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Application of High Level Programming Language (Visual Basic): A Review

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Abstract:*Visual Basic is a one type of high-level Object Oriented Programming Language. It is developed by the Microsoft.NET Framework. It has finally become a fully-generated Object Oriented Programming Language with all the associated features one would come to expect. It allows programmers to handle much larger applications, through improved scalability and reusability with all features than any other programming language. Various VB Tools are used in this program. This article discusses the new features using .Net code examples to real applications in Computer Technology.*

Keywords*: Object Oriented Programming Language, High Level Language, Visual Basic, Simple Programming using VB.Net.*

I. Introduction

Computer Programming means various set of instructions. The earliest programming language is called machine language which uses the Binary code that means 0 and 1 to communicate with the computer. However, the machine language is extremely difficult to learn. In this present time, scientists have invented some high-level programming languages that are much easier to read and comfortable for the user as well as programmer.

A high-level language is a one type of programming language that designed to simplify computer programming. It is **"high-level"** since it has various steps removed from the actual programming code that run on a Computer's processor.

High-level-Language's source code contains easy to read syntax which is converted into a low-level language in future, which can be recognized and run by a specific Processing Device i.e. C.P.U. Such languages are considered high-level because they are closer that means very user friendly to Human languages and further from machine languages.

In Computing Technology, There are various High-Level-Languages are present. Some of them are given below:-

- C++
- C#
- Fortran
- Java
- Visual Basic(VB)
- PHP and etc.
- Basic

This review paper are contained the information about most important high level language that is Visual Basic.
Visual Basic (VB.NET) is an object-oriented computer programming language implemented by the .NET Framework 2.0 or higher. Although it is an evolution of classic Visual Basic language, it is not backwards-compatible with VB6, and any code written in the old version does not compile under VB.NET.
VB.NET is implemented by Microsoft Corporation .NET Framework. Therefore, it has full access to all the libraries in the .Net Framework. It is also possible to run VB.NET programs on Mono, the open-source alternative to .NET, not only under Windows, but even Linux or Mac Operating System.
Like all other .NET languages, VB.NET has complete support for object-oriented concepts that is Encapsulation, Polymorphism, Abstraction and other programming features. Everything in VB.NET is an object, including all of the primitive data types (Short, Integer, Long, String, Boolean, etc.) and user-defined data types & events. All objects inherited from the base class Object.

II. Features of Visual Basic

VB.NET has numerous features that have made it a popular object oriented programming language. Some of the features are given below:-

- VB.NET is not a case sensitive like other languages such as C++ and Java.
- It is an object-oriented programming language. It treats everything as an object.
- XML designer, improved object browser etc.
- VB helps us to formatting the code automatically.
- In this language, Garbage collection is automated.
- Support for Boolean conditions for Decision making statements.
- Simple multithreading, allowing to deal with multiple tasks simultaneously at a same time.
- Events management handling is done by this Object-Oriented Programming Language.
- Attributes, which are tags for providing additional information regarding elements that have been defined within a program.
- Different tools are present in VB to use different task at a same time.

Advantages of Visual Basic

The following are the advantages to enjoy for coding in Visual Basic:-

- Programming code will be formatted automatically with suitable form that the programmer's need.
- Programmer can also to create web applications with modern features like performance counters, event logs, and file system or any other modern application.
- User as like as programmer can also use drag and drop capability to replace any elements that may need at any time.
- Connect the applications to other applications created by this languages that run on the .NET framework platform.
- This programming language's has very enjoyable features like docking, automatic control anchoring, and good for developing web applications etc.
- This Programming Language is easy to develop and secure than other programming language.

Disadvantages of Visual Basic

Below are some of the drawbacks associated with Visual Basic:-

- Visual basic is a proprietary programming language developed by Microsoft Corporation. So programs written in Visual basic cannot easily transfer to other platform i.e. operating systems.
- As programmer design any application or software by this programming language by using Microsoft Visual Studio 2010 or higher, so after successfully implementing software or application cannot run without Microsoft Visual Studio or .Net Framework 4.0 or higher. It is big disadvantage of this language.
- As Visual Basic cannot handle pointers directly, so any additional coding will lead to many CPU cycles, requiring more processing time than other programming languae. As a result this application will become slow than any other programming language.

III. Some Simple Visual Basic Programming with VB Code

List of Programming are as given below:-

a)	Addition	e) Swap	i) Palindrome
b)	Subtraction	f) Combined name	j) Even or Odd
c)	Multiplication	g) Factorial	k) String Palindrome
d)	Division	h)Prime or Not	l) Leap year or Not

A Sample form for Login Manual

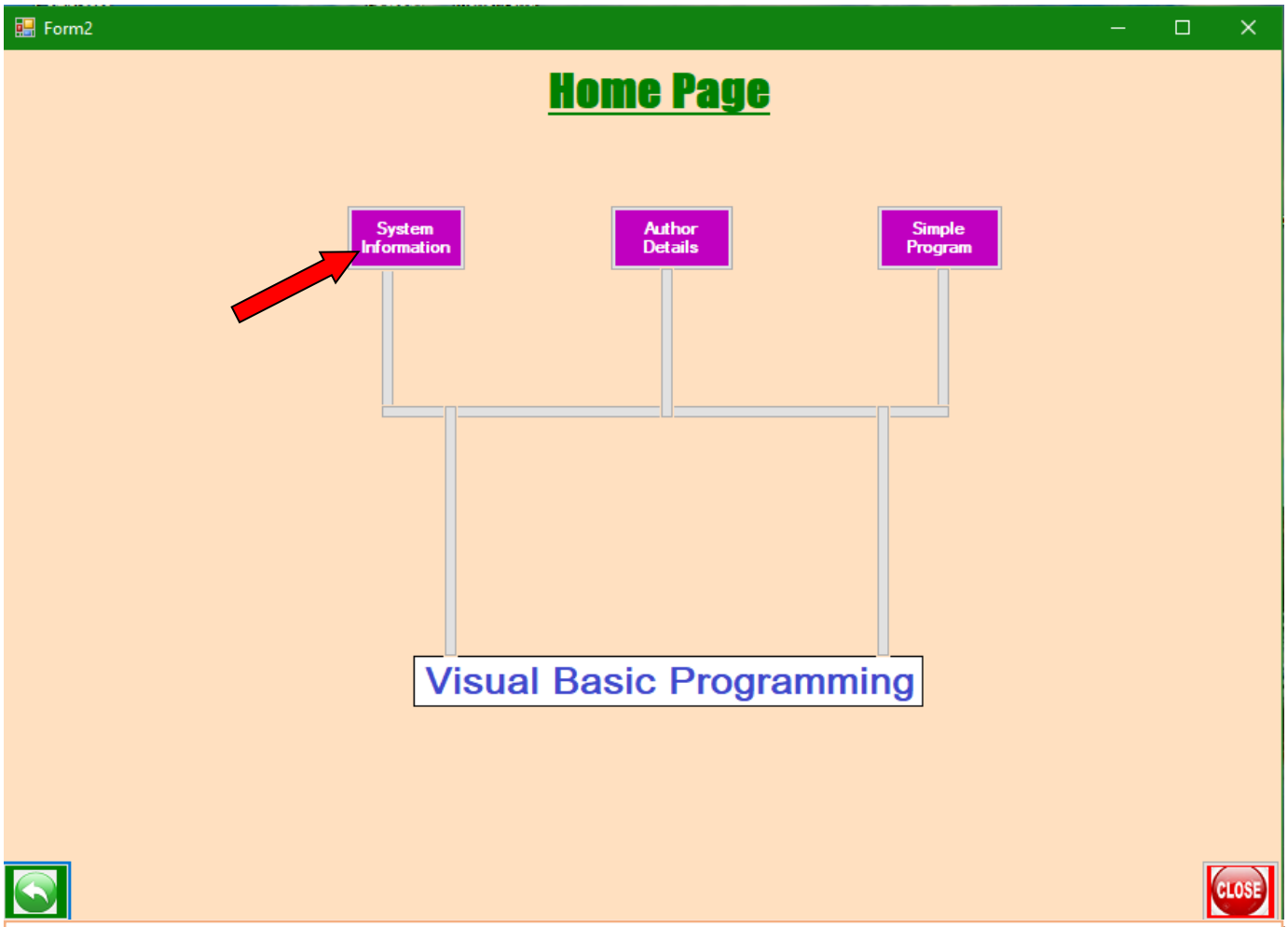
In this form, User can sign in the page by using valid User Name & Password

