and manipulation. Key components of the C# regex library include:

1. Regex Class: The Regex class is at the core of the library and provides methods for working with regular expressions. You can use it to compile and manage regex patterns, search for matches in strings, and perform replacements.

2. Regular Expression Patterns: C# supports a wide range of regular expression patterns for matching and extracting specific text patterns from strings. Patterns can include metacharacters, quantifiers, character classes, and more.

3. Match Objects: When a regex pattern matches a string, it creates a Match object that provides information about the match, including the matched text, its position in the input string, and any captured groups.

4. Grouping and Capturing: You can use parentheses in your regex patterns to define capture groups, allowing you to extract specific parts of the matched text.

5. Replacement and Substitution: The Regex class provides methods for replacing matched text with specified replacement patterns, making it useful for text manipulation and transformation.

6. Options and Flags: You can use regex options and flags to control various aspects of pattern matching, such as case sensitivity, multiline mode, and more.

Overall, the C# regex library is a robust tool for handling regular expressions in .NET applications, making it easier to perform tasks like text validation, data extraction, and text manipulation based on patterns.