LAB # 3: INTRODUCTION TO C# PROGRAMMING

Objective:

1- Introduction to C# Programming
2- How to create C# application Visual Studio
3-How to create C# classes in Visual Studio

Scope:

The student should know the following:

1. Object-Oriented Programming basics.
2. C# Practice.
3. Basic exercises.

C#

C# is a modern, object-oriented programming language. C# enables developers to build many types of secure and robust applications that run in .NET Framework.

The following reasons make C# a widely used professional language:

- It is a modern, general-purpose programming language
- It is object oriented.
- It is easy to learn.
- It produces efficient programs.
- It follows common language infrastructure.

Reference: https://www.tutorialspoint.com/csharp/csharp_tutorial.pdf

Basic keywords in C#

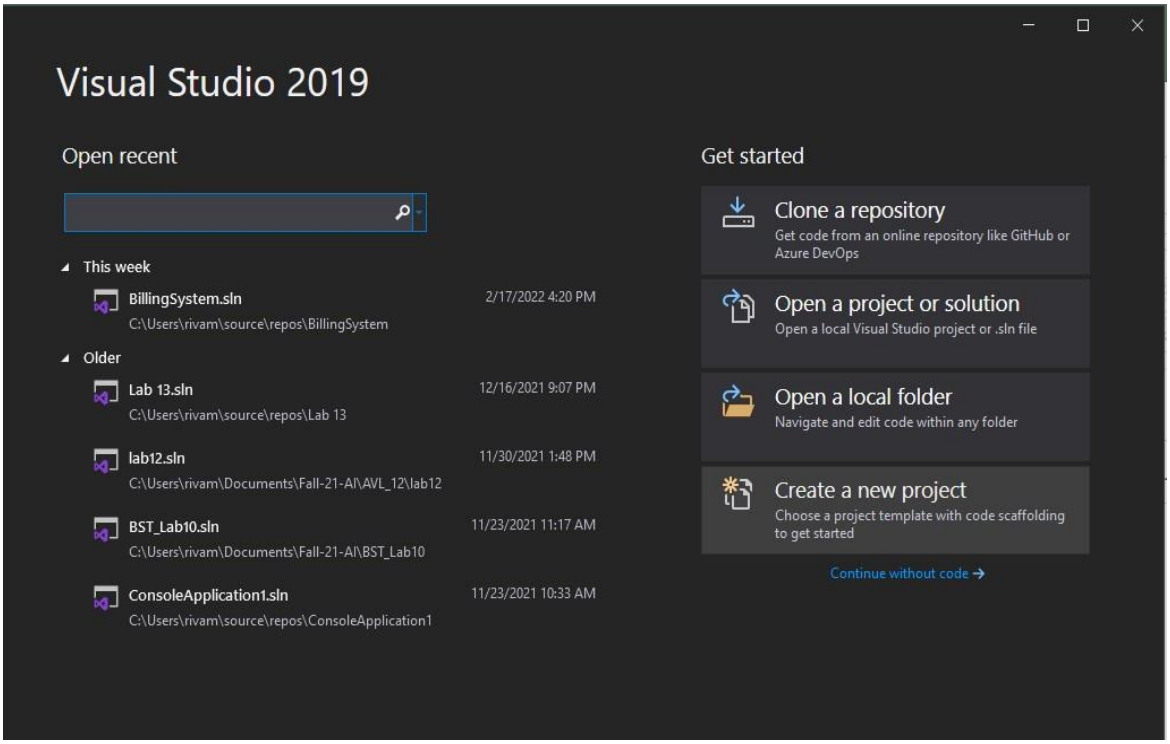
public	protected	private	namespace	abstract
break	case	foreach	false	true
for	do	while	class	break

