

### VIII. Resources required

Sr. No.	Name of Resource	Specification	Quantity	Remarks
1	Hardware: Computer System	Computer (i3-15 preferable), RAM minimum 2 GB and onwards	As per batch size	For all Experiments
2	Operating system	Windows 7 or Later Version/LINUX version 5.0 or Later Version		
3	Software	Microsoft Visual Studio 2012 or later.		

### IX. Precautions

1. Check the basic hardware and software requirement.
2. Use only licensed software
3. Follow the instructions as given in the instruction guide of the product.

Sr. No.	Name of Resource	Specification
1	Computer System with broad specifications	i3 , Ram 2GB
2	Software	Visual Studio 2017
3	Any other resource used	

### X. Resources used

.....Visual studio 2017.....

### XI. Practical Related Questions

*Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.*

1. Differentiate between VB.Net & VB.
2. How many languages are supported by .Net Framework?

(Space for answers)

①

VB

VB.NET

① VB is backward compatible.	① VB.NET is not backward compatible.
② Interpreted.	② Compiled language.
③ Compiler language. Exception handling by exception handling by on error Goto.	③ Exception handling by Try & Catch.
④ Cannot develop multi-threaded application.	④ Can develop multi-threaded application.

②

C# F# C++ Java is used on client side

VB JSP JavaScript ASP VBScript

Standardized SmallTalk

Scheme Python

ADA Cobol Fortran COBOL COBOL

Component Physical

Visual Basic VB VB VB

Perl

This language are supported by .Net

framework.

XII. Exercise (Teacher must assign separate exercise to group of 3-4 student)

1. Illustrate the use of Just in Time compiler in VB.net
2. Define user defined namespaces and write procedures.
3. Write the various system requirements for Installation of VB.Net

(Space for answers)

1>

The just in time compiler is an important element of CLR, which leads MSIL on target machine for execution. The MSIL is stored in .NET assemblies after the developer has compiled the code written in only .Net compliant Programming language such as Visual Basic or C#.

2>

They allow to create a System to arrange your code each namespace has a name, and in divider to generate that the names of different namespace are different procedure int a piece of code in a large program. It is a unit of code called class between the Sub and End Sub statement one also function or Sub function Statement.

(3)

Processor: 2.86 GHz Intel Pentium Dual Core

RAM: 512 mb

Display: 10.4" LCD

HDD: 1.8 GB

OS: Windows XP Professional SP2

VRAM

Others: Microsoft Internet Explorer 5.0 for installation

Microsoft .NET Framework 1.1

Microsoft Visual Studio .NET 2003

Microsoft Office 2003

Microsoft Project 2003

Microsoft Visio 2003

Microsoft FrontPage 2003

Microsoft Word 2003

Microsoft Excel 2003

Microsoft Access 2003

Microsoft Power Point 2003

Microsoft Publisher 2003

Microsoft Project Server 2003

Microsoft SharePoint Portal Server 2003

Microsoft SharePoint Team Services 2003

Microsoft SharePoint Foundation 2007

Microsoft SharePoint Server 2007

Microsoft SharePoint Designer 2007

Microsoft SharePoint Foundation 2010

Microsoft SharePoint Server 2010

Microsoft SharePoint Designer 2010

Microsoft SharePoint Foundation 2013

Microsoft SharePoint Server 2013

Microsoft SharePoint Designer 2013

Microsoft SharePoint Foundation 2016

Microsoft SharePoint Server 2016

Microsoft SharePoint Designer 2016

Microsoft SharePoint Foundation 2019

Microsoft SharePoint Server 2019

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Microsoft SharePoint Foundation 2023

Microsoft SharePoint Server 2023

Microsoft SharePoint Designer 2023

Microsoft SharePoint Foundation 2025

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Microsoft SharePoint Server 2029

Microsoft SharePoint Designer 2029

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Microsoft SharePoint Foundation 2083

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Microsoft SharePoint Designer 2083

Microsoft SharePoint Foundation 2085

Microsoft SharePoint Server 2085

Microsoft SharePoint Designer 2085

Microsoft SharePoint Foundation 2087

Microsoft SharePoint Server 2087

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... will be flagged as an error with the note, "Color is ambiguous" and .NET will point out that both namespaces contain an object with that name. This kind of error is called a "name collision."

This is the real reason for "namespaces" and it's also the way namespaces are used in other technologies (such as XML). Namespaces make it possible to use the same object name, such as Color, when the name fits and still keep things organized. You could define a Color object in your own code and keep it distinct from the ones in .NET (or the code of other programmers).

Namespace MyColor

    Public Class Color

        Sub Color()

            'Do something

        End Sub

    End Class

End Namespace

You can also use the Color object somewhere else in your program like this:

Dim c As New MyColor.Color

c.Color()

Before getting into some of the other features, be aware that every project is contained in a namespace. VB.NET uses the name of your project (WindowsApplication1 for a standard forms application if you don't change it) as the default namespace.

### VIII. Resources required (Additional)

.....Windows 10..... Processor..... 4 G.B. RAM

### IX. Precautions

1. Save the program in specific directory / folder.
2. Follow safety practices.

### X. Resources used (Additional)

.....Visual Studio 2017

### XI. Program Code: (Teacher must assign separate program statement to group of 3-4 student)

Write a program using user defined and existing namespaces in VB.Net.

Namespace Project1

    Namespace Form1

        Class Group1

    Public Event CalculOp(By Val

        By Val y As Integer)

```
Public Function Diff(Byval a AS Integer, Byval b AS Integer)
AS Integer
    Return a-b
End Function

Public Function Prod (Byval a AS Integer, Byval b AS Integer)
AS Long
    Return a+b
End Function
End Namespace
Class GroupOp
    Public Function Adun(Byval a AS Integer, Byval b AS Integer)
AS Integer
        Return a+b
    End Function
    Public Function Impc(Byval a AS Integer, Byval b AS Integer)
AS Double
        Return a/b
    End Function
End Class
End Namespace
Module Module1
    Sub main()
        Dim calc As NamespaceAPP.ProjectNOU.GroupOp
        Calc = New NamespaceAPP.ProjectNOU.GroupOp
        MsgBox ("4+6" & calc.adun(4,6))
        Dim calcuno As NamespaceAPP.ProjectNOU.FormulaOp
        MsgBox ("4+6" & calcuno.prod (4,6))
    End Sub
End Module
```

## XII. Results (Output of the Program)

### XIII. Practical Related Questions

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. Differentiate between namespace & assembly
2. Compare between option strict & option explicit

(Space for answers)

1>

NameSpace can be used to create Assembly.

① A namespace provides a fundamental unit of logical code grouping.

① An assembly provides a fundamental unit of physical code grouping.

② It is a collection of names.

② It is output code unit.

③ They form the logical boundary for a grouping of classes.

③ Assemblies contain code.

2>

Option Strict: VB.NET generally allows implicit conversion of one datatype to another. Data loss can occur when the value of one datatype is converted to a datatype with less precision or smaller capacity, however, a runtime error will occur if data will be lost in such a conversion.

Options explicit i.e. when options explicitly appears in a file, then complicity declare all variables using the Dim, Private, Public, or Dim Statement. It is good to use Dim statement (variable name) on every occasion at compile time.

1. Namespace  
2. Module  
3. Sub & Function  
4. Class & Structure  
5. Object  
6. Property  
7. Event  
8. Delegate  
9. Interface  
10. Friend

#### XIV. Exercise (Teacher must assign separate exercise to group of 3-4 student)

1. List namespaces in VB.net?
2. Write a program to implement the namespace Student in your VB.net Application.

(Space for answers)

- 1) Classes of objects  
 2) Modules  
 3) Integer  
 4) Dictionaries  
 5) Enumeration

## 2) Namespace College

```

Namespace Student
    Class Adel
        Public Function S_memoado()
            Console.WriteLine ("Adding Student to College")
            Using S_memoad
                End Function
            End Class
        End Namespace
    End Namespace

```

**Types of Icons:-**

MEMBER	ICON
Asterisk	Information Icon
Information	Information Icon
Error	Error Icon
Hand	Error Icon
Stop	Error Icon
Exclamation	Exclamation Icon
Warning	Exclamation Icon
Question	Question Icon
None	Will not display any icon

**Types of Buttons:-**

MEMBER	DESCRIPTION
AbortRetryIgnore	Abort, Retry, and Ignore buttons
OK	an OK button
OKCancel	OK and Cancel buttons
RetryCancel	Retry and Cancel buttons
YesNo	Yes and No buttons
YesNoCancel	Yes, No, and Cancel buttons

**VIII. Resources required (Additional)**

.....Windows 10.....  
 .....1.93 PROCESSOR.....  
 .....4GB RAM.....  
 .....Core i3 Processor.....

**IX. Precautions**

1. Save the program in specific directory / folder.
2. Follow safety practices.

**X. Resources used (Additional)**

.....Visual Studio 2017.....  
 .....Microsoft Visual Studio 2017.....

**XI. Program Code: (Teacher must assign separate program statement to group of 3-4 student)**

Write a program using MessageBox & Arithmetic Expressions.

→ ~~Module Operator~~ Sub main()  
 Dim a As Integer = 21  
 Dim b As Integer = 20

```
Dim P As Integer  
Dim C As Integer  
Dim d As Integer
```

$$C = a + b$$

```
Console.WriteLine ("Line 1. Value of C is 203".c)
```

$$C = a - b$$

```
Console.WriteLine ("Line 2. Value of C is 203".c)
```

$$C = a * b$$

```
Console.WriteLine ("Line 3. Value of C is 203".c)
```

$$C = a / b$$

```
Console.WriteLine ("Line 4. Value of C is 203".c)
```

$$C = a \ b$$

```
Console.WriteLine ("Line 5. Value of C is 203".c)
```

$$C = a \ mod \ b$$

```
Console.WriteLine ("Line 6. Value of C is 203".c)
```

$$C = b ^ p$$

```
Console.WriteLine ("Line 7. Value of C is 203".c)
```

```
Console.ReadLine()
```

End Sub

End Module

### XII. Results (Output of the Program)

Line 1: Value of C is 21

Line 2: Value of C is "

Line 3: Value of C is 20

Line 4: Value of C is 21

Line 5: Value of C is

Line 6: Value of C is

Line 7: Value of C is

### XIII. Practical Related Questions

**Note:** Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO:

1. Write the difference between MsgBox() & ErrorProvider Control.

2. Describe any four types of MsgBox() window

(Space for answers)

2)

Buttons: Message Box can have Standard 'OK' or 'Cancel' buttons or they can have a 'Yes' 'No' 'Cancel' Configuration or a Number of clickbutton only one primary button scheme can be used for message box.

Icons: A message box may have no icons or may have one you shouldn't specify a message box to have multiple icons.

The different icons according to message

Modality: Finally the message box can be defined as being Model, Modelless or System Model, by using another identifier and only works of parent window handle was specified @ Variance "Other option"

Indirect Dialogs Boxes: When defining a dialog box indirectly we need to fill about its Structure and Paths defined in place of a resources identifiers.

.....Msg.Box()

- 1) Message box is denoted as the msgbox(). It has the records of all the recorded message in the system.
- 2) It has made easier for keeping records in case of accounts
- 3) Msgbox is displayed by the user itself.
- 4) Syntax:-  
Msgbox([prompt],[button]  
[title],[helpfile]  
[context])

Error\_Provides\_Control

- 1) An error provided control generates CreateWith error a wrong update made.
- 2) It has made easier to detect the error in records.
- 3) It is used to specify name of Error provider Control.
- 4) Syntax:-  
Error\_Provider1.Set  
Error(Control-Name,  
"Error message")

**V. Exercise (Teacher must assign separate exercise to group of A & student)**

1. Implement the program to generate result of any arithmetic operation using MsgBox().
2. Write a program using InputBox(), MsgBox() & perform various arithmetic expression.

(Space for answers)

.....de...in...between...Private...Sub...Sub...End...End

.....End...Sub:

Dim x As Integer,

Dim z As Integer,

x = 2

z = 3

msg Box (x + z),

vb.Only...Smly,

"Addition Operator"

Clicks...on...Save...button

We...InputBox...to...get...Input

Sub EnterNumber()

Dim num As Integer

num = InputBox("Enter number under 500")  
"Enter number in digits",

num = num \* 2

msg Box ("The number multiplied by two  
is " & num)

End Sub

## Practical No 4: Implement a program for If-else control structures in VB.NET.

- I. Practical Significance**  
Dive into VB .NET's control structures and learn how to control the order of events in your programs. Study the basics of the If and If-else statements.

- II. Relevant Program Outcomes (POs)**
- **Basic knowledge:** Apply knowledge of mathematics and engineering as it applies to the field of computer software and hardware.
  - **Discipline knowledge:** To apply knowledge of computer engineering field to solve core and applied engineering problems.
  - **Experiments and practice:** Able to plan and perform experiments and practices with its results to solve computer engineering problems.
  - **Engineering tools:** Formulate and solve problems related to computer engineering field using appropriate techniques/tools.

**III. Competency and Practical skills**

This practical expects to develop the following skills in the student.

**Develop VB.NET programs to solve computer group related problems.**

1. Write a VB.NET program to use of if-else statements.
2. Compile Debug Save the 'VB.NET' program.

**IV. Relevant Course Outcome(s)**

- Develop GUI Application using Form Controls and its events

**V. Practical Outcome (POs)**

- Develop programs to demonstrate use of IF, IF-else Control structures in VB.net.

