Microsoft® Visual Studio®

# VISUAL BASIC6.0


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# Visual Basic 6.0

- VB is an Event- Driven programming
- VB has different objects called ***Forms and Controls.***
- Each object has its own properties (Colour, height, name etc)

- Visual Basic programs display a Windows style screen (called a ***form***) with boxes into which users type and edit information and buttons that they click to initiate actions.

•

- Controls: The boxes and on the form (text boxes, command button etc ) are referred to as ***controls***.

- Form and controls are called ***objects***.

# HOW TO START VISUAL BASIC?


FIG.1.1 NEW PROJECT WINDOW

**TO START VISUAL BASIC,THE STEPS ARE-**

1. **click on start → all programs → microsoft visual basic studio 6.0 → microsoft visual basic 6.0**

2. **the new project window appears (fig.1.1)**

**the new project window has three tabs:-**

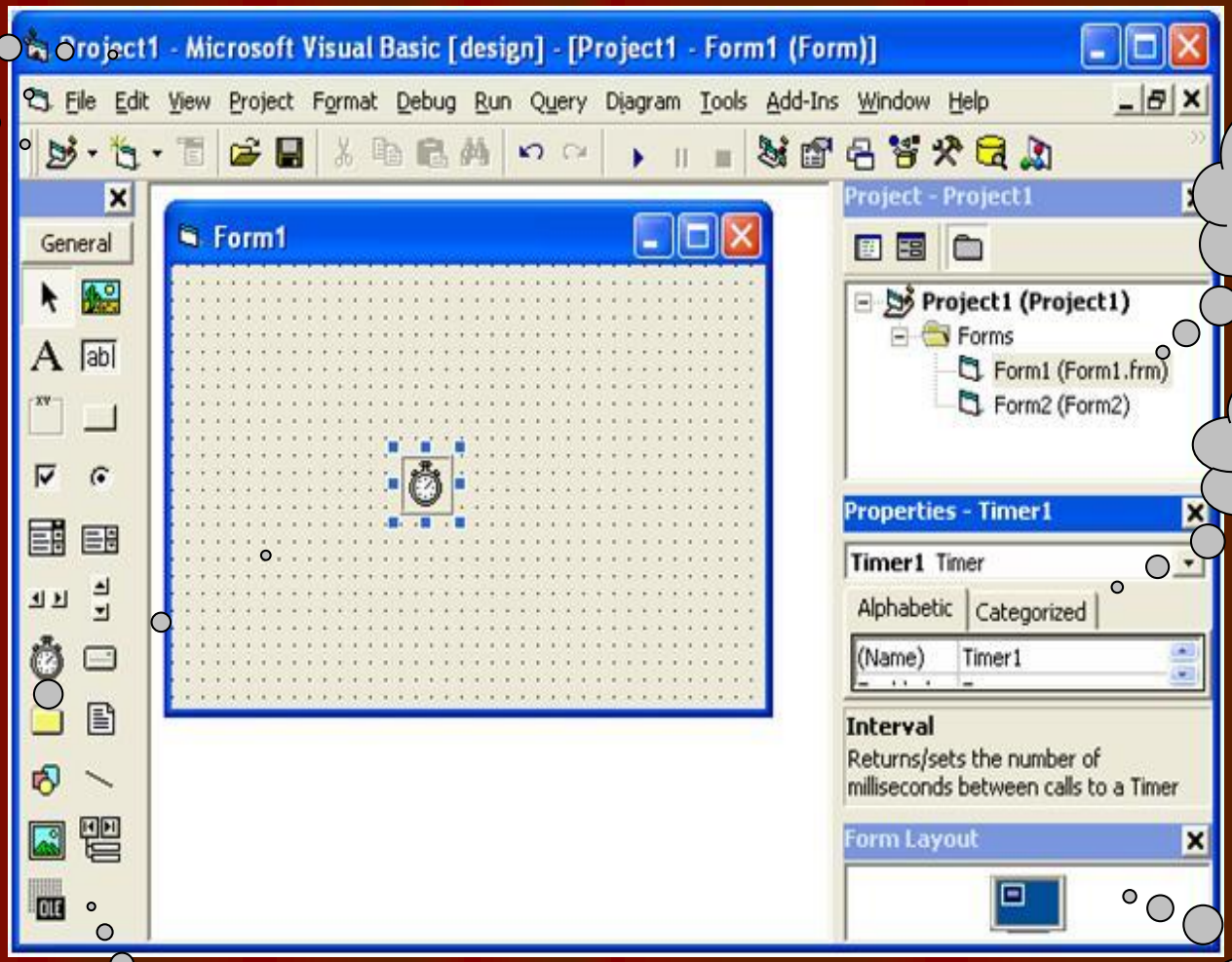
1) **new**:to start a new project.

2) **existing**:to select from a list of existing projects.