Basic data types in C#

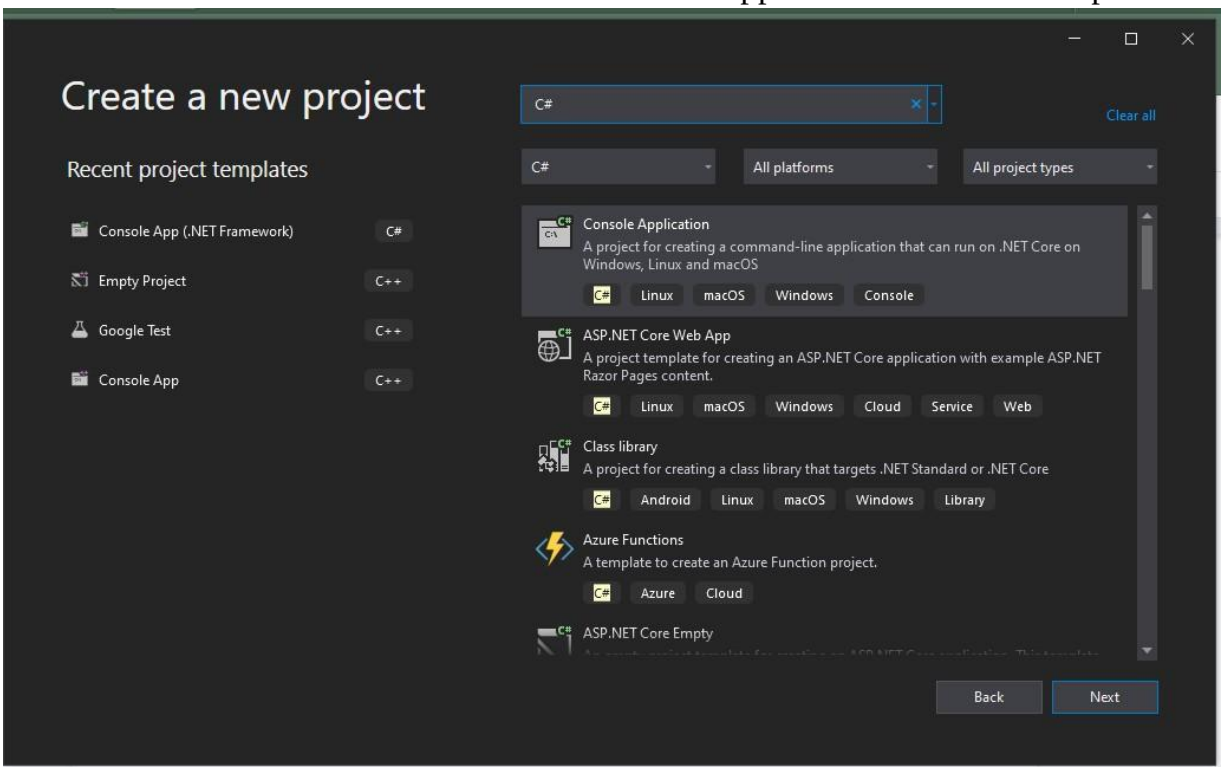
bool	char	int	double	string

Creating a C# application in Visual Studio

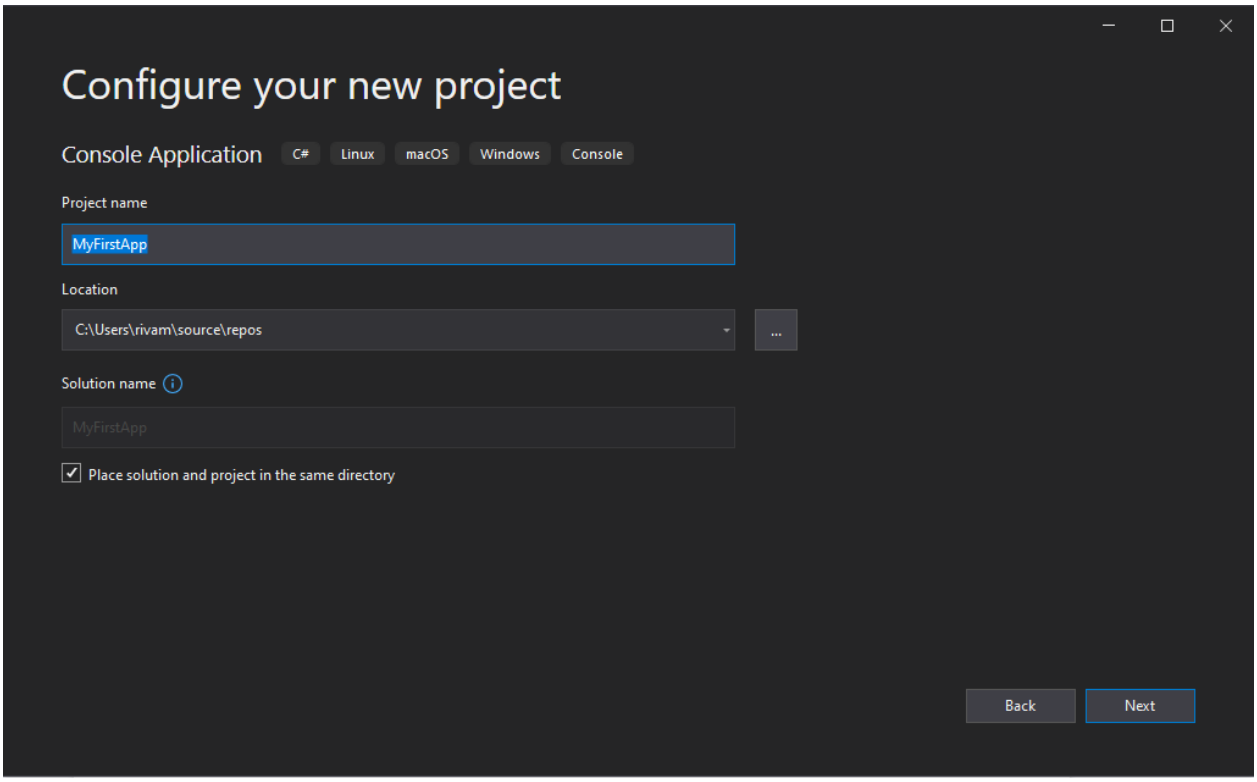
Open Visual Studio and click “Create a new project”



