Academia International College

Affiliated to Tribhuvan University

Lab Report on

Basic Concept of C#

Submitted by:

Sagar Timalsena

Roll No. 15847

Lab: 4

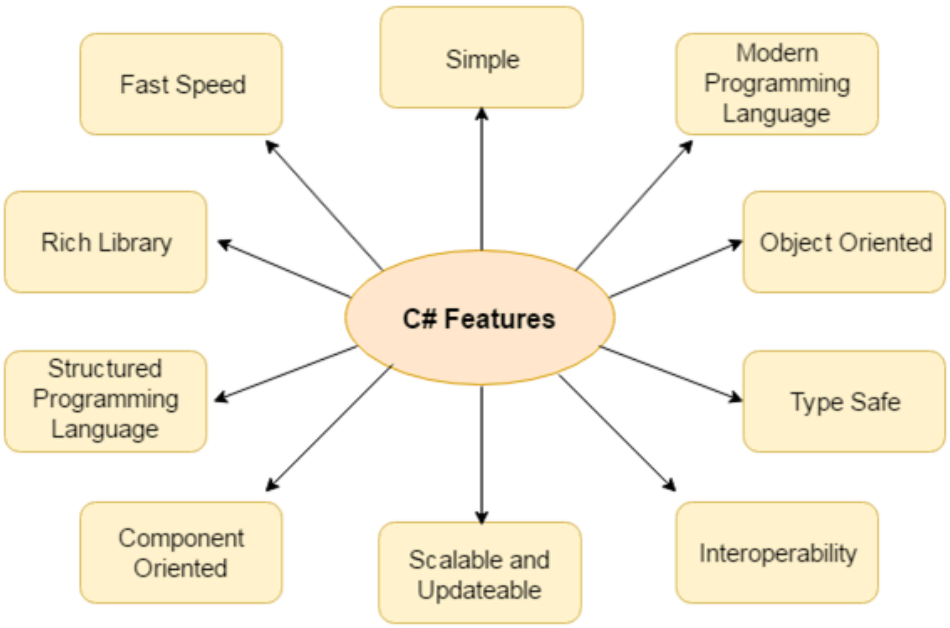
Submitted To:

Chandan Bhagat Gupta

Theory:

C#:

- C# is a programming language developed by Microsoft that runs on the .NET Framework.
- C# is used to develop web apps, desktop apps, mobile apps, games and much more.
- C# is object-oriented programming language. It provides a lot of features that are given below:



- C# is approved as a standard by ECMA and ISO.
- C# is designed for CLI (Common Language Infrastructure). CLI is specification that describes executable code and runtime environment.
- C# programming language is influenced by C++, Java, Eiffel, Modula-3, Pascal etc. languages.

Code:

1. **Write a C# Sharp program that takes four numbers as input to calculate and print the average.**

   Code:

```
using System;
namespace Average
{
    class Program
    {
        static void Main(string[] args)
        {
            Console.Write("Enter any four number: ");
            var input = Console.ReadLine().Split(' ');

            float num1 = int.Parse(input[0]);
            float num2 = int.Parse(input[1]);
            float num3 = int.Parse(input[2]);
            float num4 = int.Parse(input[3]);

            float average = (num1 + num2 + num3 + num4)/4;

            Console.WriteLine("The average of 4 numbers is: "+ average);
        }
    }
}
```

Output:

```
PS C:\Users\stima\Downloads\ncclab\Average> dotnet run
Enter any four number: 1 3 5 7 9 11
The average of 4 numbers is: 4
```

2. **Write a C# program to create a new string from a given string where the first and last characters will change their positions.**

Code:

```
using System;
using System.Text;

namespace SwapChar
{
    class Program
    {
        static void Main(string[] args)
        {
            string str = "EVE";
            var word = new StringBuilder();
            word.Append(str);

            var temp = word[0];
            word[0] = word[word.Length-1];
            word[word.Length-1] = temp;

            Console.WriteLine(str + " => " + word);
        }
    }
}
```

Output:

```
PS C:\Users\stima\Downloads\ncclab\SwapChar> dotnet run
EVE => EVE
PS C:\Users\stima\Downloads\ncclab\SwapChar>
```

3. **Write a C# program to find the longest word in a string.**

Code:

```
using System;

namespace LongestWord
{
    class Program
    {
        static void Main(string[] args)
        {
            string line = "Timalsena you are awesome";
            string[] words = line.Split(new[] { " " }, StringSplitOptions.None);
            string word = "";
            int ctr = 0;
            foreach (String s in words)
            {
                if (s.Length > ctr)
                {
                    word = s;
                    ctr = s.Length;
                }
            }
            Console.WriteLine("From the string '" + line + "' , '" + word + "' is the longest word.");
        }
    }
}
```

Output:

```
PS C:\Users\stima\Downloads\ncclab\LongestWord> dotnet run
From the string 'Timalsena you are awesome' , 'Timalsena' is the longest word.
PS C:\Users\stima\Downloads\ncclab\LongestWord>
```

4. **Write a C# program to create a new string which is 4 copies of the 2 front characters of a given string. If the given string length is less than 2 return the original string.**

Code:

```
using System;
using System.Text;

namespace Copycat
{
    class Program
    {
        static void Main(string[] args)
        {
            string word = "Aarohan";
            var term = new StringBuilder();

            if(word.Length < 2)
            {
                Console.WriteLine(word);
            }
            else
            {
                for(int i=0; i<4;i++)
                {
                    term.Append(word[0]+""+word[1]);
                }
                Console.WriteLine(term);
            }
        }
    }
}
```

Output:

```
PS C:\Users\stima\Downloads\ncclab\Copycat> dotnet run
AaAaAaAa
PS C:\Users\stima\Downloads\ncclab\Copycat>
```

Conclusion:

Hence, we implemented the basic concept of C# to find the average of four numbers, create a new string from a given string where the first and last characters will change their positions, find the longest word in a string, and create a new string which is 4 copies of the 2 front characters of a given string.

GitHub Repository:

All the above codes used in this report are uploaded in GitHub Repository

Github (https://github.com/Sagar1555/ncclab)