3) **recent**:to select from the list of recently opened projects.in

**the new tab ,select standard.exe application .this opens the microsoft visual basic window.**

# COMPONENTS OF VB WINDOW




Title bar

Menu bar

Tool bar

Form window

Tool box

Project window

Properties window

Properties layout window

**FIG 1.2 COMPONENTS OF WINDOW**

# ❖MENU BAR AND TOOL BAR

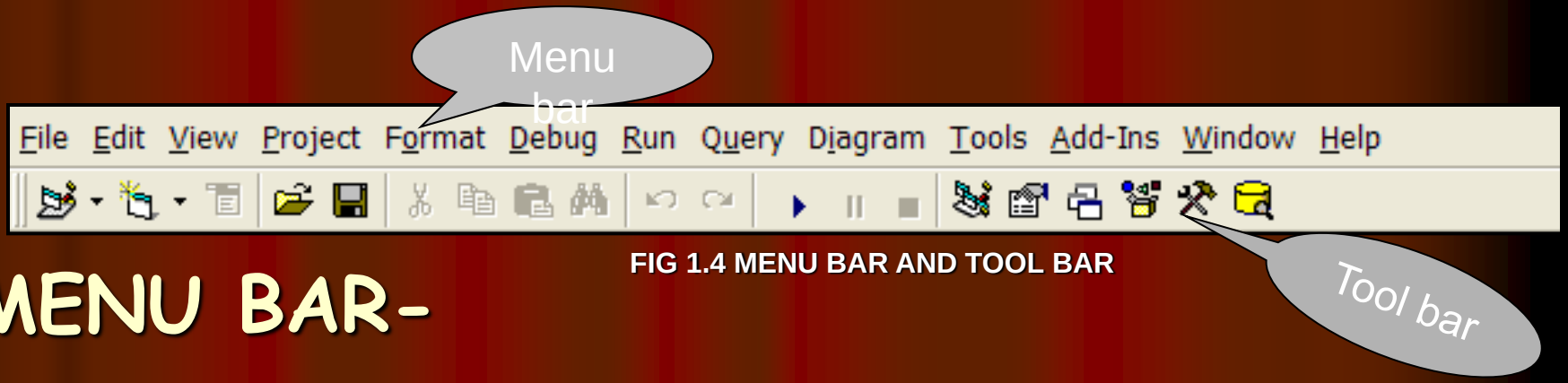



FIG 1.4 MENU BAR AND TOOL BAR

## MENU BAR-

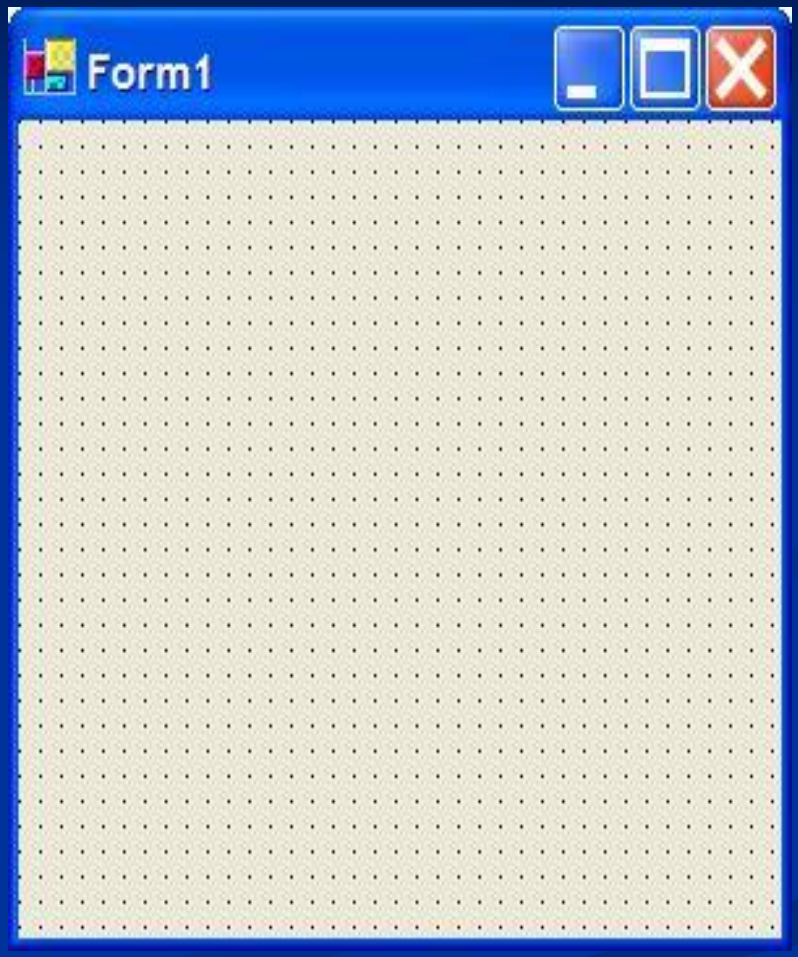
The menu bar(fig 1.4) consists of Many drop-down menus.Clicking on any of The option ofthe menu bar makes it Active.

## TOOL BAR-

The tool bar(fig 1.4) has buttons that Provide some of the menu options.

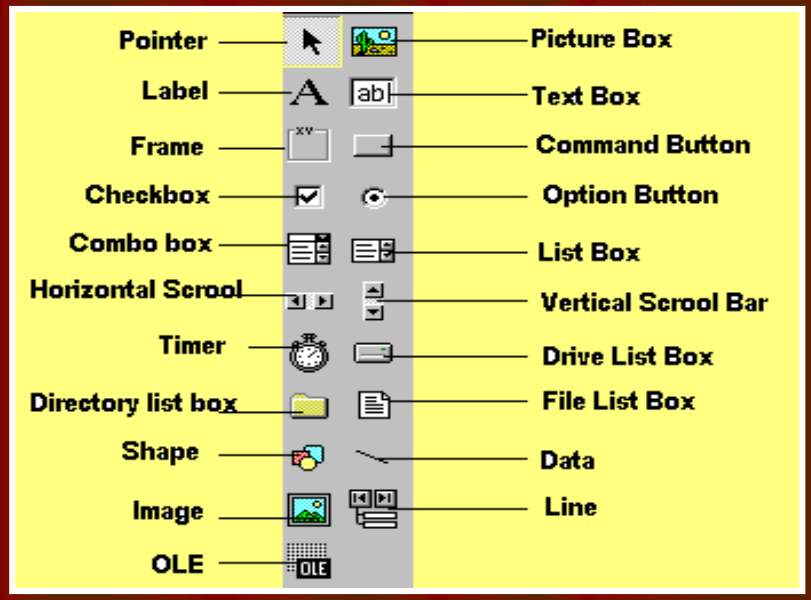
# ❖FORM WINDOW

The form window is the primary work area that forms the background of the application .The user can draw objects on the form.



# ❖ TOOLBOX

The toolbox contains icons that represent commonly used controls such as label, textbox, command button ,etc.