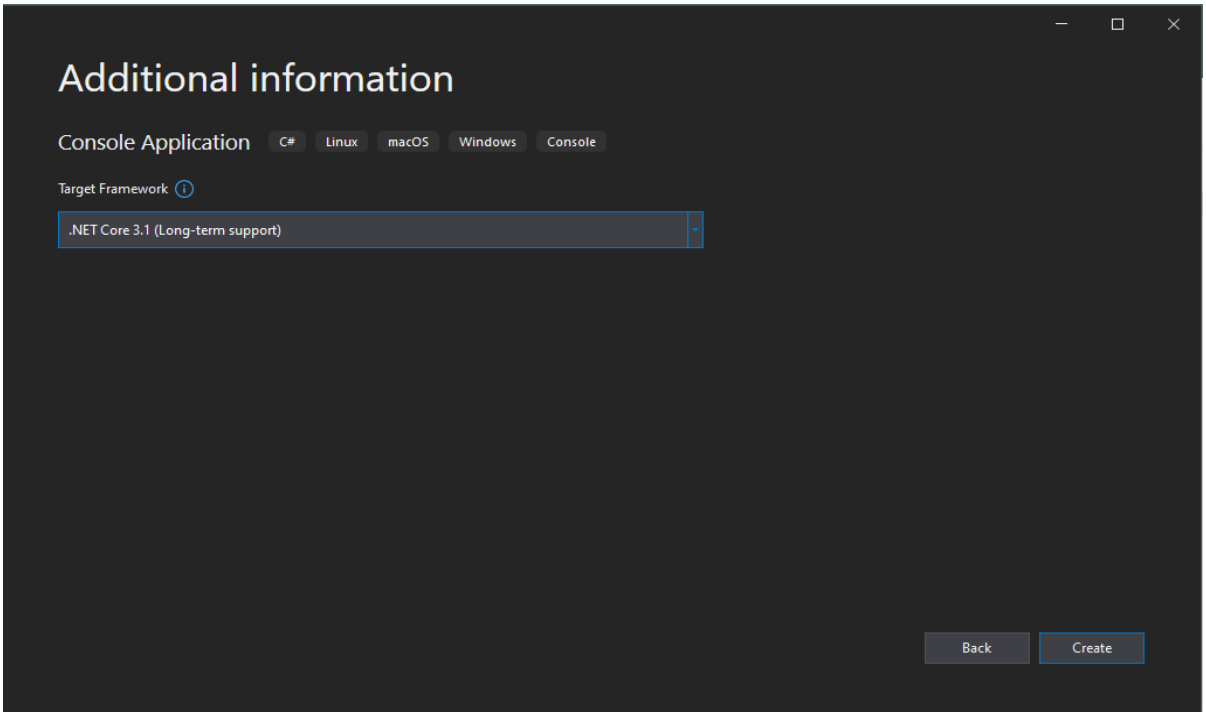
Search for C# in the search box and select Console Application. Click Next to proceed.