**VI. Relevant Affective domain related Outcome(s)**

1. Follow safety practice
2. Follow ethical practices

**VII. Minimum Theoretical Background**

It is conditional statement which executes a group of statements depending on the value of an expression.

```
If condition [ Then]
    [ statements ]
    [ Elseif condition [ Then ]
        [ statements ] ]
    [ Else
        [ elsestatements ] ]
End If
```

**VIII. Resources required (Additional)**

window 10

i3 processor

4 GB RAM

**IX. Precautions**

1. Save the program in specific directory / folder.
2. Follow safety practices.

**X. Resources used (Additional)**

.....Visual Studio 2010.....

.....Windows 7.....

.....MS Office 2010.....

.....MS Word 2010.....

**XI. Program Code(Teacher must assign a separate program to a group of 3-4 students)**

Write a program using if-else statement.

~~module declarations~~ ~~using System;~~ ~~using System.Collections.Generic;~~ ~~using System.Linq;~~ ~~using System.Text;~~ ~~using System.Threading.Tasks;~~ ~~using System.Windows.Forms;~~

~~Sub Main()~~

~~Local variable declaration~~ ~~int a = 100;~~ ~~int b = 200;~~

~~Dim a As Integer = 100~~ ~~Dim b As Integer = 200~~

~~"Check whether a is greater than b or not"~~

~~If (a > b) Then~~ ~~Console.WriteLine("a is greater than b")~~

~~' If condition is true then print the~~

~~Console.WriteLine("value of a is 100");~~

~~Else If (a < b) Then~~ ~~Console.WriteLine("a is less than b")~~

~~' If else if condition is true~~

~~Console.WriteLine("value of a is 100");~~

~~Else~~

~~Console.WriteLine("if neither of the conditions is true");~~

~~Console.WriteLine("None of the value is matching");~~

~~End If~~ ~~End If~~ ~~End If~~

~~Console.WriteLine("exact value of a is 100");~~

~~Console.ReadLine();~~ ~~End Sub~~

~~End Sub~~

~~End Module~~

~~End Sub~~

~~End If~~

~~End If~~

~~End If~~

## XII. Results (Output of the Program)

value of a is 10

## XIII. Practical Related Questions

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. Implement the program for finding greatest of three numbers.
2. Implement the program using if-else statement to find the number is even or odd.

(Space for answers)

```
Function IsOdd(Number As Integer) As Boolean
    Dim tNum As Integer
    tNum = Right(Number - 1)
    If tNum = 0 Or tNum = 2 Or tNum = 4 Or
    tNum = 6 Or tNum = 8 Or tNum = 10 Then
        IsOdd = False
    Else
        IsOdd = True
    End If
End Function

2] Function IsOdd(Number As Integer) As Boolean
    Dim tNum As Integer
    If tNum = 0 Or tNum = 2 Or tNum = 4 Or
    tNum = 6 Or tNum = 8 Or tNum = 10 Then
        IsOdd = False
    Else
        IsOdd = True
    End If
End Function
```

```

a = -1.0
If (i > 0) Then
    If (a > 0) Then
        Console.WriteLine("Here I am !!!!")
    Else
        Console.WriteLine("No here I am ??")
    End If
End If
Console.ReadKey()
End Sub
End Module

```

(Space for answers)

- Q. 1. ~~Write~~  
 2. Here I am !!!  
 Actually here I am ??

```

1> Public Class Percentage
Private Sub Button1_Click(ByVal sender As System.EventArgs)
    Handles Button1.Click
Dim Percentage As Integer
Percentage = 80
If (Percentage > 75) Then
    Console.WriteLine ("Distinction")
ElseIf (Percentage > 60) And (Percentage <= 75) Then
    Console.WriteLine ("First class")
ElseIf (Percentage > 40) And (Percentage <= 60) Then
    Console.WriteLine ("Second class")
Else
    Console.WriteLine ("fail")
End If
End Sub
End Class

```

## **VIII. Resources required (Additional)**

.....window10.....  
.....i3 processor.....  
.....4GB RAM.....

## **IX. Precautions.**

1. Save the program in specific directory / folder.
  2. Follow safety practices.

## X. Resources used (Additional)

Visual Studio 2017

**XI. Program Code:** (Teacher must assign separate program statement to group of 3-4 student)

**Q11.** Write a program using Select Case statement in VB.Net.

```

module decisions
    Sub main()
        ' local variable definition
        Dim grade As Char
        grade = "B"
        Select grade
            Case "A"
                Console.WriteLine("Excellent!")
            Case "B", "C"
                Console.WriteLine("Well done!")
            Case "D"
                Console.WriteLine("You passed")
            Case "F"
                Console.WriteLine("Better try again!")
            Case Else
                Console.WriteLine("Invalid grade")
        End Select
        Console.WriteLine("Your grade is " & grade)
    End Sub
End module

```

## XII. Results (Output of the Program)

..... well done .....  
..... Your grade is B .....

Grade: B  
Date: 2019-01-18  
Page No. 1

## XIII. Practical Related Questions

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. Write the use of Select Case statement
2. Draw the flowchart for nested Select Case statement

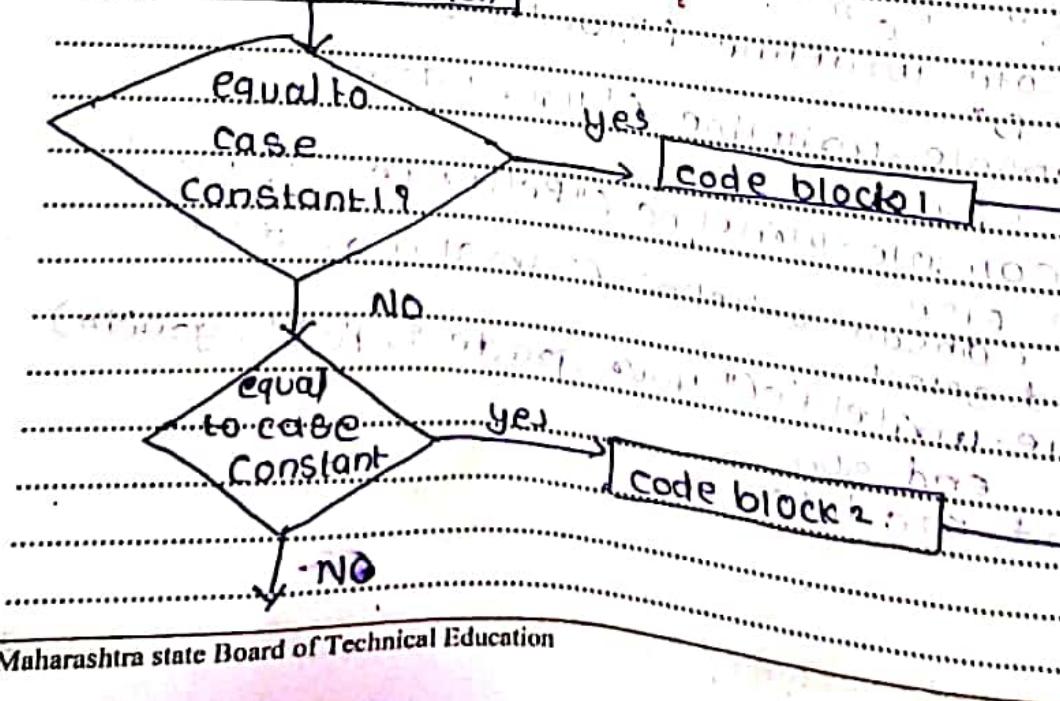
(Space for answers)

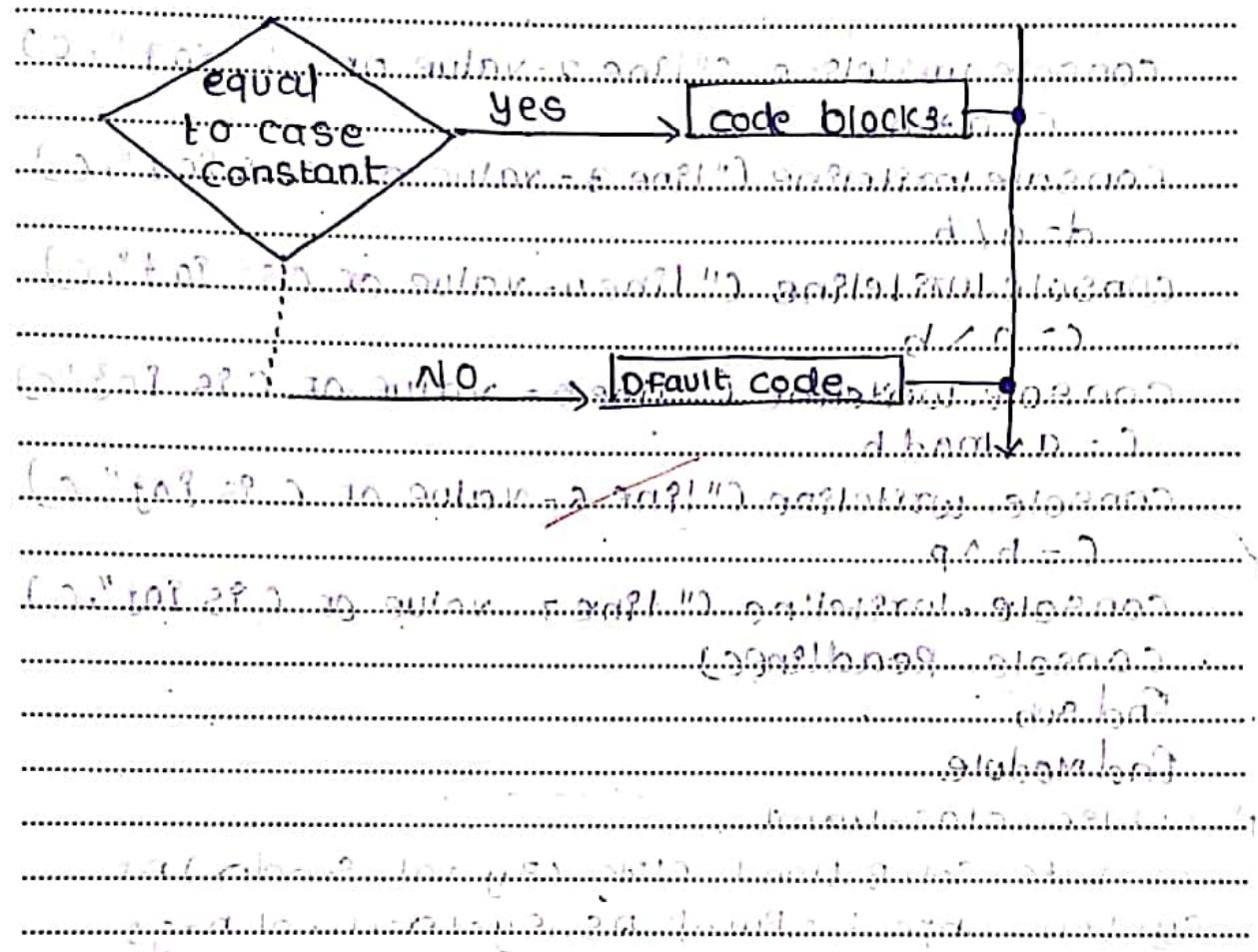
.....

1>

A Select Case Statement allows a variable to be tested for equality against a list of values. Each value is called a case, and the variable being switched on its checked for each selected case. Hence, evaluates an expression only one at the top of the control of the structure.

2] Single Expression



**XIV. Exercise (Teacher must assign separate exercise to group of 3-4 student)**

1. Implement a program using Select Case Statement to count the number of Vowels in A to Z alphabets.
2. Develop a program for performing arithmetic operations.

(Space for answers)

**Module Operators****Sub Main()**

Dim a As Integer = 21

Dim b As Integer = 10

Dim c As Integer = 2

Dim d As Integer

Dim e As Integer

c = a + b

Console.WriteLine("Line 1 - value of c is " &amp; c)

c = a - b

```

Console.WriteLine("line 2 - value of c is 103", c)
c = a * b
Console.WriteLine("line 3 - value of c is 103", c)
d = a / b
Console.WriteLine("line 4 - value of c is 103", c)
c = a \ b
Console.WriteLine("line 5 - value of c is 103", c)
c = a Mod b
Console.WriteLine("line 6 - value of c is 103", c)
c = b ^ p
Console.WriteLine("line 7 - value of c is 103", c)
Console.ReadLine()
End Sub
End Module
1) Public Class Form1
    Private Sub Button1_Click(ByVal sender As System.Object, ByVal e As System.EventArgs, Handles Button1.Click)
        Dim ch As Char
        ch = TextBox1.Text
        Select Case ch
            Case "A", "E", "I", "O", "U"
                MsgBox("Upper Case")
            Case "a", "e", "i", "o", "u"
                MsgBox("Lower Case")
            Case Else
                MsgBox("It is not vowel")
        End Select
    End Sub
End Class

```

Till the given condition is true. User can terminate the loop by using Exit While statement.

**Syntax:**

```
While condition DO
    Statements
    ? Exit While
    Statements
End While
```

```
DO WHILE condition
    Statements
    EXIT WHILE
    Statements
END WHILE
```

### VIII. Resources required (Additional)

.....window..IO.....  
.....1.3.....Processor.....  
.....2.GB.....RAM.....