❖ A Sample .Net Coding For The Above form

```
   Public Class Form1

Private Sub Button1_Click(sender As System.Object, e As System.EventArgs) Handles Button1.Click
    If TextBox1.Text = "Visual" And
        TextBox2.Text = "12345" Then
        Form2.Show()
        Me.Hide()
    Else
        MsgBox("Access Denied")

    End If
End Sub

Private Function f2() As Object
    Throw New NotImplementedException
End Function
```

```
    Private Sub Form1_Load(sender As System.Object, e As System.EventArgs) Handles MyBase.Load

    End Sub
End Class
```

A Sample form for Home Page



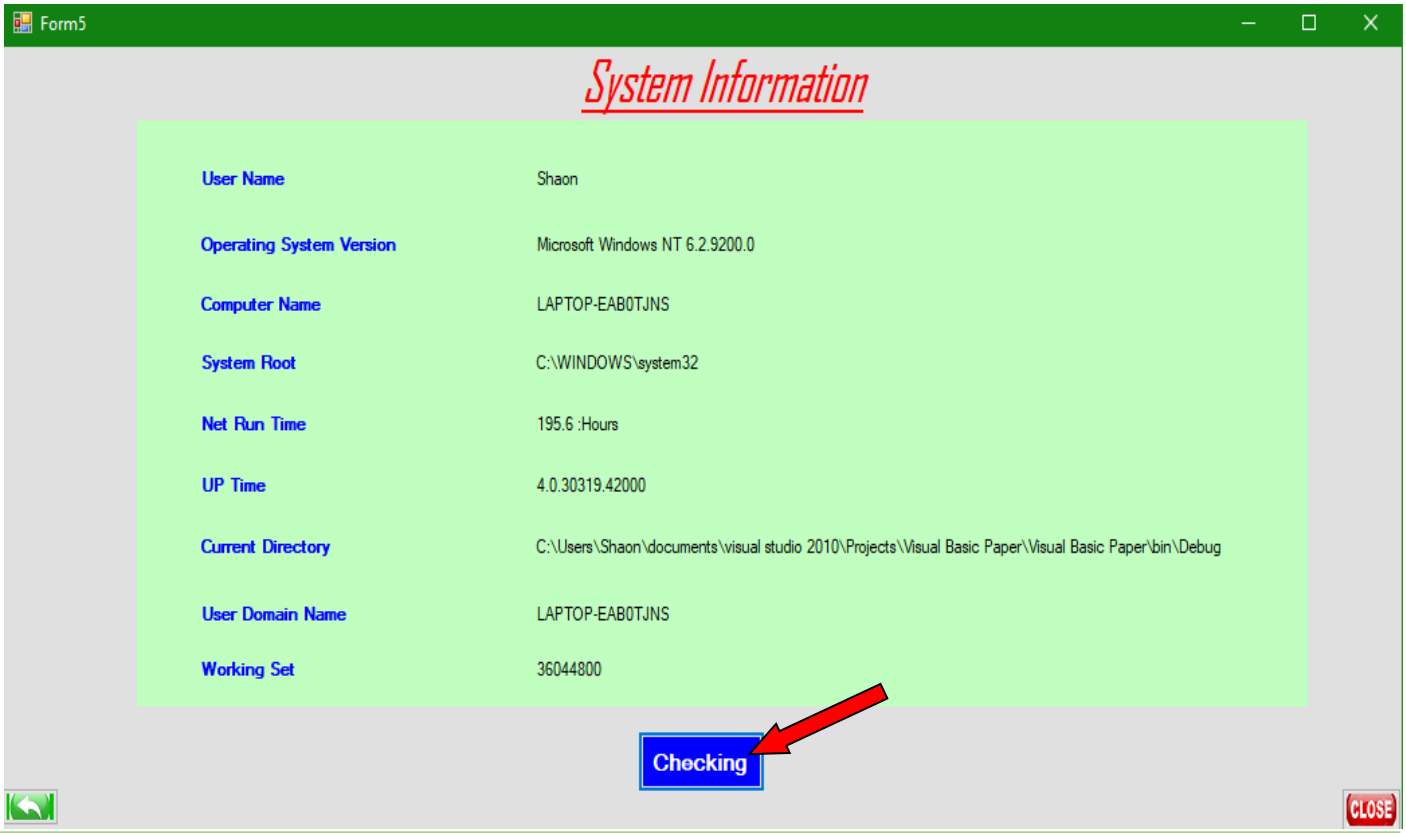
This is the Home Page. Here, User can access various type of information such as:-System information, Author's details & Simple VB Program. And also back to previous form and close from present form at any time.

❖ A Sample .Net Coding For The Above form

```
   Public Class Form2

    Private Sub Button1_Click(sender As System.Object, e As System.EventArgs)
        Form3.Show()
        Me.Hide()
    End Sub
```

```
    Private Sub Button2_Click(sender As System.Object, e As System.EventArgs)
        Form4.Show()
        Me.Hide()

    End Sub

    Private Sub Label1_Click(sender As System.Object, e As System.EventArgs) Handles Label1.Click

    End Sub

    Private Sub Button4_Click(sender As System.Object, e As System.EventArgs)
        Form4.Show()
        Me.Hide()

    End Sub

    Private Sub Button5_Click(sender As System.Object, e As System.EventArgs) Handles Button5.Click
        Form1.Show()
        Me.Hide()
 End Sub

    Private Sub PictureBox1_Click(sender As System.Object, e As System.EventArgs)
        Form3.Show()
        Me.Hide()
    End Sub

    Private Sub OvalShape1_Click(sender As System.Object, e As System.EventArgs)
        Form3.Show()
        Me.Hide()
    End Sub

    Private Sub OvalShape2_Click(sender As System.Object, e As System.EventArgs)
        Form4.Show()
        Me.Hide()
    End Sub

    Private Sub Button1_Click_1(sender As System.Object, e As System.EventArgs) Handles
Button1.Click
        Form3.Show()
        Me.Hide()
    End Sub

    Private Sub Button2_Click_1(sender As System.Object, e As System.EventArgs) Handles
Button2.Click
        Form4.Show()
        Me.Hide()
    End Sub

    Private Sub Button8_Click(sender As System.Object, e As System.EventArgs) Handles Button8.Click
        Form5.Show()
        Me.Hide()
    End Sub

    Private Sub RectangleShape1_Click(sender As System.Object, e As System.EventArgs) Handles
RectangleShape1.Click

    End Sub
End Class
```

A Sample form for System Information



Here, User can know the all Computer's System information. And also back to previous form and close from present form at any time.

❖ A Sample .Net Coding For The Above form

```
   Public Class Form5

Private Sub Label23_Click(sender As System.Object, e As System.EventArgs)

End Sub

Private Sub Label1_Click(sender As System.Object, e As System.EventArgs) Handles Label1.Click

End Sub

Private Sub Label2_Click(sender As System.Object, e As System.EventArgs) Handles Label2.Click

End Sub

Private Sub Label3_Click(sender As System.Object, e As System.EventArgs) Handles Label3.Click

End Sub

Private Sub Label4_Click(sender As System.Object, e As System.EventArgs) Handles Label4.Click

End Sub
```

```
    Private Sub Label5_Click(sender As System.Object, e As System.EventArgs) Handles Label5.Click

    End Sub

    Private Sub Label6_Click(sender As System.Object, e As System.EventArgs) Handles Label6.Click

    End Sub

    Private Sub Label8_Click(sender As System.Object, e As System.EventArgs) Handles Label8.Click

    End Sub

    Private Sub Label9_Click(sender As System.Object, e As System.EventArgs) Handles Label9.Click

    End Sub

    Private Sub Label10_Click(sender As System.Object, e As System.EventArgs)

    End Sub

    Private Sub Label13_Click(sender As System.Object, e As System.EventArgs) Handles Label13.Click

    End Sub

    Private Sub Label14_Click(sender As System.Object, e As System.EventArgs) Handles Label14.Click

    End Sub

    Private Sub Label15_Click(sender As System.Object, e As System.EventArgs) Handles Label15.Click

    End Sub

    Private Sub Label16_Click(sender As System.Object, e As System.EventArgs) Handles Label16.Click

    End Sub

    Private Sub Label17_Click(sender As System.Object, e As System.EventArgs) Handles Label17.Click

    End Sub

    Private Sub Label18_Click(sender As System.Object, e As System.EventArgs) Handles Label18.Click

    End Sub

    Private Sub Label19_Click(sender As System.Object, e As System.EventArgs) Handles Label19.Click

    End Sub

    Private Sub Label20_Click(sender As System.Object, e As System.EventArgs) Handles Label20.Click

    End Sub

    Private Sub Label21_Click(sender As System.Object, e As System.EventArgs) Handles Label21.Click

    End Sub

    Private Sub Label7_Click(sender As System.Object, e As System.EventArgs) Handles Label7.Click

    End Sub
```

```
    Private Sub Panel1_Paint(sender As System.Object, e As System.Windows.Forms.PaintEventArgs)
Handles Panel1.Paint

    End Sub

    Private Sub Button6_Click(sender As System.Object, e As System.EventArgs) Handles Button6.Click
        Form2.Show()
        Me.Hide()
    End Sub

    Private Sub Button5_Click(sender As System.Object, e As System.EventArgs) Handles Button5.Click
        End
    End Sub

    Private Sub Button1_Click(sender As System.Object, e As System.EventArgs) Handles Button1.Click
        Label13.Text = Environment.OSVersion.ToString
        Label14.Text = Environment.UserName.ToString
        Label15.Text = Environment.Version.ToString
        Label16.Text = Mid((Environment.TickCount / 3600000), 1, 5) & " :Hours"
        Label17.Text = Environment.SystemDirectory.ToString
        Label18.Text = Environment.MachineName.ToString
        Label19.Text = Environment.CurrentDirectory.ToString
        Label20.Text = Environment.UserDomainName.ToString
        Label21.Text = Environment.WorkingSet.ToString

        'For i As Integer = 0 To Environment.GetLogicalDrives.Length - 1
        '    Label23.Text += Environment.GetLogicalDrives(i)

        'Next
    End Sub
End Class
```

