COMSATS UNIVERSITY ISLAMABAD

Mid Term Lab

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Registration:

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Submitted To:

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Subject:

Compiler Construction

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Question 2 **5**

Design a WinForms or Console App that:

- Takes input code (in your own mini-language) from a textbox:

  var a1 = 12@; float b2 = 3.14$$;

- Use a regex pattern to extract only those variable names that start with a, b, or c, end in digits, and contain non-alphanumeric special characters in the value.

Display them in a table with columns: VarName, SpecialSymbol, and Token Type. *[CLO*

```
using System;
using System.Text.RegularExpressions;
using System.Collections.Generic;

class Program
{
    static void Main()
    {
        // Input mini-language code
        string input = "var a1 = 12@; float b2 = 3.14$$;";

        // Regex pattern explanation:
        // Group 1: (a|b|c)\w*\d – variable name starts with a/b/c and ends with digits
        // Group 2: [^a-zA-Z0-9]+ – special characters in the value
        string pattern = @"(a|b|c)\w*\d\s*=\s*[^a-zA-Z0-9\s]*([\W_]+)";

        // Find matches
        MatchCollection matches = Regex.Matches(input, @"(?<type>\w+)\s+(?<varname>([abc]\w*\d))\s*=\s*[^a-zA-Z0-9]*?(?<symbol>[\W_]+)");

        // Table Header
        Console.WriteLine("VarName\tSpecialSymbol\tToken Type");
        Console.WriteLine("-------\t-------------\t-----------");

        // Loop through matches
        foreach (Match match in matches)
        {
            string varName = match.Groups["varname"].Value;
            string specialSymbol = match.Groups["symbol"].Value;
            string tokenType = match.Groups["type"].Value;

            Console.WriteLine($"{varName}\t{specialSymbol}\t\t{tokenType}");
        }
    }
}+
```

Output

```
VarName SpecialSymbol   Token Type
------- -------------   -----------
a1          var
b2          float

=== Code Execution Successful ===
```