# ❖PROJECT WINDOW

IT DISPLAYS A LIST OF ALL FORMS THAT MAKES UP THE APPLICATION.IT HAS THREE BUTTONS ON THE TOP LEFT.(FIG 1.7)

1.CLICK ON VIEW OBJECT TO OPEN A FORM.

2.CLICK ON VIEW CODE TO OPEN CODE WINDOW.

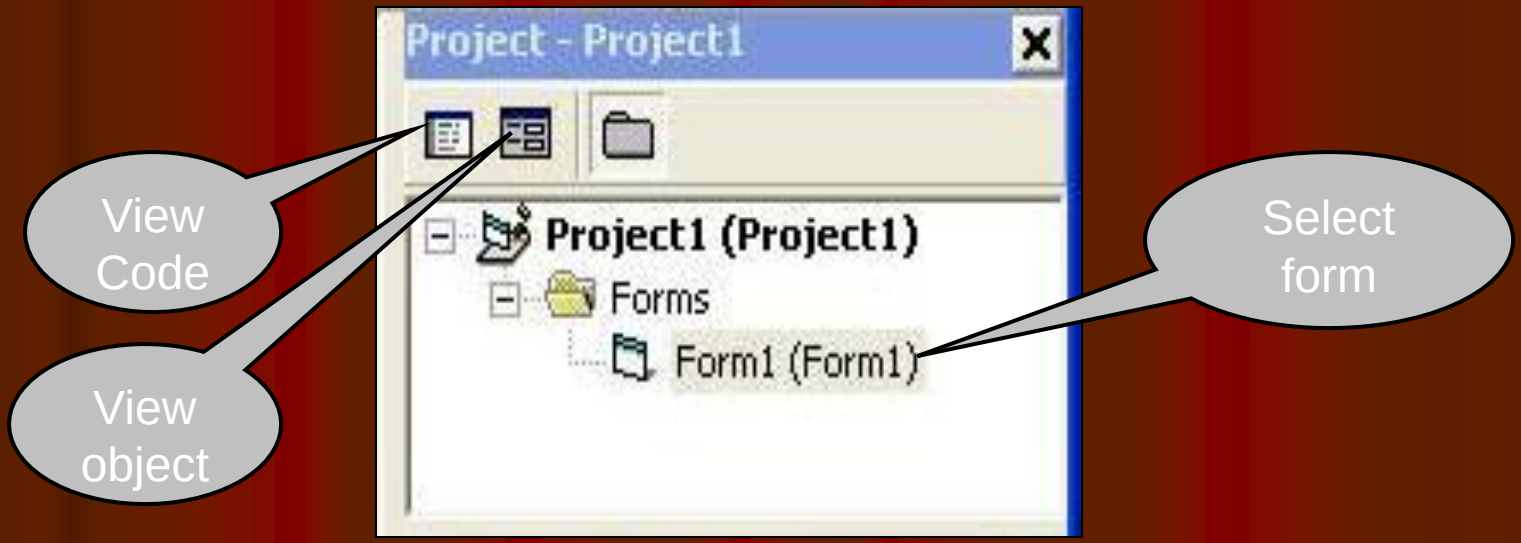



FIG 1.7 PROJECT WINDOW

# ❖PROPERTIES WINDOW

The properties window lists the property of the selected Controls or for the form.

The property window has two tabs:

1. The **alphabetic** tab list all the properties in alphabetic order.(Fig 1.8)
2. The **categorized** tab lists the properties category-wise(fig 1.9)

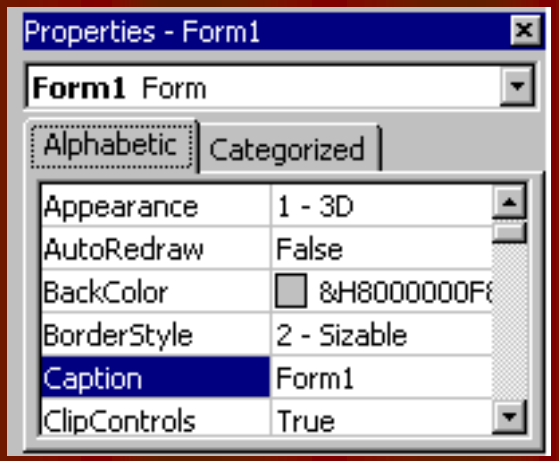



FIG 1.8 ALPHABETIC TAB OF PROPERTIES WINDOW

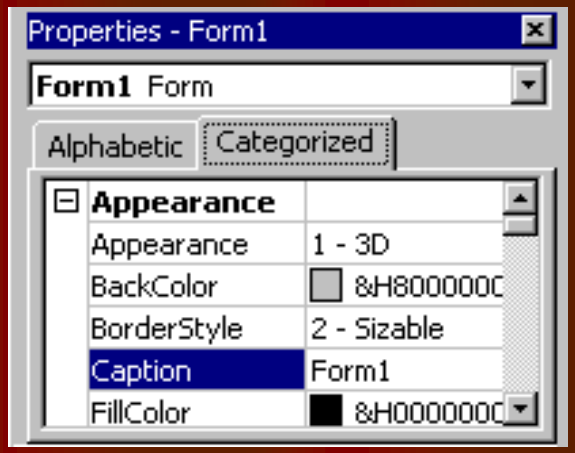
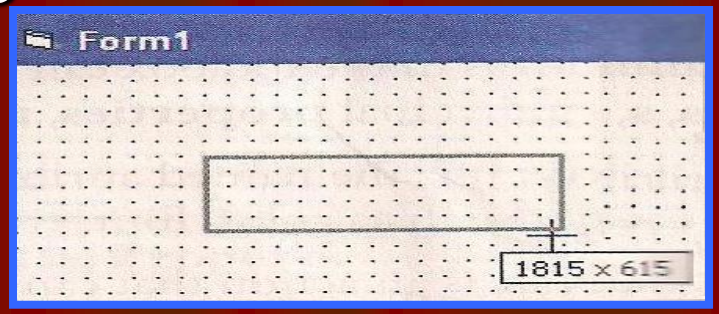



FIG 1.9 CATEGORIZED TAB OF PROPERTIES WINDOW

# How to place controls on the form?

- **Click on the control icon in the toolbox and then click on the desired location on the form.Drag the mouse diagonally so that the control has the desired size.(Fig 1.14)**




- **To reposition the control ,hold down the left mouse button and drag the control to a new location,**

- **To resize the control,click the control,drag one of its edges or corners.**

# ❖Properties:

Caption : it sets the title of the form

Name :it gives the name of the form with which it is referred to in the code. The default value is form.