### IX. Precautions

1. Save the program in specific directory / folder.

2. Follow safety practices.

### X. Resources used (Additional)

Microsoft visual studio 2017  
Windows 10 Home  
MS-Office 2016 Professional  
Visual Studio 2017  
MS-Word 2016  
MS-PowerPoint 2016  
MS-Excel 2016

### XI. Program Code: (Teacher must assign separate program statement to group of 3-4 student)

Write a program using While & Do loop statements in VB.Net.

```
module loops
    sub main()
        local variable definition
        Dim a AS Integer=10
        do loop execution
            DO
                Console.WriteLine("value of a: {0}; a")
                a=a+1
                loop while (a<=10)
                Console.ReadLine()
            End Sub
        End module
```

XII. Results (output of the program)

value of a: 10  
value of a: 11  
value of a: 12  
value of a: 13  
value of a: 14

value of a: 15  
value of a: 16  
value of a: 17  
value of a: 18  
value of a: 19

XIII. Practical Related Questions

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. Differentiate between Do & While loop statements in VB.Net
2. Give the syntax of While & Do loop statements in VB.Net

(Space for answers)

Do loop

The Do loop in VB  
Net runs at once

i) The user can exit  
the loop by writing  
the statement Exit Do

While loop

The While loop in  
VB.NET allows the user  
to execute the statement  
or block of Statement  
i) Till the given condition  
on q.s true user can  
terminate the loop by  
using Exit While

2] ii) Syntax for While Loop

While Condition

Statements

Exit While

Statements

End While

iii) Syntax for Do Loop

DO

[Statements]

[Continue Do]

[Statements]

Loop Until Condition

or

XIV. Exercise (Teacher must assign separate exercise to group of 3-4 student) [P L]

1. Write a program using While statement to print the prime numbers between 1-100
2. Write a program using While statement to print even-odd numbers between 1-50

(Space for answers) 01/10/1983  
2nd year Inte

```
1. private sub Cmdprime_Click() .....  
..... Dim p,n,i as Integer and on the output is  
..... p=1 .....  
..... print "prime numbers are" .....  
..... For n=1 To 100 .....  
..... For i=2 To n-1 .....  
..... If n mod i=0 Then l2345 < 21edui ? goes to  
..... Exit For .....  
..... Else .....  
..... p=1 .....  
..... End If .....  
..... Next .....  
..... If p=1 Then .....  
..... print n .....  
..... End If .....  
..... Next .....  
..... EndSub
```

```

2. Dim check As Integer
   Dim num As Integer
   For num = 2 To 50
      check = 1
      For i = 2 To math.Start(num)
         If num Mod i = 0 Then
            check = 0
            Exit For
         End If
      Next
      If check = 1 Then
         ListBox1.Items.Add(num)
      Else
         check = 1
      End If
   End Sub

```

**For Each loop In VB.Net**

For each loop statement is used to access every single element in an array and also group of elements from

**Syntax:**

For Each [Item] In [Group]

[loopBody]

Next [Item]

**Item:** The Item in the group

**Group:** The group containing similar items

**LoopBody:** The code you want to execute within For Each Loop

**VIII. Resources required (Additional)**

.....Windows.10.....

.....73...processor.....

.....4.G.B.RAM.....

**IX. Precautions**

1. Save the program in specific directory / folder.
2. Follow safety practices.

**X. Resources used (Additional)**

.....Visual Studio 2017.....

**XI. Program Code: (Teacher must assign separate program statement to group of 3-4 student)**

Write a program using For & For Each statement.

```
Dim list As New List(Of String)
    From {"abc", "def", "ghi"}  

    /Iterate through the list  

    For Each item As String In list
        Debug.WriteLine(item & " ")
    Next
    Debug.WriteLine(" ")
```

**XII. Results (Output of the Program)**

.....  
 abc  
 dee  
 ghi

Lecture 11

Computer Lab

**XIII. Practical Related Questions**

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. Write the output of the following code?

Module Module1

Sub Main()

For i = 0 To -10 Step -1

Console.WriteLine(i)

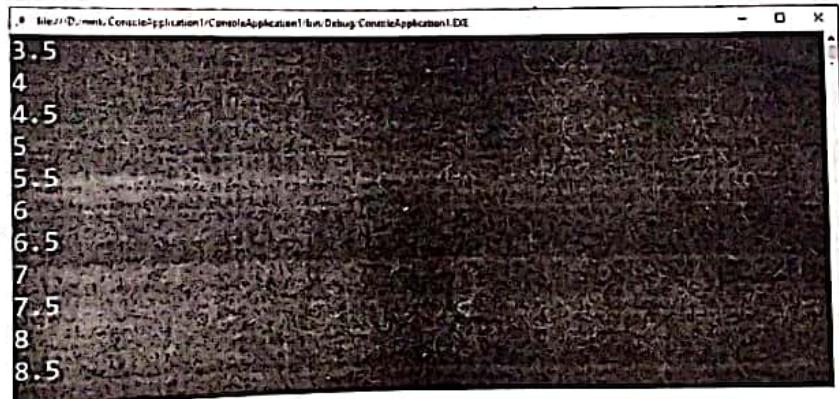
Next

Console.ReadKey()

End Sub

End Module

2. Write a program to generate the following output



```
3.5
4
4.5
5
5.5
6
6.5
7
7.5
8
8.5
```

(Space for answers)

1. 'Console' is not declared. It may be inaccessible due to its protection level.

2.

0	-7
-1	-8
-2	-9
-3	-10
-4	
-5	
-6	

②

```
Module Module1  
Sub Main()  
    For i = 3 To 8 Step +0.5  
        Console.WriteLine(i)  
    Next  
    Console.ReadKey()  
End Sub  
End Module
```

QUESTION 2  
Write a program to print the following pattern.

XIV. Exercise (Teacher must assign separate exercise to group of 3-4 student)

1. Write the situations where For Each loop statements can be implemented.
2. Write a program using For Next loop statement to find the Armstrong numbers between 1 to 500 (153 is Armstrong number  $1^3 + 5^3 + 3^3 = 153$ )

(Space for answers)

i) If we want to repeat the statement in loop Specific manner number of times to for loop is ideal  
ii) It uses For & next Statement

a) module find\_Armnum

Sub main()

Dim x, sum, t, max, min, As Integer

min = 1

max = 500

Console.WriteLine (" Armstrong Number are : ")

while min <= max

t = min

sum = 0

while t > 0

r = t mod 10

sum + r = Math.Pow(r, 3)

t = t / 10

```
End while
IF Sum = min Then
    console.writeline(min.ToString())
End IF
min += 1
End while
console.ReadLine()
End sub
End module
```

**VIII. Resources required (Additional)**

.....  
.....  
.....

**IX. Precautions**

1. Save the program in specific directory / folder.
2. Follow safety practices.

**X. Resources used (Additional)**

.....  
.....

**XI. Program Code: (Teacher must assign separate program statement to group of 3-4 student)**

→ Write a Program to demonstrate the use of Button, Textbox & Label.

```
Public class form1  
Private Sub btn_Compute_Click ( By Val Sender As  
System.Object, By Value As System.EventArgs )  
End Sub  
End Class  
→ first number = 2  
Second number = 2
```

used  
Designed name:

Label1 : first number  
Label2 : Second number  
Label3 : Total

textbox1 =  
textbox2 =  
Label1 =  
button1 : Compute

**Results (output of the program)**

first number : 1  
 Second number : 2  
 Total : 12  
 Compute

dvs 1091

**I. Practical Related Questions**

**Note:** Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. Write the use of Tab Index property of the control
2. Write a code to generate the button at runtime in VB.Net

(Space for answers)

Tab index: Gets/Sets the tab order of this control in its container.

- Tab index Property is used to display and Set the tab order for individual control.

- If we Set the tab index Property to an integer representing the position of the control within the tab order of the form.

- The tab index Property Set or return the value of the tab index attribute of an element.

7 Private Sub button1\_Click(ByVal val As System.Object, ByVal e As System.EventArgs) Handles button1.Click

Dim btn As New Button

btn.Name = "Dynamic Button"

btn.Size = New Size(148, 23)

btn.Location = New Point(53, 39)

btn.Text = "click me!"

GroupBox1.Controls.Add(btn)

Add Handler btn.click Address of dynamic

Button Click

End Sub

```

Private Sub DynamicTextBox_Click
    MessageBox.Show("This is the
                    dynamic button")
End Sub

```

Language and its value and all these are dependent upon  
 the English or French example which don't have  
 any particular meaning but it is not true and  
 can be interpreted in different ways and can be  
 used in many ways which gives more opportunities  
 and possibilities for the user.

#### XIV. Exercise (Teacher must assign separate exercise to group of 3-4 student)

1. Write a program to perform the arithmetic operations using controls label, button & textbox
2. Write a program to change the background color of the form when user clicks on different button.

(Space for answers)

17) Private Sub Button1\_Click (By Val Sender As System.Object By Value As System.EventArgs)  
 Handles Button1.Click

Dim num1, num2, num3, difference, product,  
 quotient, As Single

num1 = TextBox1.Text

num2 = TextBox2.Text

$\text{Sum} = \text{num1} + \text{num2}$   
 $\text{difference} = \text{num1} - \text{num2}$   
 $\text{Product} = \text{num1} * \text{num2}$   
 $\text{Quotient} = \text{num1} / \text{num2}$

&amp;

options  
ptions.

applies  
field to  
actices  
neering

Label 1 = Text = sum  
 Label 2 = Text = difference  
 Label 3 = Text = Product  
 Label 4 = Text = quotient

End Sub

?

Private sub Button1\_Click (By Val Sender As  
 System.Object By Val e As EventArgs) Handles Button1.Click  
 Dim xgb1, xgb2, xgb3 As Integer

~~xgb1 = TextBox1.Text~~

~~xgb2 = TextBox2.Text~~

~~xgb3 = TextBox3.Text~~

mp. BackColor = Color.FromArgb (xgb1,  
xgb2, xgb3)

End Sub

Prog

L

C

multiple  
checkbox  
d or if

checkbox.

group  
mine

### **VIII. Resources required (Additional)**

window.10

### 13. Process.

4GB, RAM

xv

## **IX. Precautions**

- Precautions**

  1. Save the program in specific directory / folder.
  2. Follow safety practices.

XVI

#### **X. Resources used (Additional)**

Visual Studio 2011

**XI. Program Code:** (Teacher must assign separate program statement to group of 34 student)

**Write a program to demonstrate the use of Checkbox & Radio button**

Write a program to demonstrate  
public class Form1

```
    Public Class Form1  
    Private Sub Button1_Click(ByVal sender As System.Object,  
        ByVal e As System.EventArgs) Handles Button1.Click
```

JF RadioButton1. Checked. True then message box. Show ("you are under 101")

Else If RadioButton2.Checked = True Then  
    Message Box. Show ("you are over 101")

End IF

IF CheckBox checked = True then

message Box . Show (" You like poster , new ")

Ergodicity

If CheckBox .2 checked = True Then  
message Box .show ("what")

Message box: show ("what the hell")  
End IF

三

IF Check-Box. Checked = True then  
MessageBox. Show( "So

messageBox Show the **gimpose** more is a  
competition.

End If

End Sub

end class

## XII. Results (output of the program)

You are under!0  
What the hell!

## XIII. Practical Related Questions

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. Write a program using Radio button to change the bulb state ON/OFF  
(Use two images one for ON state and another for Off State)
2. Differentiate between Radio button and Checkbox Control

(Space for answers)

Radio Button	Check box
It enables the way to select a single option from a group of choice when paired with other.	It represents a windows check box.
The appearance of the control automatically change when the controls clicked.	Appearance of the control automatically change when the check box is selected.
Check aligns the location of the check box position of the radio button.	Check Aligning state the horizontal and vertical alignment of the checks. Mark on the check box.
It is used to provide a set of mutually exclusive options.	It allows the user to set the true or false or yes/no type optional.

```
.....private Sub RadioButton1_CheckedChanged(sender As Object, e As EventArgs) Handles RadioButton1.CheckedChanged
.....    Me.ForeColor = Color.Red
.....End Sub
.....private Sub RadioButton2_CheckedChanged(sender As Object, e As EventArgs) Handles RadioButton2.CheckedChanged
.....    Me.ForeColor = Color.Green
.....End Sub
.....private Sub RadioButton3_CheckedChanged(sender As Object, e As EventArgs) Handles RadioButton3.CheckedChanged
.....    Me.ForeColor = Color.Blue
.....End Sub
.....End Class
```

Properties  
Private

## **IX. Precautions**

1. Save the program in specific directory / folder.
  2. Follow safety practices.

## X. Resources used (Additional)

Visual Studio 2017

XI. Program Code: (Teacher must assign separate program statement to group of 3-4 student)

**ListBox & Add** Write a program to demonstrate the use of List Box & Combo Box Control.

```
Private Sub Button1_Click (Sender As Object, e As EventArgs) Handles Button1.Click
    ListBox1.Items.Add("Nokia")
End Sub

Private Sub Button1_Click (Sender As Object, e As EventArgs) Handles Button1.Click
    Dim myitem
    myitem = InputBox("Enter your Item")
    ListBox1.Items.Add(myitem)
End Sub
```

```
Private Sub Button2_Click(sender As Object, e As EventArgs) Handles Button2.Click
    ListBox1.Items.Remove("IPad")
End Sub
```

End Sub

```
Private Sub Button3_Click(Sender As Object, e As EventArgs)
    Handles Button3.Click
    ListBox1.Items.Clear()
    End Sub
```

Remove (Remove) (Remove) (Remove)

**iPhone 8/8 Plus** / iPhone X

**IPad** . . . . . **பொன்னாலங்கி Galaxy**

Samsung Galaxy Z Fold3 due late

HTC  
N01907 2015 C 011014 / 8

*Nobletum* *leebii* *Steyermark*  
is a new species from the Andes of Ecuador.

## XII. Results (output of the program)

## XIII. Practical Related Questions

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. Write a program to select multiple subjects using list box control.
2. Write a program to select colleges using single combo box.