A Sample form for Author's Details

In this form, User can know about the Author and his qualification, Experience and how to contact with him.

❖ A Sample .Net Coding For The Above form

```
Public Class Form3

    Private Property Application As String

    Private Property experience As String

    Private Sub Button1_Click(sender As System.Object, e As System.EventArgs) Handles Button1.Click
        Dim button1 As String
        button1 = "CV"
        RichTextBox1.Text = "Name-Shaon Tewari                Father's Name-Santanu Tewari
Vill+P.O-Kapasaria  P.S-Mahishadal                Pincode-721628
Dist-Purba Medinipur,"
    End Sub

    Private Sub Button4_Click(sender As System.Object, e As System.EventArgs) Handles Button4.Click
```

```
        Form2.Show()
        Me.Hide()
    End Sub

    Private Sub Button2_Click(sender As System.Object, e As System.EventArgs) Handles Button2.Click
        Dim button2 As String
        button2 = "qualification"
        RichTextBox4.Text = "M.C.A, B.C.A & B.Ed"
    End Sub

    Private Sub RichTextBox1_TextChanged(sender As System.Object, e As System.EventArgs) Handles
RichTextBox1.TextChanged

    End Sub

    Private Sub RichTextBox2_TextChanged(sender As System.Object, e As System.EventArgs) Handles
RichTextBox2.TextChanged

    End Sub

    Private Sub Button6_Click(sender As System.Object, e As System.EventArgs) Handles Button6.Click
        Dim button6 As String
        button6 = "experience"
        RichTextBox2.Text = "At Present working as an Assistant Teacher of Higher Secondary School
since 20.12.2019                                                                    Former Part-
Time-Teacher at High School at H.S Level as a Computer Application Teacher from 02.06.2016 to
13.09.2019"
    End Sub

    Private Sub Button5_Click(sender As System.Object, e As System.EventArgs) Handles Button5.Click
        End
    End Sub

    Private Sub Form3_Load(sender As System.Object, e As System.EventArgs) Handles MyBase.Load

    End Sub

    Private Sub Button3_Click(sender As System.Object, e As System.EventArgs) Handles Button3.Click
        Dim button3 As String
        button3 = "communication"
        RichTextBox3.Text = "Mobile-+91-7872377233    Email-shaontewari1992@gmail.com
Whatsapp No-+91-9064440951"
    End Sub

    Private Sub Button7_Click(sender As System.Object, e As System.EventArgs)
        Form4.Show()
        Me.Hide()

    End Sub

    Private Function CV() As String
        Throw New NotImplementedException
    End Function

End Class
```

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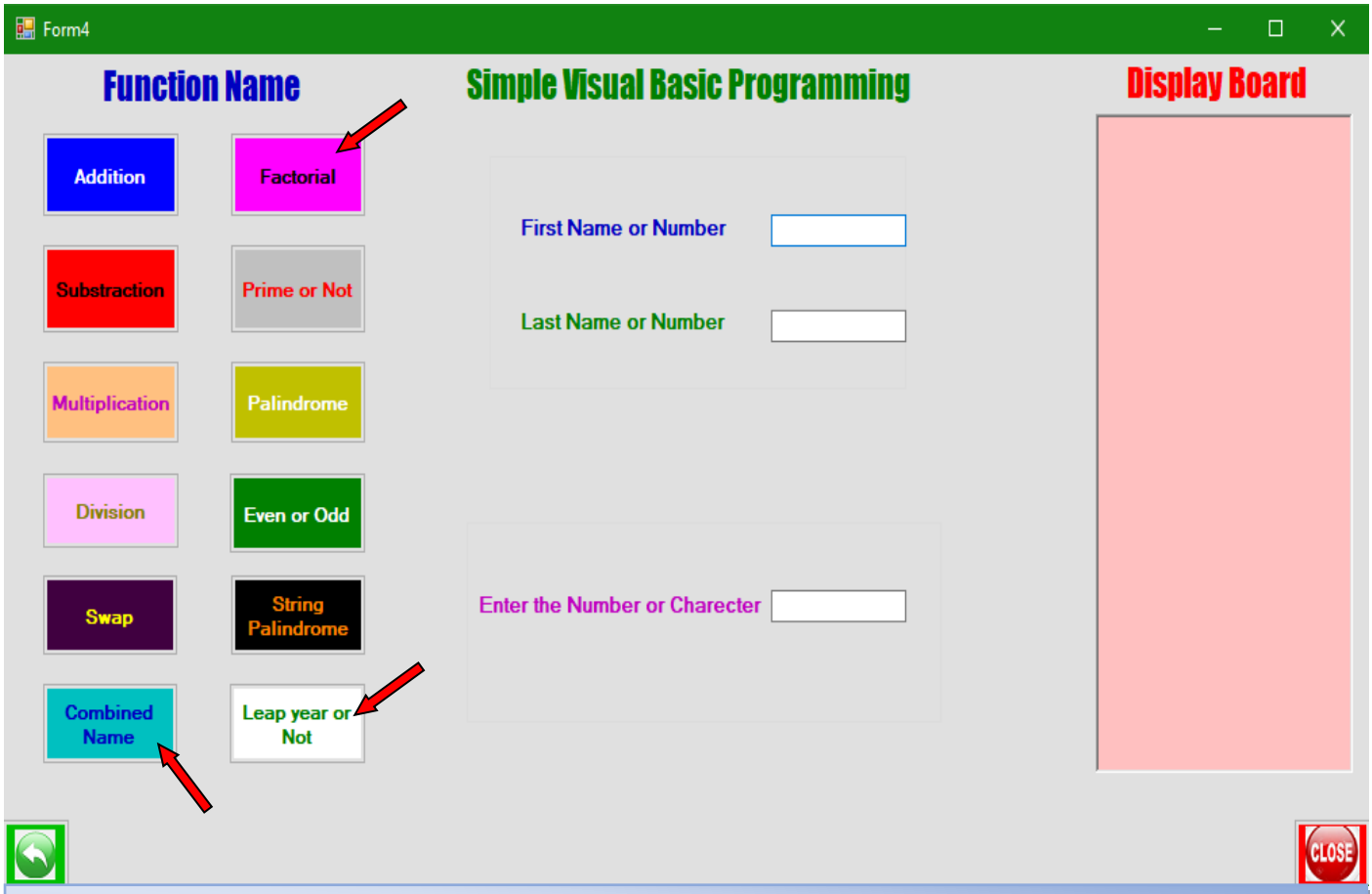
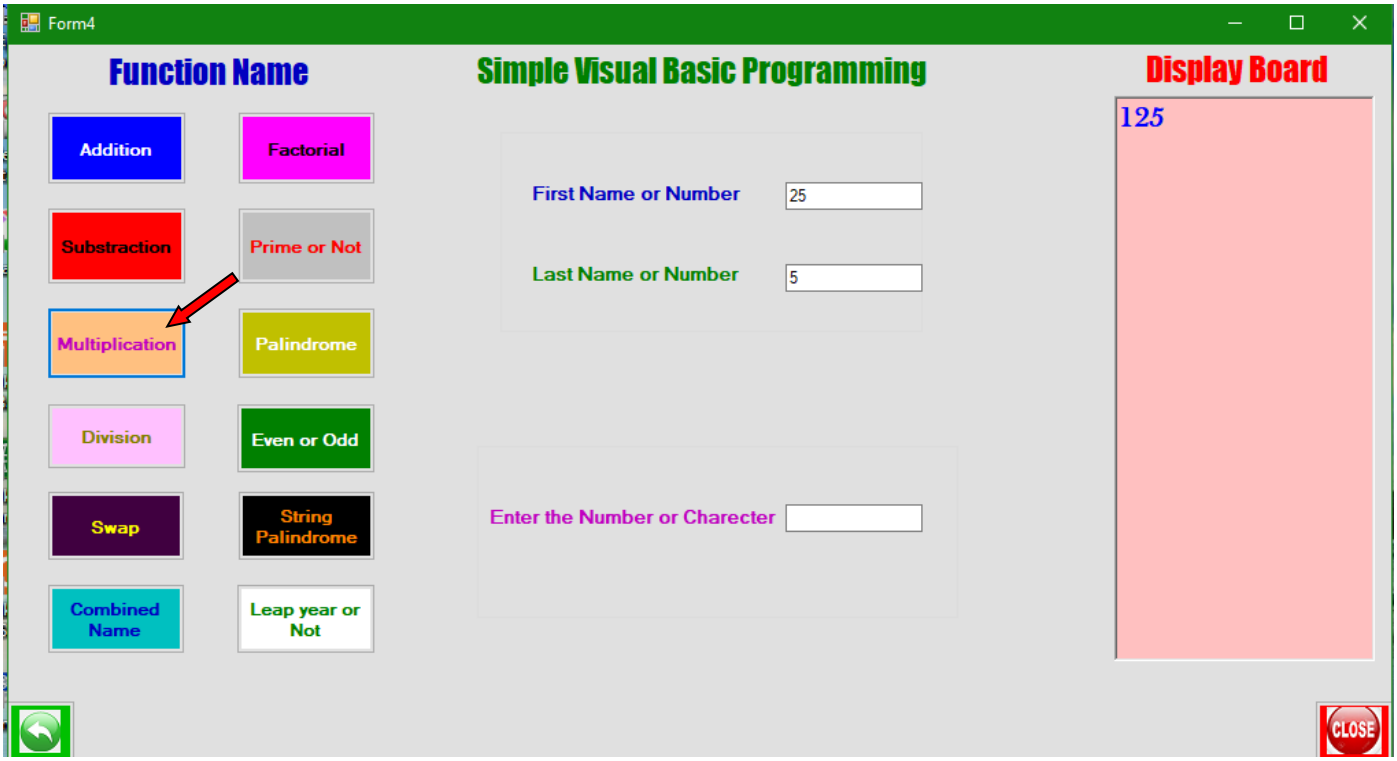
A Sample form for Simple Program