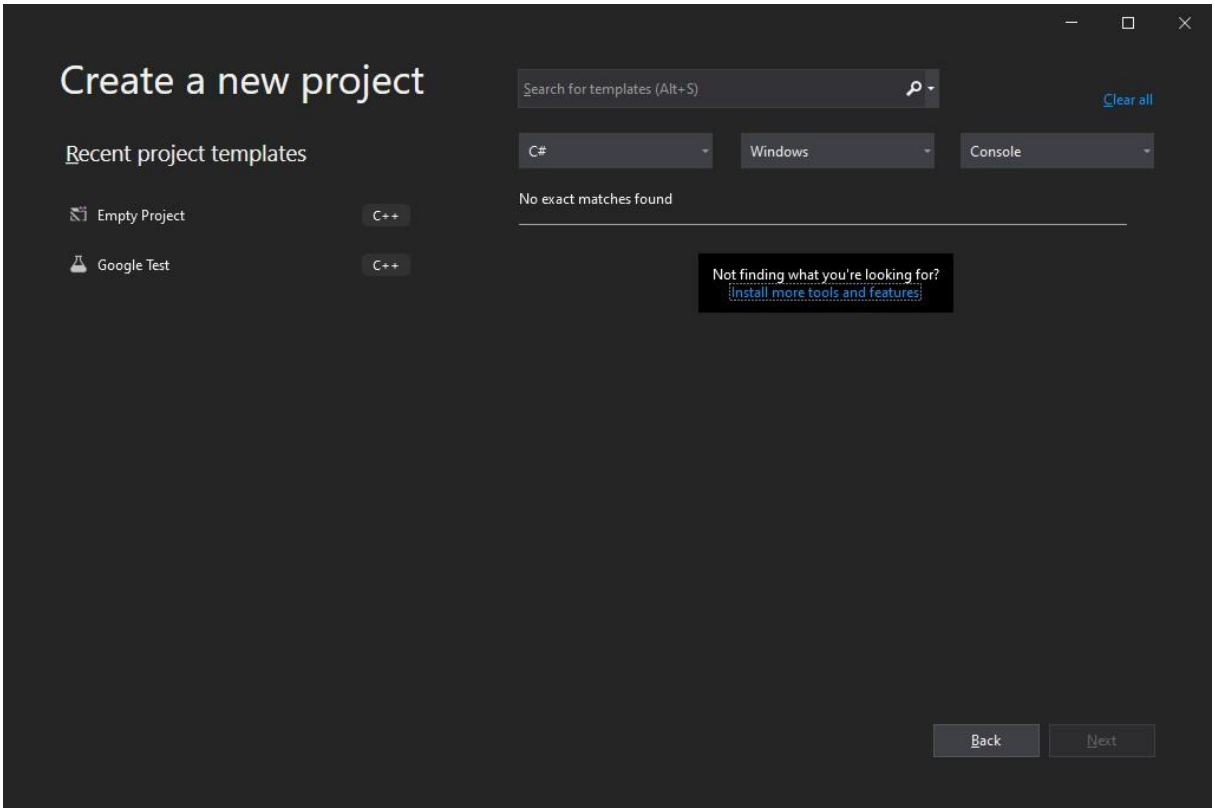
Rename the application and select the location of the project. Click Next to proceed.