Appearance: value 1 makes the form look like three- Dimensional.Value 0 makes the form look flat.

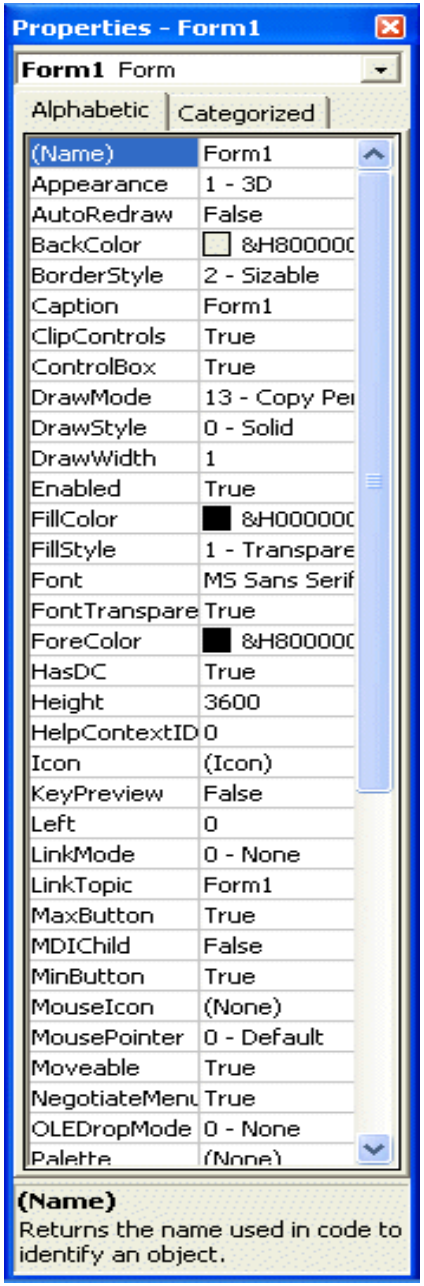
Font:it sets the font type ,font style and font size for the text.

Fore color :it sets the color for the text on the form.

Enabled:value true makes the form respond to mouse And keyboard events.Value false makes the form responding to any event.

Back color:it sets the form's background color.

Visible: value false makes the form invisible



# LABEL


Labels are used to display heading and messages

## PROPERTIES

**NAME: This hold the name of the label. E.g lblName, iblCity.**

**CAPTION:** This is the text displayed in the label.

**Font: T**his sets font,font style and font size.

**Border style:T**his determines the type of border.

**Appearance:** this is 3-d in appearance.

**Events**

**Click:** this event is triggered when the user clicks on the label.

**Double click:T**his event is triggered when th user double-clicks on the label

# Textbox 

The text boxes are used to enter / accept the information.

## Properties

**Name:**This is the name used to refer to the textbox in the code. E.g txtName, txtCity

A**ppearance: T**his is 3-d or flat in appearance

**Maxlength: T**his limits the length of the text.

value 0 indicates limited length.

**Multiline:** This specifies whether the textbox displays a single line or multiple lines.

**PASSWORD CHAR:** THIS HIDES THE TEXT WITH A SINGLE CHARACTER(USUALLY*IS USED).

**ENABLED:** VALUE TRUE/FALSE DETERMINES WHETHER THE TEXTBOX RESPONDS TO ANY EVENT OR NOT.

**LOCKED:** VALUE TRUE/FALSE DETERMINES WHETHER THE TEXTBOX RESPONDS TO ANY EVENT OR NOT.

**LOCKED:** VALUE TRUE/FALSE DETERMINES WHETHER THE TEXTBOX CONTENTS CAN BE CHANGED OR NOT.

**TEXT:** THIS IS THE STRING TO BE DISPLAYED IN THE TEXTBOX.

## EVENTS

**CHANGE:** THIS EVENT IS TRIGGERED EVERY TIME WHEN THE TEXTBOX DISPLAYS A SINGLE LINE OR MULTIPLE LINE.

**COMMAND BUTTON** 

The command button is very important control as it is used to execute commands

**PROPERTIES:**

**Name :Holds the name of command button.**

**E.g cmdSum, cmdExit**

**APPEARANCES:** This is 3-d or flat in appearance.

**Caption: T**his is the string that is displayed on the command button.

**Visible:** value true/false **determines** whether it is visible or not.

**Font:** This sets font, font style and font size.

**Enabled:** value true/false determines whether it responds to an event or not.

**Events click:**this event is triggered when it is selected by cllicking on it.

## Val() Function:

It is used to convert a text into numeric value that can be used for arithmetic calculation.