In this form, User can use various function. Here user can input the value into the textbox and then use any kind of function that are given. After that specific result will display on the display board. User also back to previous form and also close from present form at any time.

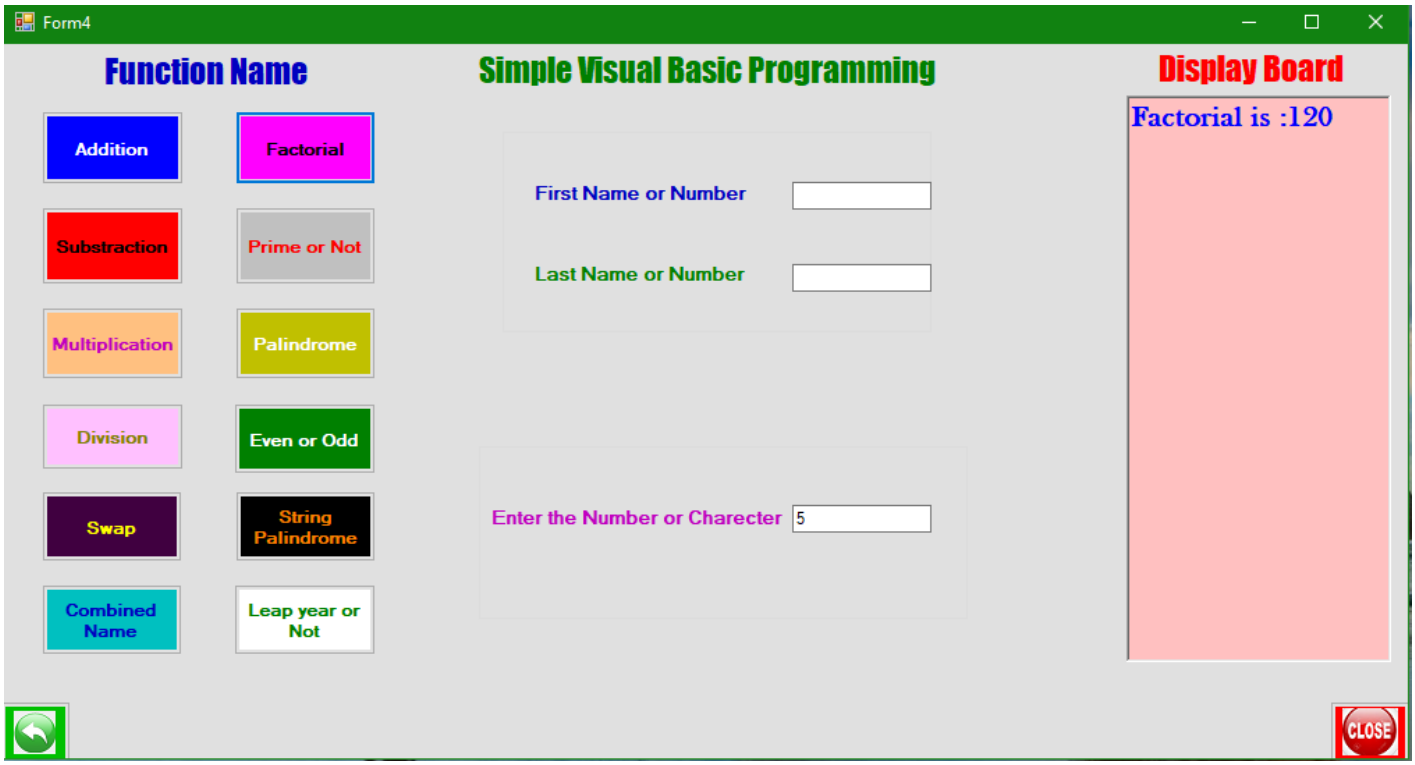
A Sample form for Multiplication Operation



❖ A Sample .Net Coding For The Above form

```
      Private Sub Button3_Click(sender As System.Object, e As System.EventArgs) Handles
Button3.Click
        Dim button3 As Integer
        Dim A, B, C As Integer
        A = TextBox1.Text
        B = TextBox2.Text
        C = A * B
        RichTextBox1.Text = C

    End Sub
```