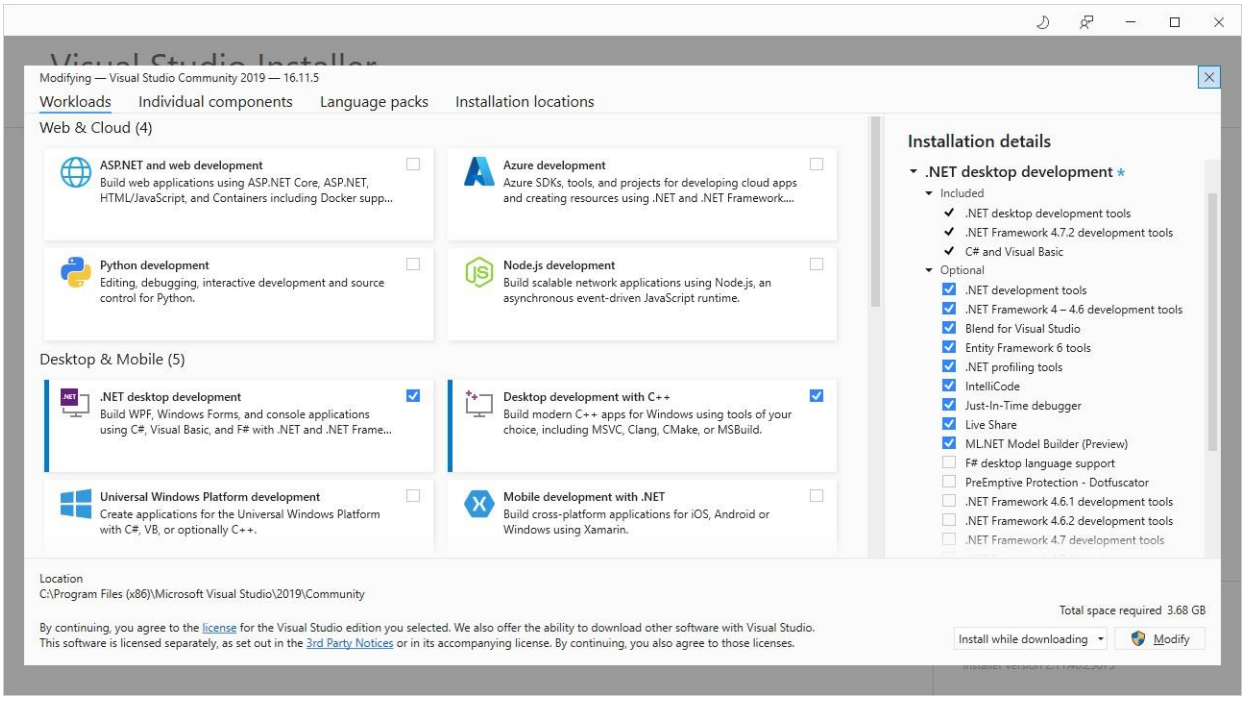
Keep the following selection and Create



If you don't see the Console App template, select Install more tools and features. Click install more tools and features.



In the Visual Studio Installer, choose the .NET desktop development workload, and then select Modify.



After installing the tools and features of C#, open the visual studio and follow the steps given above for creating a C# application.