## FormatNumber():

This function a string of character formatted as specific number of digits after the decimal point for the given value. The thousand separator is added to the value by default.

e.g Amt=2564.5643

FormatNumber(Amt,2) will display 2,564.56

FormatNumber(Amt,0) will display 2,565

# Simple project in VB

| Object | property | Value |
|---|---|---|
| Form | Name | frmTybcom |
| | Caption | My First Form |
| Label | Name | lblName |
| | Caption | Good Morning Students |
| Command Button | Name | cmdWelcome |
| | Caption | &Welcome |
| Command Button | Name | cmdExit |
| | Caption | &Exit |

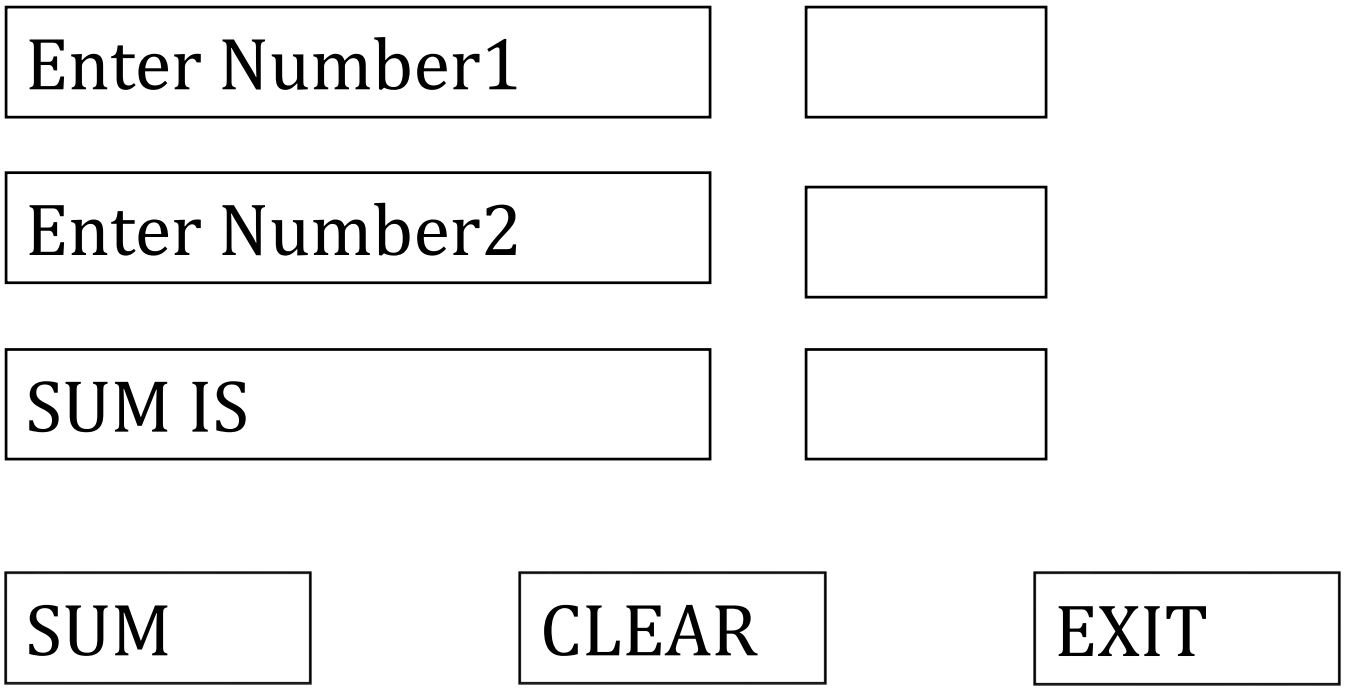
- Steps to Create Project:

- Click at File ⟶ New
- Go to property window change Name as *frmTybcom* and Caption as My *First Form*
- Click at Label from the Toolbox, Go to Form and draw a rectangle for message
- Goto property window change Name as *lblName* and caption as Good Morning Students
- Click at Command button from the Toolbox, goto form and draw rectangle for Welcome
- Goto property window change Name as *cmdWelcome* and Caption as Welcome

- Click at Command button from the Toolbox, goto form and draw rectangle for Exit
- Goto property window change Name as *cmdExit* and Caption as &Exit
- Double click on Welcome command button to go to the code window and type
- MsgBox “Welcome to learn Visual Basic” in between Private Sub cmdWelcome_Click and End Sub
- Double click on Exit command button to go to the code window and type End in between Private Sub cmdExit_Click and End Sub
- Click at File ⇨ Save project
- Press F5 to Run or Run ⇨ Start

# Practical No:1

## 1.Write a project in VB to design a suitable form to add two numbers and display their sum



# Controls and their properties

| Object | Property | Value /setting |
|---|---|---|
| Form | Name | frmSum |
| | Caption | Sum |
| Label1 | Name | lblNum1 |
| | Caption | Enter Number1 |
| Label2 | Name | lblNum2 |
| | Caption | Enter Number2 |
| Label3 | Name | lblSum |
| | Caption | Sum is |

| Object | Property | Value /setting |
|---|---|---|
| Text1 | Name | txtNum1 |
| | Text | Blank |
| Text2 | Name | textNum2 |
| | Text | Blank |
| Text3 | Name | txtSum |
| | Text | blank |
| Command1 | Name | cmdSum |
| | Caption | Sum |
| Command2 | Name | cmdClear |
| | Caption | Clear |
| Command3 | Name | cmdExit |
| | Caption | Exit |

- CODE:

**• Command1**

- **Private Sub cmdSum_Click()**
- **txtSum=Val(txtNum1) + Val(txtNum2)**
- **txtSum=FormatNumber(txtSum,2)**
- **End Sub**

**• Command2:**

- **Private Sub cmdClear_Click()**
- **txtNum1=“ “**
- **txtNum2=“ “**
- **txtSum=“ “**
- **End Sub**

**• Command3:**

- **Private Sub cmdExit_Click()**
- **End**
- **End Sub**

# Practical.No:1

2. Write a Project in VB to design a suitable form to enter total sales and calculate and display the Commission @8%

## Controls and their Properties:

| Object | Property | Value /setting |
|---|---|---|
| Form | Name | frmComm |
| | Caption | Commission |
| Label1 | Name | lblSales |
| | Caption | Total Sales |
| Label2 | Name | lblComm |
| | Caption | Commission |
| Text1 | Name | txtSales |
| | Text | “ ” (Blank) |
| Text2 | Name | textComm |
| | Text | “ ” (Blank) |

| Object | Property | Value /setting |
|---|---|---|
| Command1 | Name | cmdCalculate |
| | Caption | &Calculate |
| Command2 | Name | cmdClear |
| | Caption | &Clear |
| Command3 | Name | cmdExit |
| | Caption | &Exit |
| | | |