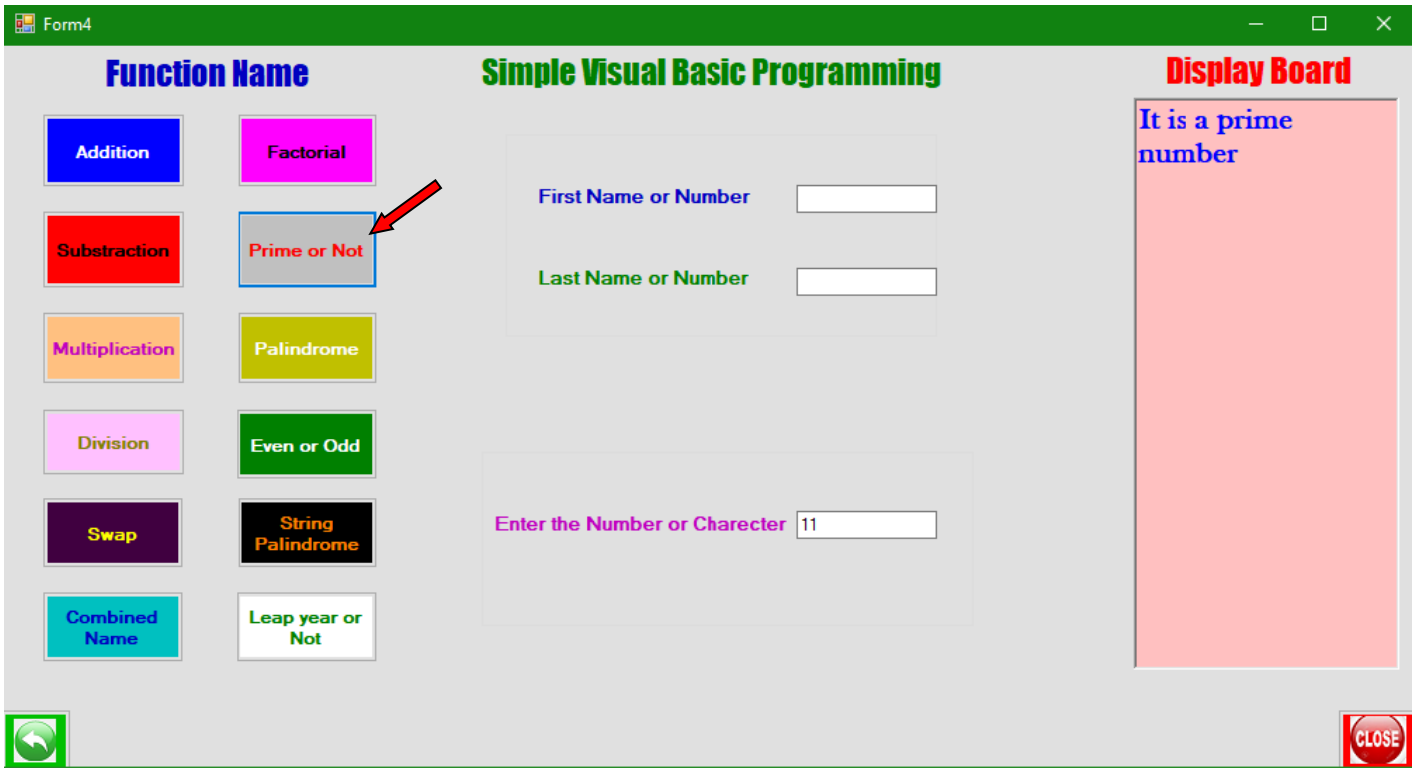
A Sample form for Factorial Operation

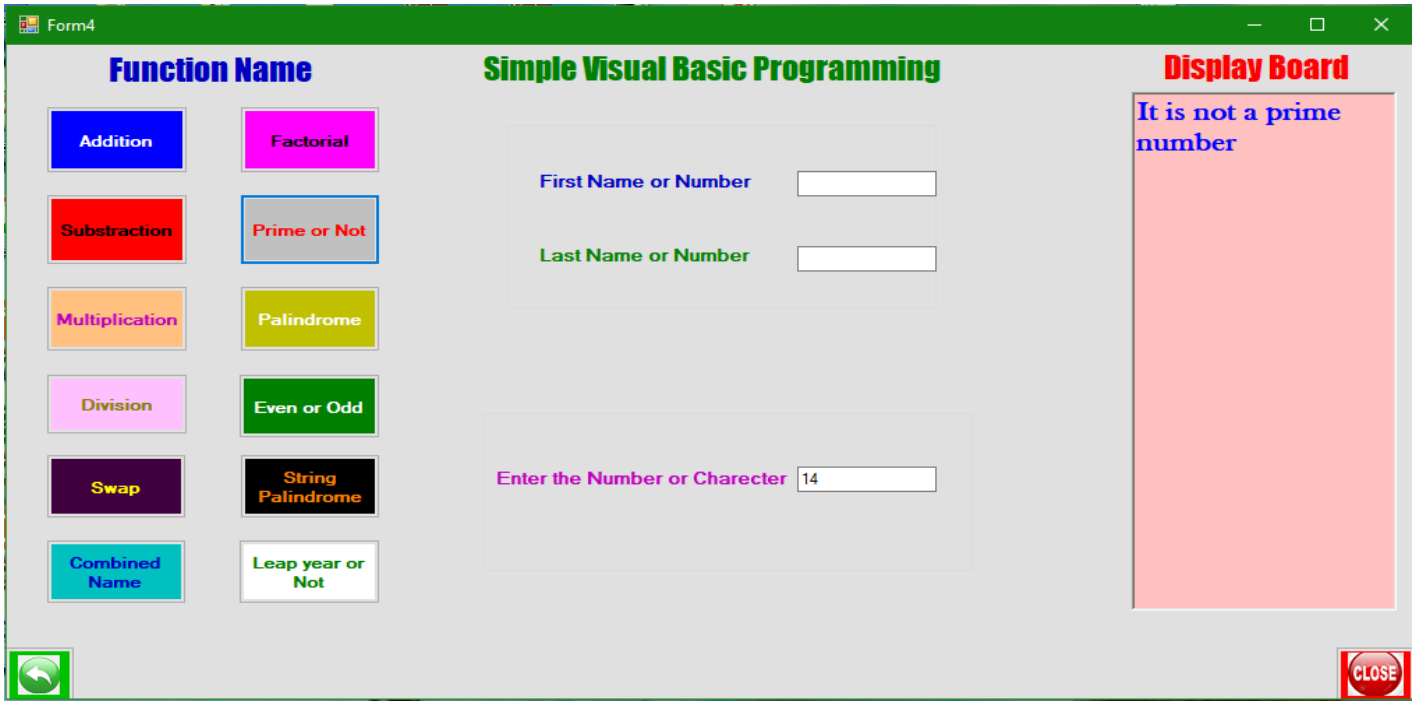


❖ A Sample .Net Coding For The Above form

```
Private Sub Button9_Click(sender As System.Object, e As System.EventArgs) Handles Button9.Click
        Dim n, f, i As Integer
        f = 1
        n = Val(TextBox3.Text)
        For i = 1 To n
            f = f * i
        Next
        RichTextBox1.Text = "Factorial is :" & f
    End Sub
```

