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LAB 02

Lab Task 1:

Design regular expression for logical operators.

```
using System;

using System.Text.RegularExpressions;

class Program

{

    static void Main()

    {

        string input = "a && b || c ! d";

        string pattern = @"&&|\|\||!";

        Regex regex = new Regex(pattern);

        MatchCollection matches = regex.Matches(input);

        foreach (Match match in matches)

        {

            Console.WriteLine($"Found logical operator: {match.Value}");

        }

        Console.ReadKey();

    }

}
```

Lab Task 2:

Design regular expression for relational operators:

```
using System;

using System.Text.RegularExpressions;


class Program

{

  static void Main()

  {

    string input = "a == b && c != d || x > y && z <= w";

    string pattern = @"==|!=|>=|<=|>|<";

    Regex regex = new Regex(pattern);

    MatchCollection matches = regex.Matches(input);

    Console.WriteLine("Found relational operators:");

    foreach (Match match in matches)

    {

      Console.WriteLine(match.Value);

    }

  }

}
```

LAB 03

Lab Task 1:

Design a regular expression for floating point numbers having length not greater than 6.

```
using System;

using System.Text.RegularExpressions;

class Program

{

    static void Main()

    {

        string pattern = @"^[+-]?(\d{1,5}(\.\d{1,5})?|\.\d{1,5})$";

        Regex regex = new Regex(pattern);

        string[] testInputs = {

            "123.456",

            "-123.45",

            "0.123",

            "+.123",

            "12345",

            "123456",

            "123.4567",

            "12.34567",

            ".123456"

        };

        foreach (var input in testInputs)
```

```csharp
        {
            if (regex.IsMatch(input))
            {
                Console.WriteLine($"'{input}' is a valid floating point number.");
            }
            else
            {
                Console.WriteLine($"'{input}' is not a valid floating point number.");
            }
        }
    }
}
```