# CODES FOR COMMAND:

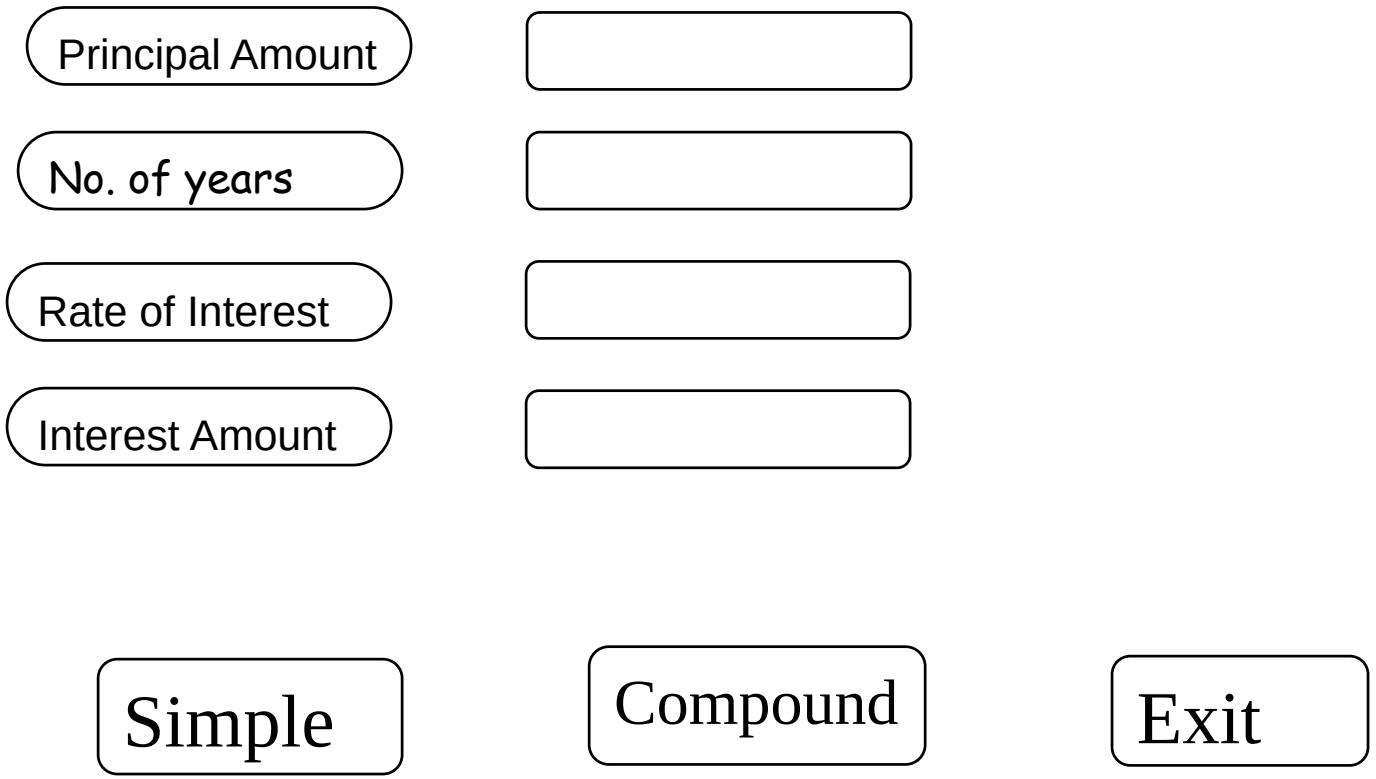
```
Private Sub cmdCalculate_Click()
txtComm = Val(txtSales)*0.08
End Sub

Private Sub cmdClear_Click()
txtSales =“  ”
txtComm=“  ”
End Sub

Private Sub cmdExit_Click()
End
End Sub
```

# PracticalNo:2

Write a Project in VB to prepare a form as follows to enter principal amount, years , rate of interest and calculate simple and compound interest.



# Controls and their properties

| Object | Property | settings |
|---|---|---|
| Form | Name | frmint |
| | Caption | Interest Calculation |
| Label1 | Name | lblPamt |
| | Caption | Principal Amount |
| Label2 | Name | lblYears |
| | Caption | No. of years |
| Label3 | Name | lblRate |
| | Caption | Rate of interest |
| Label4 | Name | lblInterest |
| | Caption | Interest Amount |

# Controls and their properties

| Object | Property | settings |
|---|---|---|
| Text1 | Name | txtAmt |
| | Text | “ ” (Blank) |
| Text2 | Name | textYears |
| | Text | “ ” (Blank) |
| Text3 | Name | txtRate |
| | Text | “ ” (Blank) |
| Text4 | Name | textInt |
| | Text | “ ” (Blank) |
| | Locked | True |

# Controls and their properties

| Object | Property | settings |
|---|---|---|
| Command1 | Name | cmdSimple |
| | Caption | &Simple |
| Command2 | Name | cmdCompound |
| | Caption | &Compound |
| Command3 | Name | cmdExit |
| | Caption | &Exit |

# Codes for the different commands:

```
Private Sub cmdSimple_Click()
txtInt = (Val(txtAmt)*Val(txtyears)*
Val(txtRate))/100
txtInt= FormatNumber(txtInt,2)
        End Sub

Private Sub cmdCompound_Click()
txtInt = Val(txtAmt)*(1+Val(txtRate)/100) ^
          Val(txtYears) – Val(txtAmt)
txtInt = FormatNumber(txtInt,2)
        End Sub

Private Sub cmdExit_Click()
        End
End Sub
```