A Sample form for Prime or Not Prime Operation



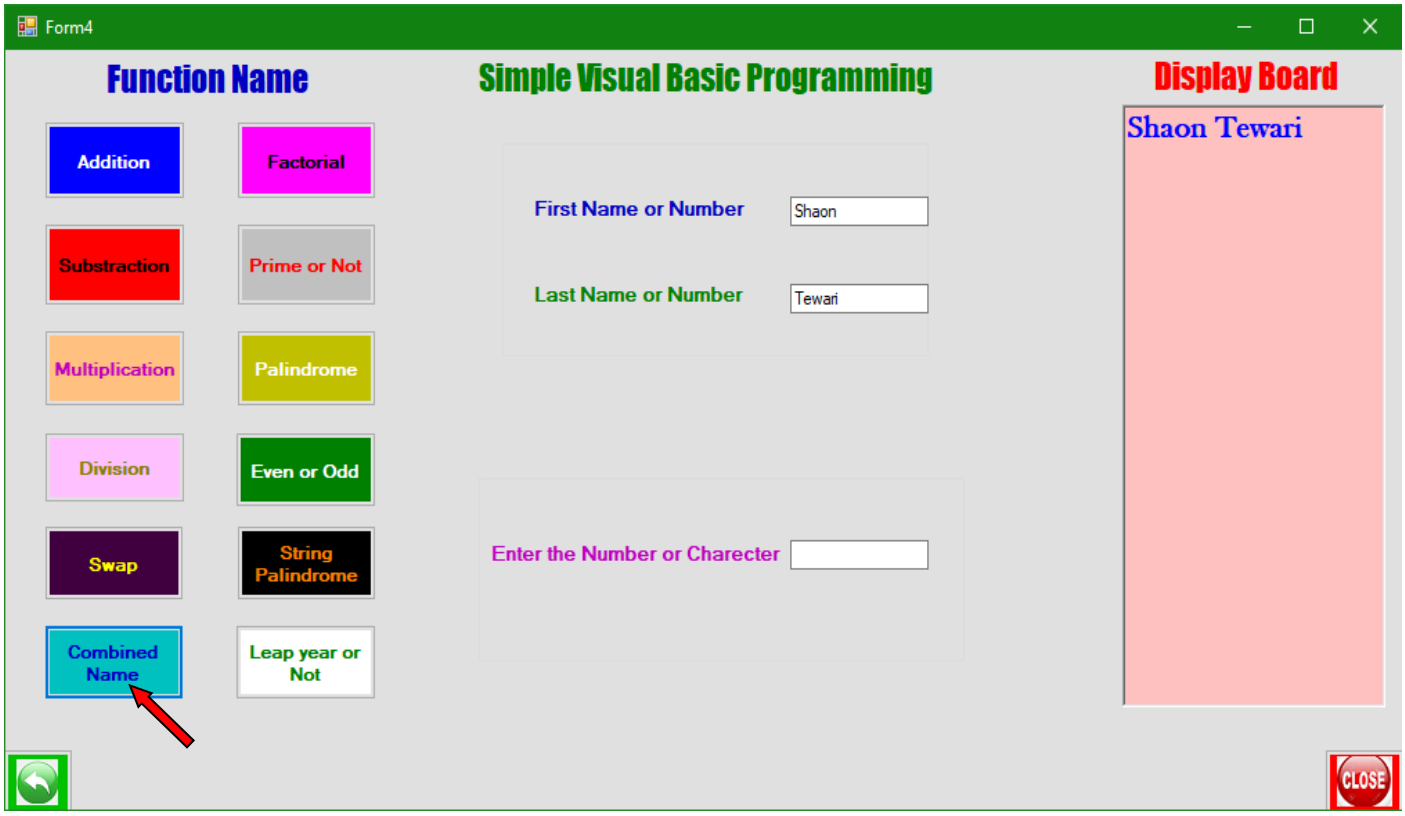


❖ A Sample .Net Coding For The Above

```
   Private Sub Button10_Click_1(sender As System.Object, e As System.EventArgs) Handles
Button10.Click
        Dim N, D As Single
```

```
        Dim T As String

        N = Val(TextBox3.Text)

        Select Case N
            Case Is < 2
                RichTextBox1.Text = "It is not a prime number"

            Case Is = 2
                RichTextBox1.Text = "It is a prime number"

            Case Is > 2
                D = 2
                Do
                    If N / D = Int(N / D) Then
                        RichTextBox1.Text = "It is not a prime number"
                        T = "Not Prime"
                        Exit Do
                    End If
                    D = D + 1

                Loop While D <= N - 1
                If T <> "Not Prime" Then
                    RichTextBox1.Text = "It is a prime number"
                End If
        End Select
    End Sub
```

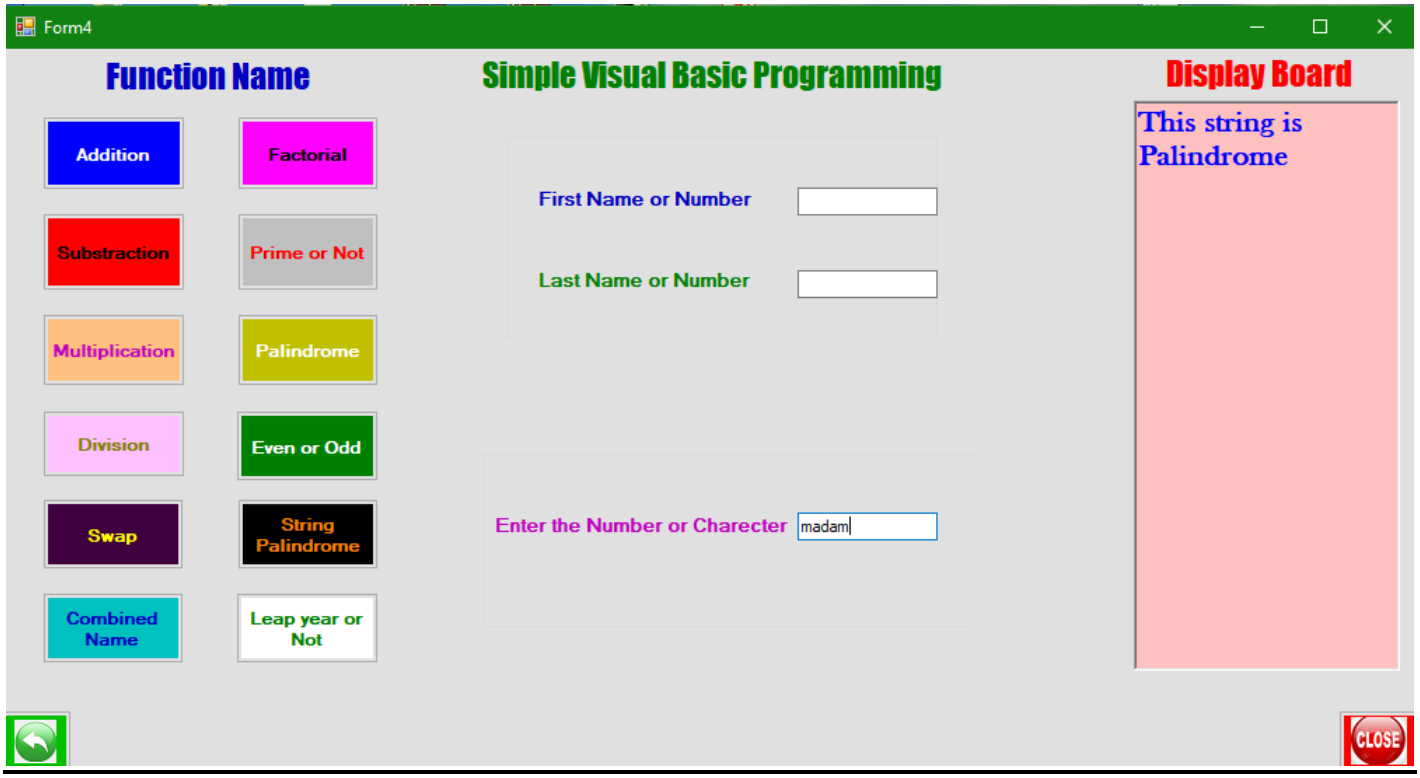
\A sample form for Combined Name Operation