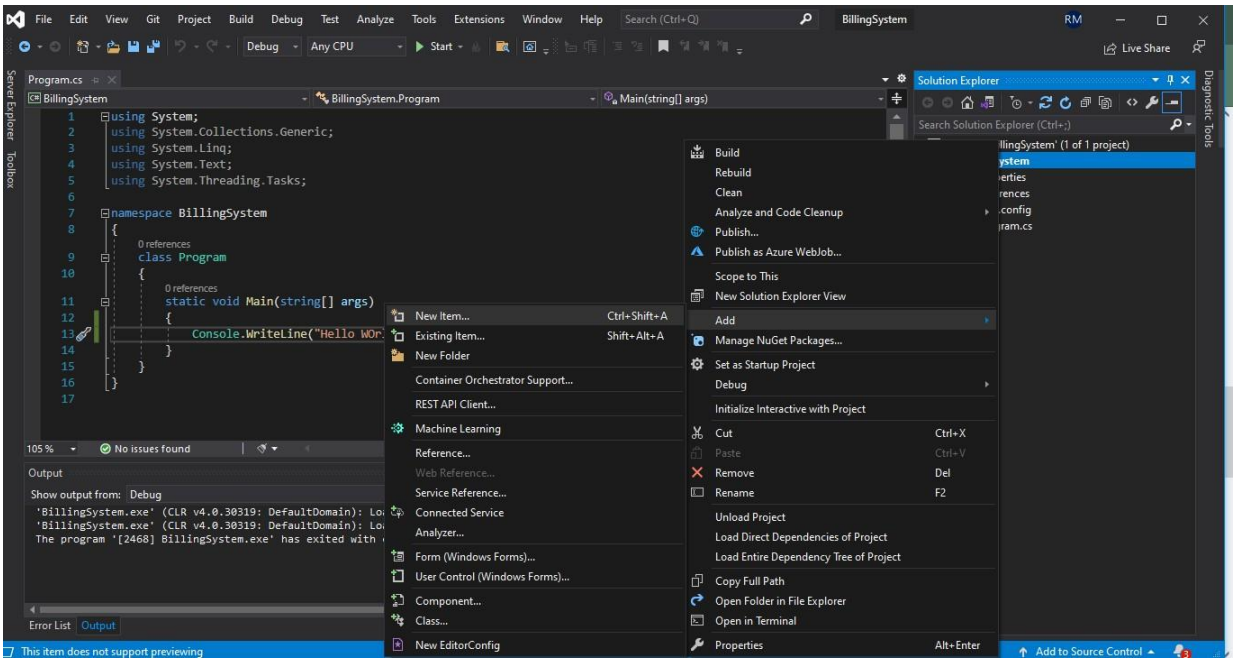
Hello World in C#

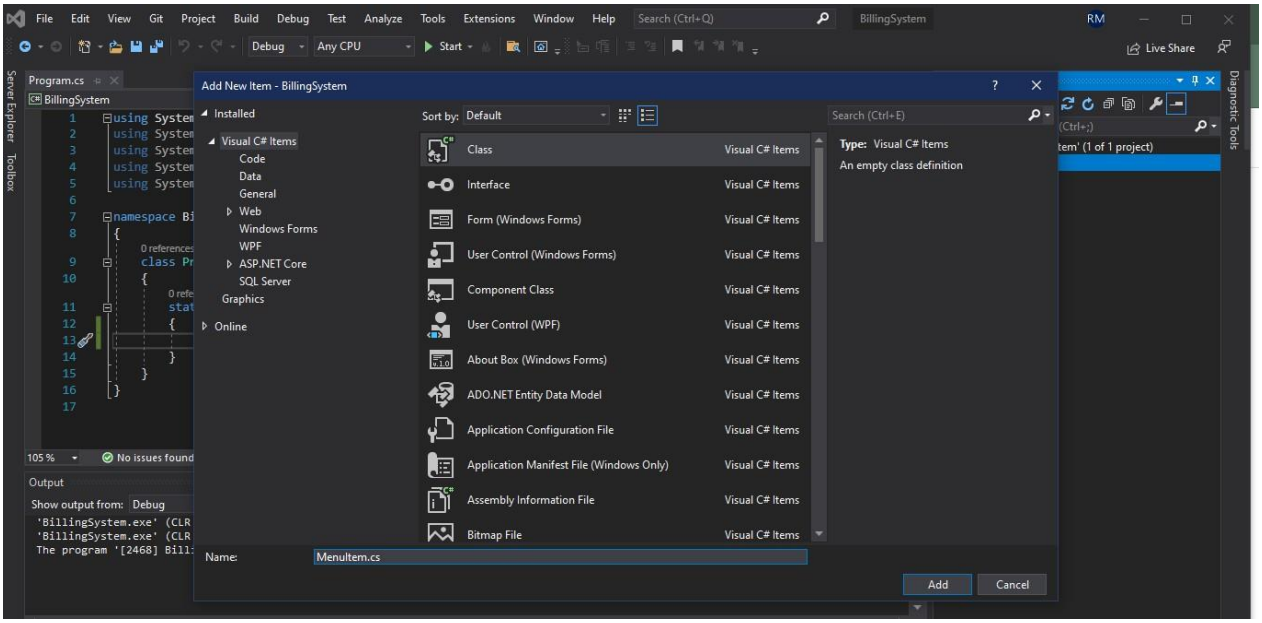
C# uses Object Oriented paradigm

```
using System;

class Hello
{
    static void Main()
    {
        Console.WriteLine("Hello, World");
    }
}
```

Adding new Class to project in Visual Studio





Practice in C#

1. Consider a Calculator in C#. The specifications are as follows:
   - Addition
   - Subtraction
   - Division
   - Modular division
   - Multiplication
   - Prime number
   - Factorial using recursion
   - Square root of a number
2. Write a C# program to find the longest word in a string.
3. Write a program in C# to check whether a number is a palindrome or not.
4. Write a C# program to reverse the words of a sentence.
   Original String: Display the pattern like pyramid using the alphabet.
   Reverse String: alphabet. the using pyramid like pattern the Display
5. Write a program in C# to reverse a string.
6. A string is said to be a SUPER STRING if the number of times the character appeared in the string is equal to its ASCII value. Given the conditions that the ASCII value of 'A' is 26 and Z is '1'.

   Example: ZYYZ is not SUPER STRING (As Y appear 2 times and ASCII is 2 but Z's ASCII is 1 but appeared 2 times). ZYY is SUPER STRING.