PracticalNo:

Write a Project in VB to design a suitable form to enter Basic Salary and calculate and display the DA @85% of Basic Salary

## Controls and their properties

| Object | Property | settings |
|---|---|---|
| Form | Name | frDA |
| | Caption | DA |
| Label1 | Name | lblBasic |
| | Caption | Basic Salary |
| Label2 | Name | lblDA |
| | Caption | DA |

# Controls and their properties

| Object | Property | settings |
|---|---|---|
| **Text1** | **Name** | **txtBasic** |
| | **Text** | **“ ” (Blank)** |
| **Text2** | **Name** | **textDa** |
| | **Text** | **“ ” (Blank)** |
| Command1 | Name | cmdCalculate |
| | Caption | &Calculate |
| Command2 | Name | cmdClear |
| | Caption | &Clear |
| Command3 | Name | cmdExit |
| | Caption | &Exit |

```
Private Sub cmdCalculate_Click()
txtDa = Val(txtBasic)*0.85
End Sub
```

```
Private Sub cmdClear_Click()
txtBasic =“  ”
txtDa=“  ”
End Sub
Private Sub cmdExit_Click()
End
End Sub
```

form to allow the user to enter name of client,Number of share purchased from broker and rate. Calculate &display amount to be paid to the broker.

2. Write a Project in VB to design a suitable form to enter the length of the sides of a square. Calculate and display its area and perimeter

[area = side x side, Perimeter = 4 x side]

3. Write VB project to accept Name of student and marks in three subjects, Find and display average marks

# Variables and constants

Variables: It is the value changes during the program execution.

Declaration of variables:

Dim A As Single : floating point number

Dim B As Single with six digit of accuracy

Dim Age As Integer : Whole number

Dim Price As Currency: decimal fraction

such as Rs & Paisa

# Scope of Variables:

- Local declaration- value is available for particular procedure
- Module Level declaration

This type is required if you want variable in more than one procedures of Form

- Global Declaration:

This type is required when you want to use variable anywhere in the project.

# Rules for Variable name and convention:

- Maximum 255 character can be used.
- Name can contains alphabets, digits & underscore.
- It should not be reserved word.
- First character must be capital letter

Constants: The data cannot change during the program execution is called constant.

Intrinsic constant: readymade in VB i.e vbBlue, vbRed

## Message Box Statement:

It is special type of VB window in which you display message to the user.(it can be any message)

Format is

MsgBox “Message”, Button/Icon

MsgBox “Message” str sum,vbOkOnly

| Button | Value | Constant | Icon |
|---|---|---|---|
| OK | 0 | vbOKOnly | No Icon |
| Critical Message Icon | 16 | vbCritical |  |
| Warning Query Icon | 32 | vbQuestion |  |
| Warning Message | 48 | vbExclamation |  |
| Information Message | 64 | vbInformation |  |

# Decisions and conditions

## If....Then....Else Statement

This statement is used to take certain decision which is based on the condition.

Format is

**If** *Condition* ***Then***

*Statement/s*

***Else***

***Statement/s***

**End If**

# Nested If

**If** *Condition* ***Then***

*Statement/s*

***Else If Condition Then***

***Statement/s***

***Else***

***Statement/s***

**End If**

e.g

```
If age>=18 Then
MsgBox “Eligible for voting”
Else
MsgBox “Not Eligible for voting”
End If
```

1. Write a project in VB to design a suitable form to enter height of a person and display the a message “Allowed to take a ride” if the height is greater than 55 inches otherwise “Sorry , Not Allowed to take ride”

**Controls and properties:**

| Object | Property | Value |
|---|---|---|
| Form | Name | frmRide |
| | Caption | Ride |
| Label | Name | lblHeight |
| | Caption | Height |
| Text | Name | txtHt |
| | Caption | “ “ |

| Object | Property | Value |
|---|---|---|
| Command Button | Name | cmdDecision |
| | Caption | &Decision |
| Command Button | Name | cmdClear |
| | Caption | &Clear |
| Command Button | Name | cmdExit |
| | Caption | &Exit |

CODE:

```
Private Sub cmdRide_Click()
Dim H As Integer
H=Val(txtHt)
If H> 55 Then
MsgBox “Allowed to take a Ride”
Else
MsgBox “Sorry, Not Allowed to take a Ride”
End If
End Sub
Private Sub cmdClear_Click()
txtHt = “ ”
End Sub
Private Sub cmdExit_Click()
End
End Sub
```

2.Write a project in VB to design a suitable form which allows the user to enter the name and basic salary and to calculate Bonus as 30% of basic salary whenever basic salary is less than 10000 otherwise 40% of basic salary using CALCULATE button and display the result.

| Object | Property | Setting |
|---|---|---|
| Form | Name | frmBonus |
| | Caption | Bonus |
| Label1 | Name | lblName |
| | Caption | Name |
| Label2 | Name | lblBasic |
| | Caption | Basic Salary |

| Label3 | Name | lblBonus |
|---|---|---|
| | Caption | Bonus Amount |
| Text1 | Name | txtName |
| | Text | Blank |
| Text2 | Name | txtBasic |
| | Text | Blank |
| Text3 | Name | txtBonus |
| | Text | Blank |
| Command1 | Name | cmdCalculate |
| | Caption | &Calculate |
| Command2 | Name | cmdExit |
| | Caption | &Exit |
| Command3 | Name | cmdClear |

CODES:

```
Private Sub cmdCal_Click()
txtBs = Val(txtBs)
If txtBs < 10000 Then
txtBonus = txtBs * 0.3
Else
txtBonus = txtBs * 0.4
End If
txtBonus = FormatNumber(txtBonus, 2)
txtName.SetFocus
End Sub
```

```
Private Sub cmdClear_Click()
txtName = " "
txtBs = " "
txtBonus = " "
End Sub

Private Sub cmdExit_Click
End
End Sub
```