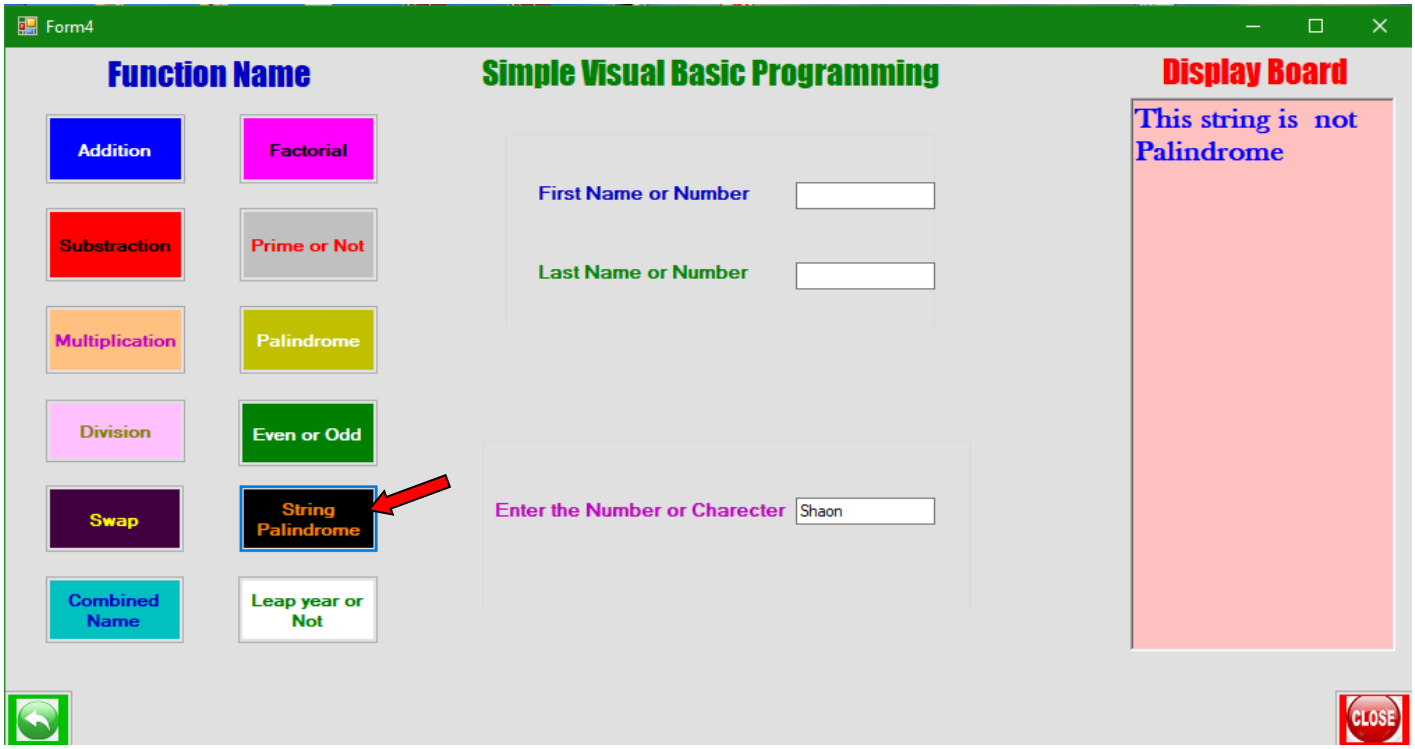


❖ **A Sample .Net Coding For The Above form**

```
       Private Sub Button14_Click(sender As System.Object, e As System.EventArgs) Handles
Button14.Click
        Dim FirstName As String
        Dim LastName As String
        Dim FullName As String
        FirstName = TextBox1.Text
        LastName = TextBox2.Text
        FullName = FirstName & " " & LastName
        RichTextBox1.Text = FullName
    End Sub
```

A Sample Form For String Palindrome Or Not Operation

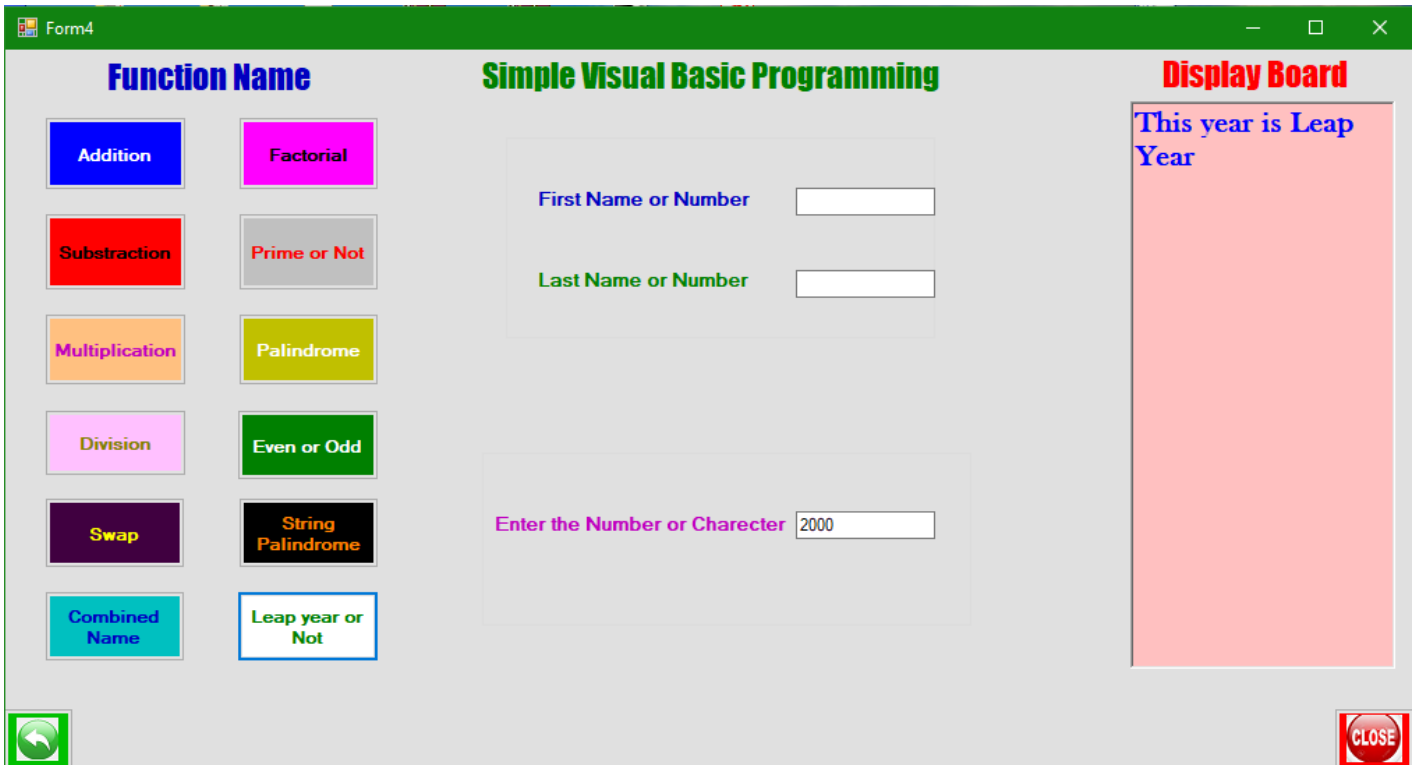


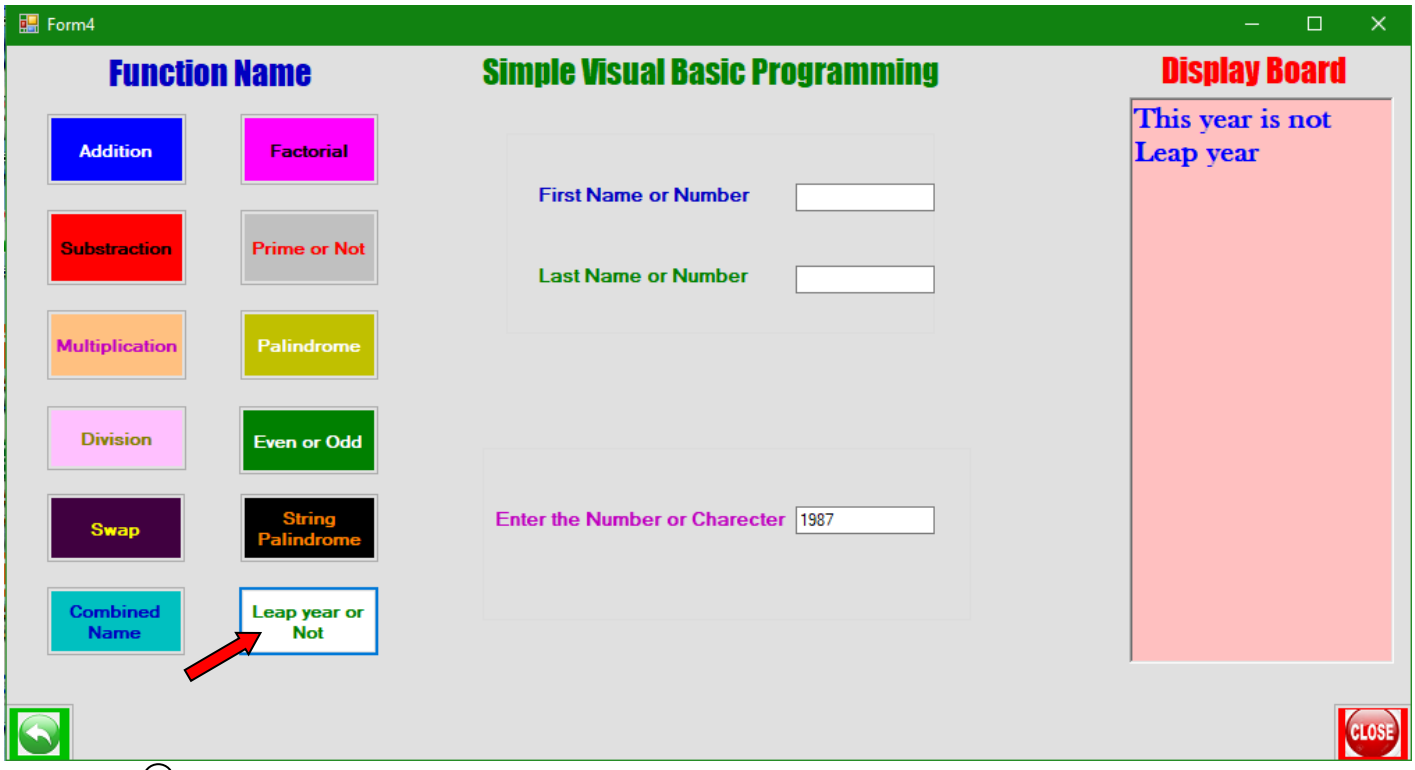


❖ A Sample .Net Coding For The Above form

```
Dim s As String
        Dim r As String
        s = TextBox3.Text
        r = StrReverse(s)
        If s = r Then
            RichTextBox1.Text = "This string is Palindrome"
        Else
            RichTextBox1.Text = "This string is  not Palindrome"
        End If
    End Sub
End Class
```