(Space for answers)

```

1. public class Form1
    private Sub Form1_Load (Sender As Object,
                           AS EventArgs) Handles MyBase.Load
        Set the caption bar text of the form
        Me.Text = "Tutorialspoint.com"
        List.Box1.Items.Add ("Canada")
        List.Box1.Items.Add ("USA")
        List.Box1.Items.Add ("UK")
        List.Box1.Items.Add ("Japan")
        List.Box1.Items.Add ("Russia")
        List.Box1.Items.Add ("China")
    End Sub
    Private Sub Button1_Click (Sender As Object,
                           AS EventArgs) Handles Button1.Click
        myBox ("you have selected " & List.Box1.SelectedItem
               to string ")
    End Sub
    Private Sub List.Box1_SelectedIndexChanged (Sender As Object,
                           AS EventArgs) Handles List.Box1.SelectedIndexChanged
        Label1.Text = List.Box1.SelectedItem
    End Sub
End Class
2. Public Class Form1
    Private Sub Form1_Load (Sender As Object,
                           AS EventArgs) Handles MyBase.Load
        Me.Text = "Tutorialspoint.com"
    End Sub

```

End Sub

```

private Sub Button1_Click (sender As Object, e As EventArgs)
    Handles Button1.Click
    If ComboBox1.SelectedIndex > 1 Then
        Dim sender As Integer
        sender = ComboBox1.SelectedIndex
        Dim student As Object
        student = ComboBox1.SelectedItem
        Dim item = ComboBox1.SelectedItem
        ListBox1.Items.Add(item)
    End If
End Sub

```

```

private Sub Button2_Click (sender As Object, e As EventArgs)
    Handles Button2.Click
    ComboBox1.Items.Clear()
    ComboBox1.Items.Add("Shivaji Rao S. Jondhale")
    ComboBox1.Items.Add("ARMIEI")
    ComboBox1.Items.Add("JET")
    ComboBox1.Text = "Select From"
End Sub

```

**XIV. Exercise (Teacher must assign separate exercise to group of 3-4 student)**

1. Differentiate between list box & combo box.
2. Implement a program for student registration which will allow the student to register for multiple subjects for single semester using List & Combo box.

(Space for answers)

List Box	ComboBox
① we can select multiple option from test list.	① we can select only one option from list.

- Q) we can't add, edit, info at runtime.
- A) we can add, edit, info at runtime.
- Q) we have both drop up and drop down to list.
- A) we have only drop down facility.
- Q) we can use checkbox within list box.
- A) we can't use checkbox with combobox control.
- Q) occupies more space but shows more than one value.
- A) occupies less space but shows only one value.

~~values for accessibility~~

Q) what is the difference between dropdownlist and combobox?

A) dropdownlist is used for single selection whereas combobox is used for multiple selection.

### Properties of the Picture Box Control

1. Image
2. ImageLocation
3. InitialImage
- 4.SizeMode
5. TabIndex
6. Text

### VIII. Resources required (Additional)

..... Windows 10

..... i3 processor

..... 2 G.B RAM

### IX. Precautions

1. Save the program in specific directory / folder
2. Follow safety practices.

### X. Resources used (Additional)

..... Microsoft Visual Studio 2017

..... Microsoft .NET Framework 4.6.1

..... Microsoft Visual Studio 2017

### XI. Program Code: (Teacher must assign separate program statement to group of 3-4 student)

Write a program using Toolbar, Form & Panel Control.

.....

.....

.....

.....

.....

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## XII. Results (Output of the Program)

### XIII. Practical Related Questions

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. List the control which is used to set the icons on the Toolbar Control
2. Differentiate between Form & Panel Control in VB.Net

(Space for answers)

D. Toolstrip Control

Toolstrip Container Control

Toolstrip Panel Control

Toolstrip ProgressBox Control

Toolstrip StatBarLabel Control

Tool tip Component

Track Bar Control

Treeview Control

Q. Form

Panel Control

① A Form can be placed with a title

① A Panel Control can't be placed with a title

② The form can't display the scroll bar

② The panel control can display the scroll bar

③ Form is a light weight Component

③ Panel is a heavy weight Component

- 1) only limited number of controls can be placed within one group box.
- 4) Any number of controls can be placed within the panel by using

Form1\_Load() event. In this event  
the code to load the image  
is written as follows:

```
Private Sub Form1_Load(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles MyBase.Load
    PictureBox1.Image = Image.FromFile("C:\Users\Public\Pictures\Sample Pictures\1.jpg")
End Sub
```

#### XIV. Exercise (Teacher must assign separate exercise to group of 3-4 student)

1. Write a program using picture box control to load an image at run time.
2. Write a program to demonstrate the use of Panel Control in VB.Net

(Space for answers)

```
Module Module1
    Public Class Form1
        Private Sub Form1_Load(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles MyBase.Load
            myBoxe.Load()
        End Sub
        Set the caption box text of the form.
        me.Text = "Tutorialspoint.com"
        End Sub
        Private Sub Button1_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button1.Click
            PictureBox1.ClientSize = New Size(300, 300)
            PictureBox1.SizeMode = PictureBoxSizeMode.StretchImage
        End Sub
    End Class
End Module
```

```

End Sub
End Class
Design View

```

Q) private Sub Form2s\_Load(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles MyBase.Load  
 'Change back color of panel  
 Panel1.BackColor = Color.Red  
 'Set form's Transparency key to the same  
 'color as panel's back color  
 Me.TransparencyKey = Color.Red  
 'Me keyword provide a way to refer  
 'to the current instance of class that is  
 'the instance in which code is  
 'running  
End Sub

### **VIII. Resources required (Additional)**

Windows 10  
13 processes  
2 GB RAM

## **IX. Precautions**

1. Save the program in specific directory / folder.
  2. Follow safety practices.

#### X. Resources used (Additional)

Visual Studio 2017

**XI. Program Code:** (Teacher must assign separate program statement to group of 3-4 student)

**Write a program using Tab control.**

## XII. Results (Output of the program)

9.

Right of first refusal

### **XIII. Practical Related Questions**

**Practical Related Questions**  
*Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.*

- more such questions so as to ensure the following:**

  1. Write a procedure to display the icons on the Toolbar Control.
  2. Differentiate between Form & Panel Control in-VB.Net

(Space for answers)

- .....1.....Select.....the.....Toolbox.....Control.....
- .....2.....In.....the.....Properties.....Windows.....Click.....the.....button.....Property.....to.....Select.....it.....and.....Click.....the.....Ellipses.....button.....to.....open.....the.....Toolbox.....Button.....Collection.....Editor.....
- .....3.....Use.....the.....Add.....and.....Remove.....Buttons.....to.....Add.....or.....Remove.....Buttons.....From.....the.....ToolBox.....Control.....
- .....4.....Configure.....the.....Properties.....of.....the.....Individual.....Buttons.....in.....the.....Properties.....Window.....that.....Appears.....in.....the.....Pane.....on.....the.....Right.....Side.....or.....the.....Editor.....

2) Form

① A Form can be placed with a title.

② The Form cannot display the scroll bar.

③ Form is a light weight component.

④ Only limited number of controls can be placed within the group box.

panel control

① A panel control can't be placed with a title.

② The panel control can display the scroll bar.

③ Panel is a heavy weight component.

④ Any number of controls can be placed within the panel.

100% accurate

- XIV. Exercise (Teacher must assign separate exercise to group of 3-4 student)**
1. Write a program to display the traffic signal using timer control
  2. Write a program to demonstrate the use of Tab Control in VB.Net  
(Space for answers)

```

Public Class Form1
    Dim tmrlight As System.Timers.Timer
    New System.Windows.Forms.Timer() Timer1Interval = 1000
    Dim lsLightStatus(2) As LightStatus
    Public lsRed As LightStatus
    Public lsYellow As LightStatus
    Public lsGreen As LightStatus
    Private Enum LightStatus
        Red = 0
        Yellow = 1
        Green = 2
    End Enum
    Private Sub Form1_Load(sender As Object, e As EventArgs) Handles MyBase.Load
        tmrlight.Interval = 5000
        AddHandler tmrlight.Elapsed, AddressOf ChangeLight
        SetLight(LightStatus.Red)
    End Sub

```

**6. Public Function Split (input As String) As String()**

<b>Expression</b>	<b>Description</b>
[abc]	Find any character between the brackets
[^abc]	Find any character NOT between the brackets
[0-9]	Find any character between the brackets (any digit)
[^0-9]	Find any character NOT between the brackets (any non-digit)
(x y)	Find any of the alternatives specified

**VIII. Resources required (Additional)**

.....Windows.....

.....13 Processes.....

.....2 GB RAM.....

**IX. Precautions**

1. Save the program in specific directory / folder.
2. Follow safety practices.

**X. Resources used (Additional)**

.....Visual Studio 2017.....

**XI. Program Code: (Teacher must assign separate program statement to group of 3-4 student)**

Write a program to perform validation using ErrorProvider &amp; Regular Expression.

```

Module1.vb
    Sub Main()
        Dim str As String = "HelloWorld"
        Dim reg As New Regex("[0-9]+")
        Dim match As Match = reg.Match(str)
        If match.Success Then
            Console.WriteLine("Match found")
        Else
            Console.WriteLine("Match not found")
        End If
    End Sub

```

### XII. Results (Output of the Program)

01000000  
8022900000 81  
..... 10000000

### XIII. Practical Related Questions

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO

1. Enlist the different types of constructs used for regular expression.
2. Write a program code perform the date Validation using ErrorProvider Control

(Space for answers)

- 1) character escapes
- 2) character classes
- 3) Anchors
- 4) Grouping constructs
- 5) Quantifiers
- 6) Substitutions
- 7) Alternation constructs

**XIV. Exercise (Teacher must assign separate exercise to group of 3-4 student)**

1. Write a Program using ErrorProvider for username & password authentication
2. Write a Program using ErrorProvider control to validate the Mobile Number and Email ID in GUI application

(Space for answers)

```

1. Dim can As New OleDb.OleDbConnection
   Dim dbprovider As String
   Dim dbsource As String
   Dim ds As New DataSet
   Dim da As New OleDb.OleDbDataAdapter
   Dim Sql As String
   Dim usename!, password!, usertype As String
   Dim maxrows, incdec As Integer
private Sub Button1_Click (sender As Object,
e As EventArgs) Handles Button1.Click
If txtb.username.Text = usename! And txtb.
   = psw! Then
   If usertype = "admin" Then
      Score.Show()
      Score.btnDelete.Enabled = False
      Score.btnAdd.Enabled = False
      Score.Button2.Enabled = False
      Score.Button1.Enabled = False
   End If
End If

```

```
ELSE IF txtb uname.Text = Username1 And txtb.pwd =  
= " " Then msg.Box("Enter password")  
ELSE IF txtb uname.Text = " " And txtb.pwd.Text = PSSd1 Then  
msg.Box("Enter username")  
ELSE IF txtb uname.Text = Username1 And txtb.pwd  
Text < > PSSd1 Then  
msg.Box("Invalid password")  
ELSE IF txtb uname.Text < > Username1 And txtb.pwd  
Text = PSSd1 Then  
msg.Box("Invalid username")  
Else  
msg.Box("invalid user type")  
End If  
Else  
msg.Box(" Invalid username & or password")  
End If  
End Sub
```

2. Parameters by Reference: The values passed by parameters to the sub procedure are preceded by the keyword ByRef.

### VIII. Resources required (Additional)

.....window 10.....

.....i3 processor.....

.....2 GB RAM.....

### IX. Precautions

1. Save the program in specific directory / folder.
2. Follow safety practices.

### X. Resources used (Additional)

.....Visual Studio 2017.....

### XI. Program Code: (Teacher must assign separate program statement to group of 3-4 student)

Write a Program using sub procedure & parameterized sub procedures.

module mySub

Sub calculate pay(By Ref hours AS Double, ByRef wage AS Decimal)

Dim pay AS Double

pay = hours \* wage

Console.WriteLine ("Total Pay: £0.00", pay)

End Sub

Sub main()

CalculatePay (25, 10)

CalculatePay (40, 20)

CalculatePay (30, 27.5)

(Console.ReadLine())

End Sub

End module.

## XII. Results (Output of the Program)

Total pay :- ₹ 8.250.00

Total pay :- ₹ 8.00.00

Total pay :- ₹ 8.25.00

## XIII. Practical Related Questions

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO

1. Differentiate between ByVal & ByRef keyword in parameter passing of Sub Procedure.
2. Write any procedure using recursion.

(Space for answers)

2.1 Limiting conditions

memory usage

Efficiency

Mutual Recursion

Calling with Parentheses

Testing

1. ByVal :- If you want to pass the value of the variable use the ByVal syntax. By passing the value of the variable instead of a reference to the variable any changes to the variable made by code in the Substitution or function will not be passed back to the main code. This is the default passing mechanism when you don't declare the parameters by

.....using....By.val.....  
.....By.Ref.: If you want to change the value of  
.....the variable in the Sub/trace or function  
.....and pass the revised value back to the  
.....main code use the By Ref Syntax this passes  
.....the referr to the variable and allows  
.....values to be changed and passed back to the  
.....main cod.

2009 batch participated in  
.....various competitions  
.....in different categories  
.....and emerged successful  
.....in all the categories  
.....and received certificates  
.....and trophies.

Wednesday 10th March 2010 at morning 11:30 hours  
.....BTEB 3D model exhibition was organized by  
.....Mumbai University. In this exhibition students  
.....from various colleges from all over India displayed  
.....their 3D models. There were various categories  
.....like engineering, architecture, interior design,  
.....etc. Students from our college also displayed  
.....their 3D models. It was a great experience for  
.....us to see such a large number of models.

