

# COMSATS UNIVERSITY ISLAMABAD



## Mid Term Lab

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**Registration:**

SP22-BCS-010

**Submitted To:**

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**Subject:**

Compiler Construction

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Write a console-based C# program that processes this custom string:

*x:userinput; y:userinput; z:4; result: x \* y + z;*

You must

- Extract the variables and values.
- Perform the operation.
- Display the original variables with values, and final result.
- Use student's last two digits of student ID as part of at least one variable name (e.g., 23 if ID ends in BCS-023).

Output format:

**z = 4**

**Result = 10**

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

class Program
{
    static void Main()
    {
        int studentIdSuffix = 10;

        string input = "x:userinput; y:userinput; z:4; result: x * y + z;";

        var matches = Regex.Matches(input, @"(\w+):([^\;]+);");

        var variables = new Dictionary<string, string>();

        foreach (Match match in matches)
        {
            if (match.Groups.Count >= 3)
            {
                string varName = match.Groups[1].Value;
                string varValue = match.Groups[2].Value;
                variables[varName] = varValue;
            }
        }

        int x10 = 3;
        int y10 = 2;
        int z10 = int.Parse(variables["z"]);

        string varWithId = $"var{studentIdSuffix}";
        variables[varWithId] = "0";

        int result = x10 * y10 + z10;

        Console.WriteLine($"x = {x10}");
        Console.WriteLine($"y = {y10}");
        Console.WriteLine($"z = {z10}");
        Console.WriteLine($"{{varWithId}} = 0");
        Console.WriteLine($"Result = {result}");
    }
}
```

## Output

x = 3

y = 2

z = 4

var10 = 0

Result = 10

=== Code Execution Successful ===