A Sample Form For Leap Year Or Not Operation



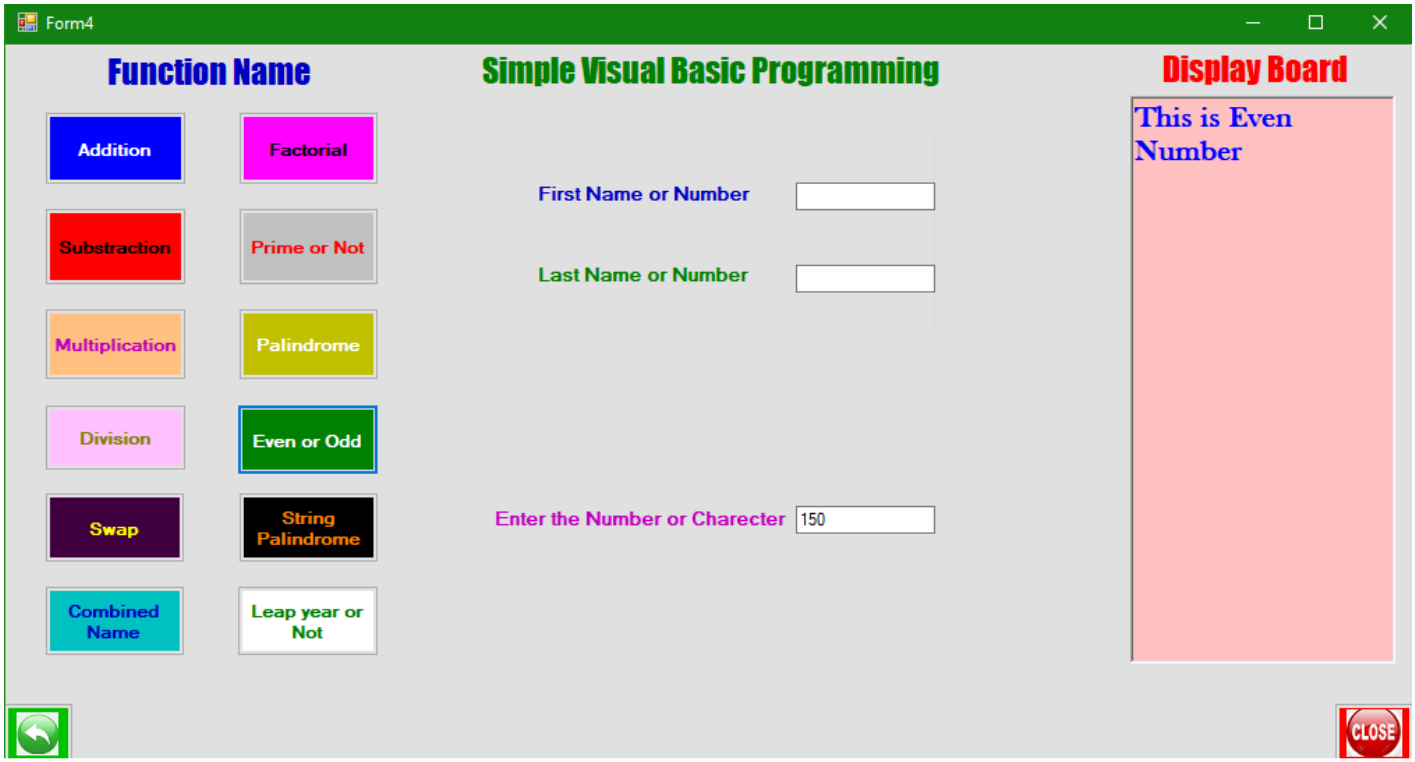


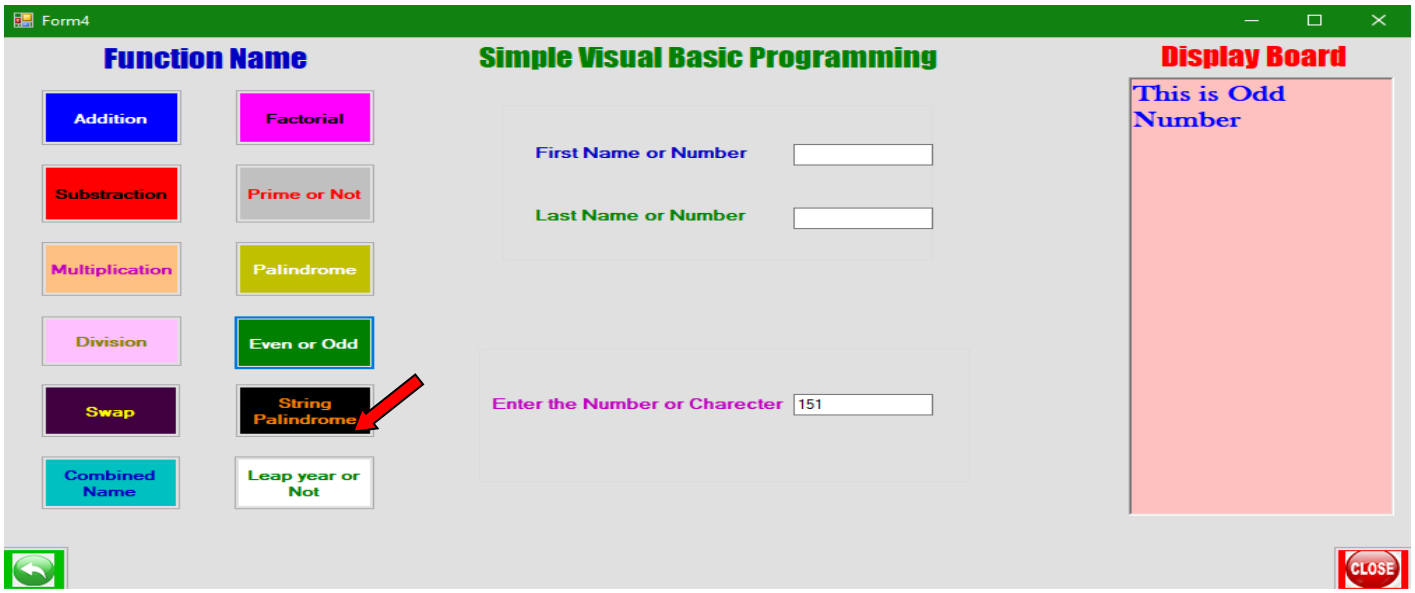
❖ A Sample .Net Coding For The Above form

```
Private Sub Button5_Click_1(sender As System.Object, e As System.EventArgs) Handles Button5.Click
        Dim Button5 As Integer
```

```
        If TextBox3.Text Mod 100 = 0 Then
        End If
        If TextBox3.Text Mod 400 = 0 Then
            RichTextBox1.Text = "This year is Leap Year"
        Else
            RichTextBox1.Text = "This year is not Leap year"
        End If
    End Sub
```

A Sample Form For Even Or Odd Operation





❖ **A Sample .Net Coding For The Above form**

```
Private Sub Button7_Click(sender As System.Object, e As System.EventArgs) Handles Button7.Click
        Dim Button7 As Integer
        If TextBox3.Text Mod 2 = 0 Then
            RichTextBox1.Text = "This is Even Number"
        Else
            RichTextBox1.Text = "This is Odd Number"
        End If

    End Sub
```

IV. Conclusion

After reading this review, we should know thatVB.NET is important to develop any webpage. We realize that VB.NET is not the only language that works with the Framework, Visual C#, Visual C++ also make use of the functionality that is offered. For some projects, C# is more suitable than VB and vice versa as each interacts with the .NET framework in different ways in different purpose. There is no common consensus on the language that is best, although all programmers seem to have an opinion. The choice of language ultimately comes down to how easy the syntax is to use and how it is user friendly or how this code are used easily in any software development. An application developed in VB.NET may require more code than any application like C++ or Java. But if it is easier to understand and therefore quicker to code in, then this becomes irrelevant.

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