- Net (22034) (Page No. 154) / Date \_\_\_\_\_
- IV. Exercise (Teacher must assign separate exercise to group of 3-4 student)
1. Develop a program to calculate the Fibonacci series of given number.
  2. Develop a program to print the reverse of any number using Sub Procedure.

(Space for answers)

1. A.   
private Sub Command1\_Click() Dim x As Integer  
n = Val(Text1.Text) x = 0  
y = 1  
Print x  
Print y  
For i = 3 To n  
Sum = x + y  
Print Sum  
x = y  
y = Sum  
Next  
End Sub

2) module reverse

sub main()

Dim n, r AS Integer

Console.WriteLine("Enter a number")

n = Int(Console.Readline())

while n <= 0

r = n mod 10

Console.WriteLine(r)

n = n \ 10

End While

End Sub

End module

- **Modifiers:** specify the access level of the function; possible values are: Public, Private, Protected, Friend, Protected Friend and information regarding overloading, overriding, sharing, and shadowing.
- **FunctionName:** indicates the name of the function
- **ParameterList:** specifies the list of the parameters
- **ReturnType:** specifies the data type of the variable the function returns

### VIII. Resources required (Additional)

.....  
Windows 10  
.....  
1.3. processor  
.....  
2.G.B.RAM  
.....

### IX. Precautions

1. Save the program in specific directory / folder.
2. Follow safety practices.

### X. Resources used (Additional)

.....  
Visual Studio 2017  
.....  
.....

### XI. Program Code: (Teacher must assign separate program statement to group of 3-4 student)

Write a program using simple function & parameterized function.

```
Function find max (By val num1 AS Integer,  
By val num2 AS Integer) AS Integer  
  
Dim result AS Integer  
If (num1 > num2) Then  
    result = num1  
Else  
    result = num1  
Else  
    result = num2  
End If  
Find max = result  
End Function  
  
Sub main()  
Dim a AS Integer = 100  
Dim b AS Integer = 200  
Dim res AS Integer
```

```
res = find max(a, b)  
Console.WriteLine("max  
value is : £03", res)  
Console.ReadLine()  
End Sub  
End module
```

## XII Results (Output of the Program)

max value is 1200

01 SUBROUTINE

02 PRINTING

PRINT

## XIII Practical Related Questions

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. Function return a value is (True / False).
2. Find error in following code.

Function FindMax(ByVal num1 As Integer, ByVal num2 As Integer) As

Dim result As Integer

If (num1 > num2) Then

    result = num1

Else

    result = num2

End If

FindMax = result

End sub

(Space for answers)

1) False

2. 1] 'End Function' expected

2] Type expected Statement 'Colon' appear  
within a

3] Method body: End ClassApp5 assumed

```

2) Dim num1, num2 As Integer
   Dim result As Integer
   If num1 > num2 Then
      result = num1
   Else
      result = num2
   End If
   findMax = result
   Console.ReadKey()
End Sub

```

**XIV Exercise (Teacher must assign separate exercise to group of 3-4 student)**

1. Write a program to identify maximum number using parameterized function.  
( Use a two Textbox for input a integer number and display output in Message Box )
2. Implement a program for recursion using a function.

(Space for answers)

```

Module module1
    Function Recursive(By Val value As Integer By Ref Count As Integer) As Integer
        Console.WriteLine("Recursive (" & value &, & count)
        value = count + 1
        If value >= 100 Then
            Return value
        End If
        Return Recursive(value * 2, count)
    End Function
    Sub Main()
        Dim count As Integer = 0
        Dim total As Integer = Recursive(5, count)
        Console.WriteLine("Total = " & total)
        Console.WriteLine("Count = " & count)
    End Sub
End Module

```

```
> function findMax (ByVal num1 As Integer,
    ByVal num2 As Integer) As Integer.
```

```
Dim result As Integer
```

```
If (num1 > num2) Then
```

```
    result = num1
```

```
Else
```

```
    result = num2
```

```
End If
```

```
findMax = result
```

```
End function
```

```
Sub Main()
```

```
Dim a As Integer = 100
```

```
Dim b As Integer = 200
```

```
Dim res As Integer
```

```
res = findMax(a, b)
```

```
Console.WriteLine ("Max Value is = " + res)
```

```
Console.ReadLine()
```

```
End Sub
```

```
End Module
```

```

End Class
Sub main()
    Dim Object As Name_of_class=New Name_of_Class()
End sub
End Module

```

**XII. Result****VIII. Resources required (Additional)**

.....  
Windows 10  
.....  
7G processor  
.....  
2 GB RAM

**IX. Precautions**

1. Save the program in specific directory / folder.
2. Follow safety practices.

**X. Resources used (Additional)**

.....  
Visual Studio 2017  
.....

**XIII. Pr  
No.  
mo  
1.****XI. Program Code: (Teacher must assign separate program statement to group of 3-4 student)**

Write program using the concept of class & object in VB.Net

```

Module MyBox
    Class Box
        Public length As Double
        Public breadth As Double
        Public height As Double
    End Class
    Sub Main()
        Dim Box1 As Box = New Box()
        Dim Box2 As Box = New Box()
        Dim Volume As Double = 0.0
        Box1.height = 5.0
        Box1.length = 6.0
        Box1.breadth = 7.0
        Box2.height = 10.0
        Box2.length = 12.0
        Box2.breadth = 13.0
        Volume = Box1.height * Box1.length * Box1.breadth
    End Sub
End Module

```

```

Console.WriteLine("Volume of Box 1 is")
Console.WriteLine(volume)
Volume = Box2.height * Box2.length * Box2.breadth
Console.WriteLine("Volume of Box 2 is")
Console.WriteLine(volume)
Console.ReadKey()
End Sub
End Module.

```

## **XII. Results (Output of the Program)**

Volume of Box 1: 2010

VOLUME OF B.C.P. 2 1156.0

### **XIII. Practical Related Questions**

**Note:** Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

- ### **1. Find Output in following code.**

### **Class Example**

```
Private _value As Integer
    Public Sub New()
        _value = 2
    End Sub

    Public Function Value() As Integer
        Return _value * 2
    End Function
End Class

Module Module1
    Sub Main()
        Dim x As Example = New Example()
        Console.WriteLine(x.Value())
    End Sub
End Module
```

3. Find error in following code.

```
Module Module1  
Sub Main()  
    Dim b As B = New B(5)  
    B.Display()  
  
    Dim c As C = New C(5)  
    C.Display()
```

End Sub

End Module

(Space for answers)

② Display is not declared

Type 'B' is not defined

Type 'C' is not defined

1. Data members, methods, properties  
 2. Events and delegates  
 3. Encapsulation and abstraction  
 4. Inheritance, polymorphism and exception handling  
 5. Object oriented programming concepts  
 6. Class and object  
 7. Constructors and destructors  
 8. Access specifiers and access modifier  
 9. Properties  
 10. Events and delegates

#### XIV. Exercise (Teacher must assign separate exercise to group of 3-4 student)

1. Write a program to identify Volume of Box class, with three data members, length, breadth and height
2. Implement a program to accept values from combobox and display average of this in message box using a class.

(Space for answers)

```
2) public class Form1
    private sub Form1_Load (sender as object, e
        as EventArgs) handles MyBase.Load
        me.Text = "tutorialspoint.com"
    End Sub
    private sub Button1_Click (sender as object,
        as EventArgs) handles Button1.Click
        If ComboBox1.SelectedIndex > -1 Then
            Dim Sindex As Integer
            Sindex = ComboBox1.SelectedIndex
            Dim Sitem As object
            Sitem = ComboBox1.SelectedItem
            ListBox1.Items.Add (Sitem)
        End If
    End Sub
    private sub Button2_Click (sender as object, e as
```

```

Event Args) Handles Button1.Click
    ComboBox1.Items.Clear()
    ComboBox2.Items.Add("Safety")
    ComboBox3.Items.Add("Security")
End Sub

Private Sub Button3_Click(sender As Object,
                           e As EventArgs)
    ComboBox1.Sort = True
End Sub

Private Sub Button4_Click(sender As Object,
                           e As EventArgs)
    ComboBox1.Items.Clear()
End Sub

Private Sub B1.ComboBox1_SelectedIndexChanged(sender As Object,
                                           e As EventArgs)
    Handles ListBox1.SelectedIndexChanged
    Label1.Text = ComboBox1.SelectedItem.
        To String
End Sub

End Class

```



```

public class Constructor
    public Age AS Integer
    public Sub New (ByVal x AS Integer)
        Age = x
    End Sub

public function ShowAge() AS Integer
    Return Age
End Function

End Class

Sub Main()
    Dim Obj AS New Destroy()
End Sub

public class Destroy
    Protected Overrides Sub Finalizer()
        Write ("VB.NET")
    End Sub

    Read()
End Sub

End Class

```

## **XII. Results (Output of the Program)**

### XIII. Practical Related Questions

**Note:** Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. Find output of following code.

```
Imports System.Console  
Module Module1  
    Sub Main()  
        Dim con As New Constructor(20)  
        WriteLine(con.ShowAge())  
        Read()  
    End Sub  
End Module
```

```
Public Class Constructor
    Public Age As Integer=40
    Public Sub New(ByVal x As Integer)
        End Sub
        Public Function ShowAge() As Integer
            Return Age
        End Function
    End Class
```

2. Find error in following code.

```
Imports System.Console  
Module Module1  
    Sub Main()  
        Dim obj As New Destroy()  
    End Sub  
End Module
```

```
Public Class Destroy  
    Protected Overrides Finalize()  
        Write("VB.NET")  
        Read()  
    End Sub  
End Class
```

(Space for answers)

2.① Declaration expected  
~~expected~~

~~2.① Declaration expected  
② Declaration expected~~

① output is 4.0

- XIV. Exercise (Teacher must assign separate exercise to group of 3-4 student)
1. Implement a program to display any message at run time. (Using a constructor).
  2. Implement a program to calculate area of circle using parameterized constructor.

(Space for answers)

```

Module module1
Class Line
    Private l As Double
    Public Sub New()
        Console.WriteLine("Object is being created")
    End Sub
    Public Sub SetLength(ByRef len As Double)
        l = len
    End Sub
    Public Function GetLength() As Double
        Return l
    End Function
End Class
Sub Main()
    Dim L As Line
    L.SetLength(6.0)
    Console.WriteLine("Length of line is", L.GetLength())
    Console.ReadKey()
End Sub
End Module

```

O/p: Object is being created  
length of line 6

```

2) module module1
    class Area
        private x As Double
        public Sub New(ByVal temp As Double)
            x = temp
        End Sub
        Public Function getArea() As Double
            Return Math.PI * Math.Power(x, 2)
        End Function
    End Class
    Sub main()
        Dim a As New Area(5.0)
        Console.WriteLine("Area of circle is " & a.getArea())
        Console.ReadKey()
    End Sub
    End module

```

O/P

Area of Circle : 78.5398

**VIII. Resources required (Additional)**

Windows 10

13 processor 27 Nov 2017

4 GB RAM 2 GB RAM

Processor 2.4 GHz

Operating system

**IX. Precautions**

1. Save the program in specific directory / folder.
2. Follow safety practices.

**X. Resources used (Additional)**

Visual Studio 2017

**XI. Program Code: (Teacher must assign separate program statement to group of 3-4 student)**

Write a program using concept of Inheritance.

Public Class NewPerson

Inherits Person  
Must override Overrides Public ReadonlyProperty  
ClassName() As String

Get

ClassName = "New Person"

End Get

End Property

Overrides Sub Speak()

Console.WriteLine("My name is " &  
" - Firstname & " &  
" - Surname")Console.WriteLine("And I am a new  
Person")

End Sub

End Public

## XII. Results (Output of the Program)

My name is Roshik Wagh  
Prathama Bhatia and I am a  
new person.

## XIII. Practical Related Questions

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. Write an output of following class.

```
Public class Booksale
    sub New()
        Console.WriteLine("My Base Class")
    End sub
End class
```

```
Public class studentbooksale
```

```
Inherits Booksale
Sub New()
    MyBase.New()
    Console.WriteLine("My child Class")
End sub
End class
```

2. Find out Error in following code.

```
Public Class Person
```

```
    Public FirstName As String
    Public LastName As String
    Public DateOfBirth As Date
    Public Gender As String
```

```
    Public ReadOnly Property FullName() As String
        Get
```

```
            Return FirstName & " " & LastName
        End Get
    End Property
```

```
End Class
```

```
Public Class Customer=>Inherits Person
    Public CustomerID As String
```

Public CustomerType As String  
End Class

(Space for answers)

- ② ① End or statement expected.  
'Class' Statement must end with a matching 'End class'.  
'End Sub' Must be preceded by a matching 'Sub'.

① Output :-

My Base Class

My Child Class

**XIV. Exercise (Teacher must assign separate exercise to group of 3-4 student)**

1. Implement a Program for inheritance where Student is Child class and faculty is Base class.(Take Appropriate variables in Base and child class)

(Space for answers)

Public Class Student

Public hin, max, eng, bat, avg As Integer

Public Sub getmarks()

```
h_in = InputBox("Enter marks of Hindi"):
```

`Max = InputBox("Enter max value of marks")`

Eng c  
Eng S

..... not .....  
End class

Public Class Result

Inherits Student

Public Sub Calcs

tot = hin + mon + eng

avg = tot / 3

MsgBox("Total Marks : " & tot & " Average : "  
& avg)

End Sub

End Class

Public Class Form1

Private Sub Button1\_Click(ByVal sender  
As System.Object, ByVal e As

System.EventArgs)

Handles Button1.Click

Dim obj As New Result

obj = GetMarks()

obj.Calcs

End Sub

End Class

End Class

Class c2

Inherits c1

Shared Sub main()

Dim o As New c2()

o.hi()

End Sub

Overrides Sub hi()

Console.WriteLine("New and Improved method hi")

End Sub

End Class

### VIII. Resources required (Additional)

Windows 10

1.3 Processor

2 GB RAM

### IX. Precautions

1. Save the program in specific directory / folder.
2. Follow safety practices.

### X. Resources used (Additional)

VISUAL STUDIO 2017

### XI. Program Code: (Teacher must assign separate program statement to group of 3-4 student)

Write a program to implement the concept of method overloading & overriding

Public Class Sample2

Private -x As Double

Private -y As Double

Public Property x(c) As Double

Get

Return -x

End Get

Set (By Val value As Double)  
- x = value

End Set

End Property

```

public property y() as Double
Get
    Return y
End Get
Set (By Val value As Double)
    - y = value
End Set
End Property
Public Sub SetValues(By Val a As Double, By Val b As
    - x = a
    - y = b
End Sub
Public Sub SetValues (By Val a As Double)
    - x = a
    - y = a
End Sub
Public Function GetProduct() As Double
    Return -x * -y
End Function
End Class
Dim Obj As New Sample2
Obj.x = 5
Obj.y = 30
Message.Show ("product = " & Obj.GetProduct())
Dim Obj2 As New Sample2
Obj2.setValues (10, 20)
Message.Show ("product = " & Obj2.GetProduct())

```

## XII. Results (Output of the Program)

product = 150

product = 200

Note: Below given are few sample questions for more such questions so as to ensure the achievement of identified CO.

- Find output of following code.

Imports System

Module Module1

Class overload

Dim r As Double

Public Overloads Sub area(ByVal r)

Console.WriteLine("Area of the Circle: ")

Console.WriteLine( $\pi r^2$ )

End Sub

Dim length As Integer

Dim width As Integer

Public Overloads Sub area(ByVal length, ByVal width)

Console.WriteLine("Area of the Rectangle: ")

Console.WriteLine(length \* width)

End Sub

End Class

Sub Main()

Dim r As New overload()

r.area(3, 1)

r.area(4, 5)

End Sub

End Module

- Implement windows application for employee details using overriding methods

(Space for answers)

```
class Person
{
    public Name As String
    public Address As String
    public City As String
    public State As String
    public Zip As String
    Overridable Sub Print()
        Console.WriteLine(Name)
        Console.WriteLine(Address)
        Console.WriteLine(City + ", " + State)
        #ZEP
    End Sub
} End Class
```

```
Class Employee
    Inherits person
    Overrides Sub print()
        Console.WriteLine("Name : " & Name)
        Console.WriteLine("Address : " & Address)
        Console.WriteLine("City : " & City & " State : " & State & " ZIP : " & ZIP)
        Console.WriteLine("Salary : " & Salary)
    End Sub
    Public Salary As Integer
End Class
```

1)

Area of the circle is :

(A)  $\pi \cdot 31.415^2 = 314.159$

20.

- (A)  $31.415 \cdot 314.159$
- (B)  $31.415 \cdot 314.159^2$
- (C)  $314.159 \cdot 314.159$
- (D)  $314.159 \cdot 314.159^2$

- XIV. Exercise (Teacher must assign separate exercise to group of 3-4 student)**
1. Implement a windows application for show string concatenation using overload method.

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Page No. 10

(Space for answers)

```

Public class CalArea
    Dim res As Integer
    Public Sub Area(By Val r As Integer)
        res = 3.14 * r * r
        Console.WriteLine("Circle Area = " & res)
    End Sub
    Public Sub Area(By Val l As Integer, By Val b As Integer)
        res = l * b
        Console.WriteLine("Rectangle Area = " & res)
    End Sub
End Class

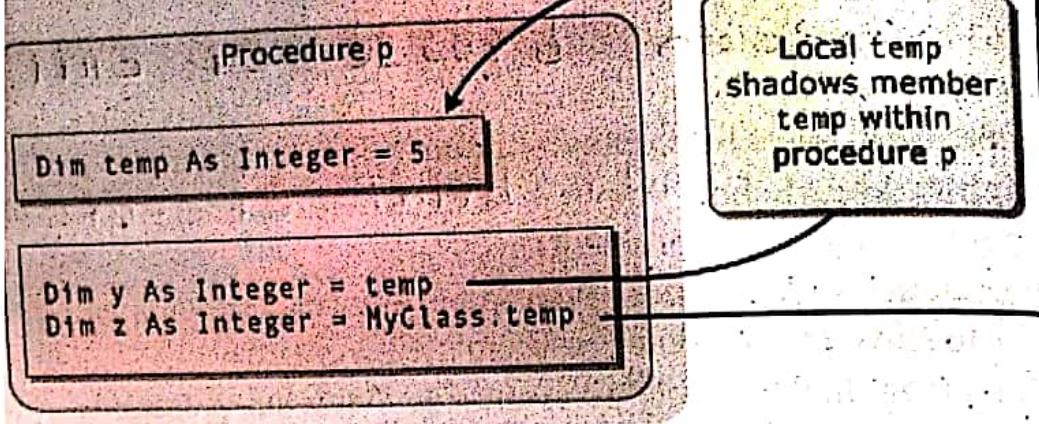
```

Date: 2013-07-20  
Page No. 11

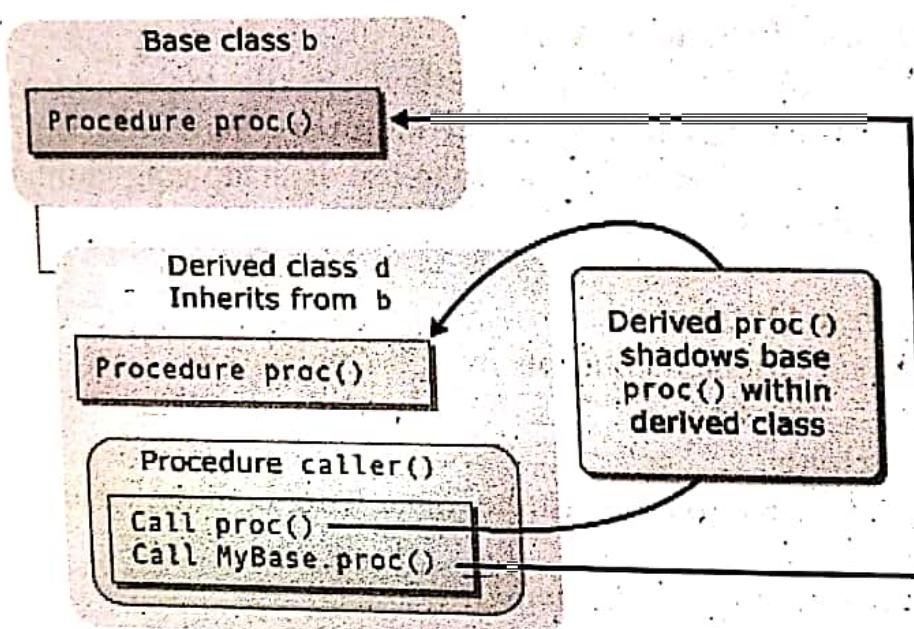
```

Public Class DemoPlay
    Sub main()
        Dim a As New CalArea()
        a.Area(5)
        a.Area(3, 4)
        Console.ReadLine()
    End Sub
End Class

```



## of Through Inheritance



ources required (Additional)

Windows 10

i3 Processor  
2 GB RAM

### Cautions

Save the program in specific directory / folder.  
Follow safety practices.

X. Resources used (Additional)

Visual Studio 2017

Events Jerry C. Eddy

XI. Program Code: (Teacher must assign separate program statement to group of 3-4 student)

Write a program to using shadowing in inheritance.

```
Public class FirstClass
    Public Sub display()
        MsgBox("This is Firstclass")
    End Sub
End Class

Public class SecondClass
    Inherits FirstClass
    Private Shadows Sub display()
        MsgBox("This is Second class")
    End Sub
End Class

Public class Third Class
    Inherits Second Class
    Public Shadows Sub display()
        MsgBox("This is Thirdclass")
    End Sub
End Class

Module callDisplay
    Dim first As New FirstClass
    Dim second As New SecondClass
    Dim third As New Third Class
    Public Sub call Display procedures()
        first.display()
        second.display()
        third.display()
    End Sub
End Module.
```

## XII. Results (Output of the Program)

This is first class

This is second class

This is Third class

in which due to printing  
method it print "x08 perri"

## XIII. Practical Related Questions

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. Write output of following code

```
Class Shadow
    Shared x As Integer = 1
    Shared Sub Main()
        Dim x As Integer = 10
        Console.WriteLine("main: x" & x)
        Console.WriteLine("main, sahdow,x;" & Shadow.x)
    End Sub
End Class
```

2. Write output of following code

```
Public Class Form2
    Dim x As Integer = 10
    Private Sub Button1_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button1.Click
        Dim x As Integer = 30
        MsgBox(x)
    End Sub
End Class
```

(Space for answers)

1>

main : x = 10

main shadow : x : = 1

2>

30

Info 2 strong

close : Blue

Minimize

Maximize

Exit

Minimize

Maximize

Close

XIV. Exercise (Teacher must assign separate exercise to group of 3-4 student)  
1. Implement the concept of shadowing through inheritance in a console application.

(Space for answers)

→

Imports System

Class Base

Sub F()

End Sub

Sub F(ByVal; As Integer)

End Sub

Sub G()

End Sub

Sub G(ByVal; As Integer)

End Sub

End Class

Class Derived

Inherits Base

'only hides F(Integer) overloads

Sub F(ByVal; As Integer)

End Sub

'Hides G() and G(Integer).Shadow

Sub G(ByVal; As Integer)

End Sub

End Class

Module Test

Sub main(C)

Dim x As Derived = New Derived(C)

x.f1() calls Base F(C)

x.G(C) ' Error: No Such method.

End Sub

End module

### VIII. Resources required (Additional)

Windows 10

i3 processor

2 GB RAM

### IX. Precautions

1. Save the program in specific directory / folder.
2. Follow safety practices.

### X. Resources used (Additional)

Visual Studio 2017

### XI. Program Code: (Teacher must assign separate program statement to group of 3-4 student)

Write any program using Exception handling.

module exceptionprog

Sub division(By val num1 As Integer, By val num2 As Integer)

Dim result As Integer

Try

result = num1 \ num2

Catch e As DivideByZeroException

Console.WriteLine("Exception Caught: {0}", e)

Finally

Console.WriteLine("Result : {0}", result)

End Try

End Sub

Sub main()

division(25, 0)

Console.ReadKey()

End Sub

End module

## XII. Results (Output of the Program)

Exception caught: System.DivideByZeroException  
at

Results

## XIII. Practical Related Questions

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. Write output of following code.

```
Module Module1
    Sub Main()
        Try
            Throw New Exception("Mega-error")
        Catch ex As Exception
            Console.WriteLine(ex.Message)
        End Try
    End Sub
End Module
```

2. Write output of following code.

```
Module Module1
    Sub Main()
        Try
            ' Try to divide by zero.
            Dim value As Integer = 1 / Integer.Parse("0")
            ' This statement is sadly not reached.
            Console.WriteLine("Hi")
        Catch ex As Exception
            ' Display the message.
            Console.WriteLine(ex.Message)
        End Try
    End Sub
End Module
```

(Space for answers)

1> Mega - error

2> Hill

#### XIV. Exercise (Teacher must assign separate exercise to group of 3-4 student)

1. Write a program for student registration using exception handling.

(Space for answers)

```
1. public class Form1  
    private Sub btnClicks_Click(ByVal sender As  
        System.Object, ByVal e As System.EventArgs)  
        Handles btnClicks.Click  
        Dim number1, number2, div As Integer  
        number1 = Val(TextBox1.Text)  
        number2 = Val(TextBox2.Text)  
        div = number1 / number2  
        MsgBox("Division is " & div)  
        Catch ex As OverflowException  
            Console.WriteLine("Division of 203 by  
                zero ", number1)  
        End Try  
    End Sub  
End Class
```

```
Dim Con as SqlConnection
Con=New SqlConnection("server=; user id=sa; password=sa;
Command
    Dim cmd As OleDbCommand
    cmd=New OleDbCommand("select * from student", con)
    Dim cmd As SqlCommand
    cmd=New SqlCommand("select * from student",con)

DataReader
    Dim dr As OleDbDataReader
    Dr=cmd.ExecuteReader
    Dim dr As SqlDataReader
    Dr=cmd.ExecuteReader

DataSet
    Dim dataset As New DataSet()
    Da.fill(dataset, "table1")

DataGrid
    DataGridView1.DataSource = ds.Tables(0)
```

## **VIII. Resources required (Additional)**

Windows 10  
i3 processor  
4 GB Ram

## **IX. Precautions**

1. Save the program in specific directory / folder.
  2. Follow safety practices.

## X. Resources used (Additional)

# Visual Studio Studio 2017 MS Access

**XI. Program Code: (Teacher must assign separate program statement to group of 3-4 student)**

**QUESTION**  
Write a program using ADO.Net to connect to the database.

e) Here is how to create a connection to a ms access Database

- ① open the ODBC icon on your control panel.
- ② choose the system DSN tab.
- ③ click on add in the System DSN tab.
- ④ select the Microsoft Access Driver.
- ⑤ In the next screen, select to locate the database.
- ⑥ give the database a Data source name (DSN).
- ⑦ click OK.

1. Enter DSN Name:   
 2. Select Driver: Microsoft Access Driver (MS Access)   
 3. Select Database File: C:\Users\DELL\Documents\Visual Studio 2010\Projects\Windows Application Project\Windows Application Project\bin\Debug\Windows Application Project.mdb  
 4. Click OK

#### XIV. Exercise (Teacher must assign separate exercise to group of 3-4 student)

1. Design the windows application that will dispaly the content of a table in MS-Access database on DataGrid control using data adapter.

(Ans)

(Space for answers)

```
Public Class Form1  
    Public Sub New()  
        InitializeComponent()  
        BindGrid()  
    End Sub  
  
    Private Sub BindGrid()  
        Dim consting As String  
        Using con As New SqlConnection  
            (consting)  
                Using cmd As New SqlCommand  
                    ("SELECT * From Customers", con)  
                        cmd.CommandType = CommandType.Text  
                        Using sda As New SqlDataAdapter(cmd)  
                            Using dt As New DataTable()  
                                sda.Fill(dt)  
                                dataGrid1.DataSource = dt  
                            End Using  
                        End Using  
                    End Using  
                End Using  
            End Using  
        End Using  
    End Sub
```

..... End Using  
..... End Using  
..... End Using  
..... End Sub  
..... End Class

.....Windows

.....I3 processor

.....2 GB RAM

## IX. Precautions

1. Save the program in specific directory / folder.
2. Follow safety practices.

## X. Resources used (Additional)

.....Visual Studio 2017

## XI. Program Code: (Teacher must assign separate program statement to group of 3-4 student)

Write a program using data adapter to connect to the database.

```
using OleDbDataAdapter;
private void OleDbDataAdapter_Click(object sender,
System.EventArgs e)
{
    String connectionString = @ "provider=microsoft.jet.
                                     oledb.4.0", t
                                     "Data Source=c:\northwind.mdb";
    String SQL = "SELECT * FROM orders";
    OleDbconnection conn = new OleDbconnection(connectionString);
    conn.open();
    OleDbDataAdapter adapter = new OleDbDataAdapter();
    adapter.SelectCommand = new OleDbCommand(SQL, conn);
    DataSet ds = new DataSet("orders");
    adapter.Fill(ds);
    dataGrid1.DataSource = ds.DefaultViewManager;
}
```

(27) "27th Dec 2019 - 10:00 AM - 12:00 PM  
**XII. Results (Output of the Program)**  
 1. 100% completion of the program.  
 2. Proper functioning of the application.  
 3. Proper handling of errors.  
 4. Proper use of comments.  
 5. Proper use of variables.  
 6. Proper use of loops.  
 7. Proper use of functions.  
 8. Proper use of arrays.  
 9. Proper use of structures.  
 10. Proper use of classes and objects.  
 11. Proper use of inheritance.  
 12. Proper use of polymorphism.  
 13. Proper use of exception handling.  
 14. Proper use of delegates and events.  
 15. Proper use of interfaces and implementation.  
 16. Proper use of reflection.  
 17. Proper use of serialization.  
 18. Proper use of ADO.NET.  
 19. Proper use of ADO.

### XIII. Practical Related Questions

*Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.*

- Find error in following code

```
Dim adp As SqlDataAdapter = New SqlDataAdapter("select * from Customers",
connection)
Dim ds As DataSet = New DataSet()
Fill(ds)
```

- Write a data adapter syntax using a MS Access code with a student table.

(Space for answers)

27. Imports OleDbDataAdapter

```
Private Sub OleDbDataAdapter_Click(ByVal sender
As Object, ByVal e As EventArgs)
    System.EventArgs)
```

'Create a connection object

```
Dim connectionString As String = "provider=
Microsoft.Jet.OLEDB.4.0;" + "datasource=c:/
data/northwind.mdb";"
```

```
Dim SQL As String = "SELECT * FROM orders"
```

```
Dim conn As OleDbConnection = New OleDbConnection-
ection.ConnectionString)
```

'open the connection

```
conn.Open()
```

```
'create an OleDbDataAdapter object
Dim adapter As OleDbDataAdapter = New OleDbDataAdapter()
'adapter OleDbDataAdapter()
'New OleDbCommand and (SQL, conn)
```

'create Data Set object

```

Dim ds As DataSet = New DataSet("orders")
'call DataAdapter's Fill method to fill dataform the
'Data Adapter to the DataSet.adapter.Fill(ds)
'Bind dataset to a DataGridView (contd)
DataGridView1.DataSource =
ds.DefaultViewManager
End Sub

```

```

1) Dim con As SqlConnection = New SqlConnection
("Data Source=PC.II-PC\KTM;
Initial Catalog=mkypos; UserID=SA;
password = 123")
Dim sqlstr As String = "Select * From
Supplier"
Dim adp As SqlDataAdapter = New SqlDataAdapter
(sqlstr, con)
Dim dt As New DataTable adp.Fill
(dt)

```

#### XIV. Exercise (Teacher must assign separate exercise to group of 3-4 student)

1. Design a window application in MS Access which have navigation (Next, First, Previous, Last).
2. Develop a window application that will contain multiple tables in a single dataset.

```

Private void bttnFirst_Click(object sender, EventArgs e)
{
    if (i > 0)
        i = 0;
    else if (i < ds.Tables[0].Rows.Count - 1)
        i++;
    else
        i = ds.Tables[0].Rows.Count - 1;
    txtBox1.Text = ds.Tables[0].Rows[i][0].ToString();
    txtBox2.Text = ds.Tables[0].Rows[i][1].ToString();
    txtBox3.Text = ds.Tables[0].Rows[i][2].ToString();
}

```

Next Button:- private void btnnext\_Click(object sender, EventArgs e)

IF C < ds.Tables[0].Rows.Count - 1 {

textBox1.Text = ds.Tables[0].Rows[i][“ID”].ToString();

textBox2.Text = ds.Tables[0].Rows[i][“empname”].ToString();

textBox3.Text = ds.Tables[0].Rows[i][“Salary”].ToString();

}

Last Button:- private void btnlast\_Click(object sender, EventArgs e)

i = ds.Tables[0].Rows.Count - 1;

textBox1.Text = ds.Tables[0].Rows[i][“ID”].ToString();

textBox2.Text = ds.Tables[0].Rows[i][“empname”].ToString();

textBox3.Text = ds.Tables[0].Rows[i][“Salary”].ToString();

}

Previous Button:- private void btnprevious\_Click(object sender, EventArgs e)

if C == ds.Tables[0].Rows.Count - 1 || i == 0

E

i - 1

textBox1.Text = ds.Tables[0].Rows[i][“ID”].ToString();

textBox2.Text = ds.Tables[0].Rows[i][“empname”].ToString();

textBox3.Text = ds.Tables[0].Rows[i][“Salary”].ToString();

}

else

i

11. No records to See more

3

3

- """, con);
- A Command object exposes several execute methods like:
    - ExecuteScaler()**  
Executes the query, and returns the first column of the first row in the result set returned by the query. Extra columns or rows are ignored.  
dr = cmd.ExecuteReader();
    - ExecuteReader()**  
Display all columns and all rows at client-side environment. In other words, we can say that they display datatables client-side.  
dr = cmd.ExecuteReader();
    - ExecuteNonQuery()**  
Something is done by the database but nothing is returned by the database.  
dr = cmd.ExecuteNonQuery();

### VIII. Resources required (Additional)

.....  
**window 10**  
 .....  
**13 processor**  
 .....  
**4 GB RAM**

### IX. Precautions

1. Save the program in specific directory / folder.
2. Follow safety practices.

### X. Resources used (Additional)

.....  
**visual studio 2017**

### XI. Program Code: (Teacher must assign separate program statement to group of 3-4 student)

Write a program to insert the data & retrieve the data from database.

```
Private Sub Button1_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button1.Click
    Dim con As New MySqlConnection("Server = localhost;
    ; User Id = root; database = property")
    Dim drd As MySqlDataReader
    Try
```

con.open()

Dim qr AS String

qr = "INSERT INTO

Property, login(FullNames, IDNO, pho, Name,

Gender) VALUES("

Text Box1.Text & " ", " , " , "

Text Box2.Text & " ", " , " , "

Text Box3.Text & " ", " , " , "

Text Box6.Text & " )")"

MySQL command cmd.ExecuteNonQuery()

rd = (0) ReadData

cmd.ExecuteNonQuery()

MsgBox("Saved")

End Try

Catch ex As Exception

MessageBox.Show(ex.Message)

End Try

con.Dispose()

End Sub

End Class

Module MainModule

Sub Main()

Form1.ShowDialog()

End Sub

End Module

End Class

### XIII. Practical Related Questions

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. Write syntax of command object execute method.  
(Space for answers)

Syntax:-

ObjCmd...parameters.Item(CO.....)

ObjCmd(CO).....

To execute a query without using a command object, pass a query string to the Execute method of a Connection object or to the Open method of a Recordset object.

Syntax

Set

ObjCommand = Server.CreateObject

('ADo.DB.Command')

Method

① cancel :- cancel an execution

of a method

② Create Parameter = creates a new parameter object

③ Execute :- Execute the query SQL Statement or procedure in the CommandText property.

dim cnn as connection

dim cmd as command

dim cmd2 as command

dim str1 as string

dim str2 as string

cnn.open

cmd.connection = cnn

cmd.command = str1

cmd.execute

cmd2.connection = cmd

cmd2.command = str2

cnn.close

#### XIV. Exercise (Teacher must assign separate exercise to group of 3-4 student)

1. Write working of each line in the following code

```
Dim strQuery As String = "select Name, ContentType, Data from tblFiles where id=@id"
```

```
Dim cmd As SqlCommand = New SqlCommand(strQuery)
```

```
cmd.Parameters.Add("@id", SqlDbType.Int).Value = 1
```

```
Dim dt As DataTable = GetData(cmd)
```

```
If dt IsNot Nothing Then
```

```
    download(dt)
```

```
End If
```

2. Design a simple Windowsform for accepting the details of Employee. Using the connected architecture of ADO.NET, perform the following operations:

- Insert record.
- Search record.
- Update record.
- Delete record.

(Space for answers)

## ① Insert record

```
cmd = new SqlCommand ("INSERT  
Employee (EMP_ID, EMP_Name)  
values ('t.aat', 't.bbt')", con);
```

## ② Search record

```
cmd = new SqlCommand ("Search *  
from employee",
```

## ③ Update record

```
Sql_command cmd = new SqlCommand  
("update  
Employee set  
EMPID = 't.aat', EMP_Name = 't.bbt'  
WHERE EMP_ID = 't.aat'", con);
```

## ④ DELETE record

```
cmd = new SqlCommand ("DELETE FROM  
Employee where  
EMPID = 't.aat'", con);
```

```

② Import System.Data.OleDb
public class Form1
    Dim myDA As OleDbDataAdapter
    Dim myDataset As Dataset
    Private Sub Form1_Load(ByVal sender As System
                           Object ByVal e As System.EventArgs) Handles MyBase.Load
        Dim con As OleDbConnection = New OleDbConnection
        (' provider=Microsoft.Jet.OLEDB.4.0;data source
        ' C:\Data\directory\my.DB.mdb')
        Dim cmd As OleDbCommand = New OleDbCommand("SELECT * FROM Table1", con)
        MyDA = New OleDbDataAdapter(cmd)
        Automatically generate deletecommand update
        command and insert command for DataAdapter
        object
        Dim builder As OleDbCommandBuilder = New
        OleDbCommandBuilder(MyDA)
        MyDataSet = New DataSet()
        MyDA.Fill(MyDataSet, "MyTable")
        DataGridview1.DataSource = MyDataSet.Tables
        ("MyTable").DefaultView
        con.Close()
        con = Nothing
    End Sub
    Save data back into database
    Private Sub Button1_Click(ByVal sender
                           As System.Object ByVal e As
                           System.EventArgs) Handles Button1.Click
        Me.Validate()
        Me.MyDA.Update(Me.mydataset, Table("my
        Table"))
        Me.mydataset.AcceptChanges()
    End Sub
End Class

```

## VIII. Resources required (Additional)

.....  
..... windows 10

.....  
..... 13 processor

.....  
..... 4 GB RAM

## IX. Precautions

1. Save the program in specific directory / folder.
2. Follow safety practices.

## X. Resources used (Additional)

.....  
..... visual studio 2017

## XI. Program Code: (Teacher must assign separate program statement to group of 3-4 student)

Write a program using data binding in VB.Net

```
Import System.Data
Imports System.Data.OleDb
Public Class Form1
    Private Conn As Form1.OleDbConnection
    Private Adpt As OleDbDataAdapter
    Private CmdBld As OleDbCommandBuilder
    Private MyDs As Dataset
    Private SqLStr As String
    Private Sub Form1_Load(ByVal Sender As System.Object
        ByVal e As System.EventArgs) Handles MyBase.Load
        Dim ConnStr As String = "Provider=Microsoft.Jet.OLEDB
            Version=4.0 Data Source=D:\Employee File.mdb"
        Conn = New OleDbConnection(ConnStr)
        Conn.Open()
        MyDs = New DataSet()
        SqLStr = "SELECT * FROM emp"
        Adpt = New OleDbDataAdapter(SqLStr, Conn)
        Adpt.SelectCommand = Command.Text = SqLStr
        CmdBld = New OleDbCommandBuilder(Adpt)
        Adpt.Fill(MyDs, "emp")
        ComboBox1.DataSource = MyDs.Tables(0)
        ComboBox1.DisplayMember = "ename"
    End Sub
End Class
```

### XIII. Practical Related Questions

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. Write a syntax of simple binding for text box.
2. Write a syntax of complex binding for combo box.

(Space for answers)

1.  
Me.txt.CustomerID.DataBindings.Add(CNew.System.Windows.Forms.Binding("Text", Me.Dataset1,  
"Customers.CustomerID"))  
Me.text.CompanyName.DataBindings.Add(CNew  
System.Windows.Forms.Binding("Text", Me.Dataset1,  
"Customers.CompanyName"))  
Me.txt.ContactName.DataBindings  
("Text", Me.Dataset1,  
"Customers.ContactName"))  
  
2. private sub  
CmbRegion.SelectedIndexChanged  
e(sender, eventargs).Handles  
CmbRegion.SelectedIndexChanged  
Dim frm AS propertymanager  
Directcast(Me.BindingContext(M  
e), BizobjSMRC.ProductMaster)  
System.Windows.Forms.propertymanager  
Pm.EndCurrentEdit()  
end sub.

M.L.

#### XIV. Exercise (Teacher must assign separate exercise to group of 3-4 student)

1. Design a window application for student name and college name using a simple data binding use appropriate database.
2. Design a window application for bank customer record & display it using Complex data binding use appropriate database.

(Space for answers)

1) private table AS New Datatable  
private sub ShowDetails button\_Click  
By val sender AS System.Object  
By val e AS System.EventArgs

Handles ShowDetailsButton\_Click

Try

DataGrid1.DataSource = table

OleDbDataAdapter1.SelectCommand

CommandText =

"Select \* From Artists Where"

& "Sales >= " & SalesAboveBox.Text  
table.Clear()

OleDbDataAdapter1.Fill(table)

Catch exception Object As Exception

MessageBox.Show(exception.Object.Message)

End Try

End Sub

2) Private Table As New DataTable()

Private Sub BankButton\_Click(ByVal sender As

System.Object - ByVal e As System.EventArgs())

Handle Bank Button Click

Try

Dim CommandBuilder As New

OleDbCommandBuilder(OleDbAdapter1)

OleDbDataAdapter1.Update(table)

Catch exception Object As Exception

MessageBox.Show(exception.Object.Message)

End Try

End Sub

## VIII. Resources required (Additional)

Windows LO  
4 GB RAM  
13 processor

## IX. Precautions

1. Save the program in specific directory / folder.
2. Follow safety practices.

## X. Resources used (Additional)

Visual Studio 2017

## XI. Program Code: (Teacher must assign separate program statement to group of 3-4 student)

Write a program to navigate in the database.

```
Imports System.Data.SqlClient
```

```
Public Class Form1
```

```
Inherits
```

```
System.Windows.Forms.Form
```

```
Dim strconnection As String = "Data Source=
```

```
\.\SQLOUT; Integrated Security= SSPI; Initial
```

```
Catalog = Fin Accounting"
```

```
Dim mycon As SqlConnection
```

```
Dim myadapter As DataSet
```

```
Dim strSQLUserSelect As String = "SELECT * FROM
```

```
ACCOUNTS Table"
```

```
Dim my command As SqlCommand
```

```
Private Sub Form1_Load(ByVal sender As Object,
```

```
ByVal e As System.EventArgs) Handles
```

```
MyBase.Load
```

```
Dim i, j As Integer
```

```
mycon = New
```

```
SqlConnection(strconnection) Mycon.Open()
```

~~My adapter = New~~

```
SqlDataAdapter(strSQLUserSelect Mycon)
```

```
myaccountdataset = New DataSet()
```

```
My adapter.Fill(myaccountdataset
```

```
"ACCOUNTS Table")
```

```
My accountdataset.Tables("ACCOUNTS Table")
```

```
For i = 0 To (j - 1)
```

```
rows count
```

```
MsgBox("My accountdataset, Table
```

Maharashtra state Board of Technical Education  
SC/ACCOUNT TABLES/ROW COUNT  
Next  
End Sub

### XIII. Practical Related Questions

*Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.*

1. Write a method to count Rows in table.

(Space for answers)

1. COUNT() Function. The SQL COUNT() function returns the number of rows in a table satisfying the criteria specified in the WHERE clause.

It sets the number of rows even NULL column values. COUNT() returns 0 IF there were no matching rows

(Space for answers)

- a] 1] Data menu → Add data sources
- b] you will get following window
- c] select database and click next
- d] Select new connection
- e] set data source and database file name
- f] Click OK
- g] Select Next → Next
- h] Select Tables option and click Finish  
Data source is added
- i] To see the data source - datamenu → Show data sources
- j] Now drag required fields on the form
- k] Run the program

## 2] First Button

```

private void btnFirst_Click(object sender, EventArgs e)
{
    if (ds.Tables[0].Rows.Count > 0)
    {
        i = 0;
        textBox1.Text = ds.Tables[0].Rows[i][0].ToString();
        textBox2.Text = ds.Tables[0].Rows[i][1].ToString();
        textBox3.Text = ds.Tables[0].Rows[i][2].ToString();
    }
}

Next Button : private void btnNext_Click(object sender, EventArgs e)
{
    if (i < ds.Tables[0].Rows.Count - 1)
    {
        textBox1.Text = ds.Tables[0].Rows[i + 1][0].ToString();
        textBox2.Text = ds.Tables[0].Rows[i + 1][1].ToString();
        textBox3.Text = ds.Tables[0].Rows[i + 1][2].ToString();
    }
}

Last Button : private void btnLast_Click(object sender, EventArgs e)
{
    i = ds.Tables[0].Rows.Count - 1;
    textBox1.Text = ds.Tables[0].Rows[i][0].ToString();
    textBox2.Text = ds.Tables[0].Rows[i][1].ToString();
    textBox3.Text = ds.Tables[0].Rows[i][2].ToString();
}

```

3

Previous... Button = private void bt\_nPrevious\_Click(object sender, EventArgs e)  
 .....  
 ..... IF Ci == ds.Tables[0].Rows.Count - 1 C12 == 1  
 .....  
 ..... TextBox1.Text = ds.Tables[0].Rows[i].Student.ToString()  
 ..... TextBox2.Text = ds.Tables[0].Rows[i].Salary  
 .....  
**XV. References / Suggestions for further Reading**

1. [https://www.dotnetheaven.com/article/record-searching-navigation-in-vb.net\(20/07/2018\)](https://www.dotnetheaven.com/article/record-searching-navigation-in-vb.net)
2. [https://www.homeandlearn.co.uk/NET/nets12p7.html\(20/07/2018\)](https://www.homeandlearn.co.uk/NET/nets12p7.html)

#### **XVI. Assessment Scheme**

<b>Performance Indicators</b>		<b>Weightage</b>
<b>Process related(15 Marks)</b>		<b>30%</b>
1.	Debugging ability	20%
2.	Follow ethical practices.	10%
<b>Product related (35 Marks)</b>		<b>70%</b>
3.	Correctness of Program codes	25%
4.	Quality of input/output messaging and output formatting	25%
5.	Timely Submission of report	10%
6.	Answer to sample questions	10%
<b>Total (50 Marks)</b>		<b>100%</b>

#### **List of Students /Team Members**

1. ....
2. ....
3. ....
4. ....

<b>Marks Obtained</b>			<b>Dated signature of Teacher</b>
<b>Process Related (15)</b>	<b>Product Related (35)</b>	<b>Total (50)</b>	
13	29	42	ES 20/07/2018

## Practical No.32: Develop An Executable File and Deploy It.

### Practical Significance:

- I. The process of setting up executable file to order system is called deployment. To deploy an application, you create another type of project called an installer. An installer consists of two files named Setup.exe and Setup.msi.

### Relevant Program Outcomes (POs)

- **Discipline knowledge:** Apply Computer Programming knowledge to solve the computer group related problems.
- **Experiments and practice:** Plan to perform experiments and practices to use the results to solve the computer group related problems.
- **Engineering tools:** Apply relevant Computer programming / technologies and tools with an understanding of the limitations.
- **Communication:** Communicate effectively in oral and written form.

### II. Competency and Practical Skills

This practical expects to develop the following skills in the student.  
Develop VB.NET programs to solve computer group related problems.

1. Write a program for creating a executable file and deploy it.
2. Compile/Debug/Save the 'VB.NET' program.

### III. Relevant Course Outcomes

- Use Data Binding in GUI Application.

### IV. Practical Outcome

- Create Executable file of VB.Net Application and deploy it to other computer.

### V. Relevant Affective domain related Outcome(s)

1. Follow safety measures.
2. Follow ethical practices.

### VI. Minimum Theoretical Background

The process of setting up executable file to order system is called deployment. This appendix uses the term Setup project to refer to a specific type of project supported by Visual Studio. The Setup project bundles all of the elements of an application so that it can be distributed to another computer.

The end user's computer is called the target computer. The end user typically runs the installer (the file named Setup.exe) that you created to install your application on their computer.

### III. Resources required (Additional)

Windows 10

i3 Processor

4 GB RAM

#### **IX. Precautions**

1. Save the program in specific directory / folder.
2. Follow safety practices.

#### **X. Resources used (Additional)**

visual studio 2017

#### **XI. Program Code: (Teacher must assign separate program statement to group of 3-4 student)**

Write a program to create the executable & deploy the file.

Static void main()

{

Application. Enables VisualStyles();

Application. SetCompatibleTextRenderingDefault(true);

Process[] process = Process.GetProcessesByName("ProcessName");

if (process.Length > 1) Application.Exit(); // prevent multiple instance

if (process.Length >

{

messageBox.Show("Application Name? is already  
refer this instance will now close.",

(ApplicationName));

messageBox.Button.OK;

messageBox.Icon.Information;

Application.Exit();

else {

Application.Run(new <Initial Form>());

}

}

01 autoexec

002292009 61

1144 80 11

## **IX. Precautions**

1. Save the program in specific directory / folder.
2. Follow safety practices.

## **X. Resources used (Additional)**

visual studio 2017

## **XI. Program Code: (Teacher must assign separate program statement to group of 3 student)**

Write a program to create the executable & deploy the file.

```
Static void main()
```

```
{ Application.EnableVisualStyles(); }
```

```
Application.SetCompatibleTextRenderingDefault(true);
```

```
Process[] process = Process.GetProcessesByName("Product");
```

```
if (process.Length > 1) { Application.Exit(); }
```

```
else { MessageBox.Show("Application Name? is already  
refer this instance will now close.",
```

```
"Application Name?",
```

```
MessageBoxButtons.OK,
```

```
MessageBoxIcon.Information);
```

```
Application.Exit(); }
```

```
else {
```

```
Application.Run(new <Initial Form>()); }
```

```
}
```

```
}
```

01 working  
program &  
main.cs

## Results (Output of the Program)

1. Application developed using VB.NET  
2. Application developed using C#  
3. Application developed using Java  
4. Application developed using Python  
5. Application developed using C/C++  
6. Application developed using JavaScript  
7. Application developed using VBScript  
8. Application developed using JSP

### Practical Related Questions

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. List type of setup files
2. Write steps to create setup file.

(Space for answers)

- ① AIF.....Audio Interchange File Format
- ② AU.....BASIC multi Audio
- ③ AVI.....multimedia Audio /video
- ④ BAT.....P.C. batch File
- ⑤ BMP.....Window Bitmap
- ⑥ CVS.....Canvas
- ⑦ DBF.....dbase II
- ⑧ DIF.....Data Interchange Format
- ⑨ EPS.....Encapsulated PostScript
- ⑩ EXE.....P.C. Application

Answ

- 1- Step 1:- Create the C# windows form application.  
Click file, then select New, then select project choose the visual C# node in the project types tree, then select windows forms application.
- 2- Step 2:- Create the installer for the application  
click file, then click New, then click project.

- XIV. Exercise (Teacher must assign separate exercise to group of 3-4 student)
1. Create a MySetup.exe file using student registration project (Create Student Registration windows application)
  2. Deploy college admission form.

(Space for answers)

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Student name	xyz	
Sex	male	Female
Email ID		
Phone no		
Father name	Phone no	
Mother name	Phone no	
<del>Address</del>		
<input checked="" type="checkbox"/> Student sign	<input type="checkbox"/> parent sign	

```

    Private Sub register(ByRef sqlQuery As String)
        Try
            'OPENING THE CONNECTION
            con.Open()
            'HOLDS THE DATA TO BE EXECUTED
            With cmd
                connection = con
                commandText = sqlQuery
            End With
            'EXECUTE THE DATA
            result = cmd.ExecuteNonQuery()
        End Try
    End Sub

```

```

.....CHECKING IF THE DATA HAS BEEN EXECUTED OR NOT.
.....IF result > 0 Then
.....    msgBox("User has been registered.")
.....ELSE
.....    msgBox("Failed to register the user")
.....End If
.....con.Close() catch ex As Exception
XV. References / Suggestions for further Reading msgBox("ex.message")
1. https://www.dotnetheaven.com/article/deploying-from-visual-studio-using-
   vb.net(20/07/2018)
End Try
End Sub

```

## XVI. Assessment Scheme

Performance Indicators		Weightage
Process related(15 Marks)		30%
1.	Debugging ability	20%
2.	Follow ethical practices.	10%
Product related (35 Marks)		70%
3.	Correctness of Program codes	25%
4.	Quality of input/output messaging and output formatting	25%
5.	Timely Submission of report	10%
6.	Answer to sample questions	10%
Total (50 Marks)		100%

### List of Students /Team Members

1. ....
2. ....
3. ....
4. ....

Marks Obtained			Dated Signature Of Teacher
Process Related (15)	Product Related (35)	Total (50)	
14	29	43	OS 1/1/2018