3. Write a project in VB to design a suitable form to enter the name and salary earned by employee, Calculate and display tax to be paid as per the following schedule.

| Salary | Tax |
|---|---|
| < 500000 | Nil |
| 500000 – 1000000 | 10% |
| 100000 and more | 20% |

# Controls and their properties

| Object | Property | Setting |
|---|---|---|
| Form | Name | frmTax |
| | Caption | Tax Calculation |
| Label1 | Name | lblName |
| | Caption | Name |
| Label2 | Name | lblSalary |
| | Caption | Salary |
| Label3 | Name | lblTax |
| | Caption | Tax |
| Text Box | Name | txtName |
| | Text | “ “ |

| Object | Property | Setting |
|---|---|---|
| Text Box | Name | txtSalary |
| | Text | “ ” |
| Text Box | Name | txtTax |
| | Text | “ ” |
| Command1 | Name | cmdcalculate |
| | Caption | &Calculate Tax |
| Command2 | Name | cmdClear |
| | Caption | &Clear |
| Command 3 | Name | cmdExit |
| | Caption | &Exit |

# Codes for Commands

```
Private Sub cmdCalculate_Click()
Dim S,Tax  As Single
S=Val(txtSalary)
If S<500000 Then
Tax = 0
Else If S<1000000
Tax = S*0.10
Else
Tax= S*0.20
End If
txtTax=FormatNumbe(Tax,2)
txtName.SetFocus
End Sub
```

```
Private Sub cmdClear_Click()
txtName = “ ”
txtSalary = “  ”
txtTax= “ ”
End Sub
Private Sub cmdExit_Click()
End
End Sub
```

4. Write a project in VB to design a suitable form which allow the user to enter 3 numbers and find the largesst of these numbers and display the result in message box

**Controls and properties:**

| Object | Property | Setting |
|---|---|---|
| Form | Name | frmLargest |
| | Caption | Largest |
| Label1 | Name | lblNum1 |
| | Caption | First Number |
| Label2 | Name | lblNum2 |
| | Caption | Second Number |
| Label3 | Name | lblNum3 |
| | Caption | Third Number |

| Label4 | Name | lblLargest |
|---|---|---|
| | Caption | Largest |
| Text Box | Name | txtNum1 |
| | Text | " " |
| Text Box | Name | txtNum2 |
| | Text | " " |
| Text Box | Name | txtNum3 |
| | Text | " " |
| Command1 | Name | cmdLargest |
| | Caption | &Find Largest |
| Command2 | Name | cmdExit |
| | Caption | &Exit |

# Codes:

```
Private Sub cmdLargest_Click( )
Dim A, B, C, Largest As Integer
A = Val(txtNum1)
B = Val(txtNum2)
C = Val(txtNum3)
If A > B And A > C Then
Largest = A
Else
If B > C And B > A Then
Largest = B
Else
Largest = C
End If
End If
MsgBox "Largest Number is" & Str(Largest)
End Sub
```

```
Private Sub cmdExit_Click
End
End Sub
```

# For -------Next loop

It is used when statement or statements are to be repeated

This loop uses variable called loop index.

The loop index determines the number of times loop will be executed.

For E1 = E2 To E3 Step E4

---

---

} Statements to be repeated

Next E1

Where E1 = Control or Index Variable
E2 = Initial value
E3 = Final value
E4 = Increment in E1 after every repetition

Example

```
For I=1 to 5
Sum=Sum+I
Next I
```

# PRACT_NO-12

1. Write a project in VB to design a suitable form which allow the user to enter any integer and then display the sum of all integer upto that integer ( i.e 1 + 2 + 3 + 4 + ..... + n)

| Object | Properties | Setting |
|---|---|---|
| Form | Name | frmSum |
| | Caption | Sum |
| Label1 | Name | lblInt |
| | Caption | Enter Integer |
| Text Box | Name | txtInt |
| | Text | " " |
| Command 1 | Name | cmdSum |
| | Caption | &Sum |

| Object | Properties | Setting |
|---|---|---|
| Command Button 2 | Name | cmdClear |
| | Caption | &Clear |
| Command Button 3 | Name | cmdExit |
| | Caption | &Exit |

**Codes:**

```
Private Sub cmdSum_Click( )
Dim I As Integer
Dim N As Integer
Dim Sum As Integer
N = Val(txtInt)
Sum = 0
For I = 1 To N
Sum = Sum + I
Next I
```

```
MsgBox”Sum of Integer is” &Sum,vbOkOnly
End Sub

Private Sub Clear_Click()
txtInt= “  ”
End Sub

Private Sub Exit_Click()
End
End Sub
```

2. Write a project in VB to design a suitable form which allow the user to enter any integer and then display the sum of squares of integer upto that integer.

3. Write a VB project to compute and display the sum of series 2 + 5 + 8 + 11 + ……..+ 32

| Object | Properties | Setting |
|---|---|---|
| Form | Name | frmSum |
| | Caption | Sum |
| Command 1 | Name | cmdSum |
| | Caption | &Sum |

**Codes:**

```
Private Sub cmdSum_Click( )
Dim I As Integer
Dim Sum As Integer
Sum = 0
For I = 2 To 32 Step 3
Sum = Sum + I
Next I
MsgBox”Sum of Integer is” &Sum,vbOkOnly
End Sub
```

3. Write a VB project to compute and display the factorial of n ( 1*2*3*4……..n)

| Object | Properties | Setting |
|---|---|---|
| Form | Name | frmFactorial |
| | Caption | Factorial |
| Lable 1 | Name | lblNumber |
| | Caption | Number |
| Text Box1 | Name | txtNum |
| | Caption | |
| Command 1 | Name | cmdFact |
| | Caption | &Factorial |

**Codes:**

```
Private Sub cmdFact_Click( )
Dim I As Integer
Dim N As Integer
Dim F As Integer
N=Val(txtNum)
F = 1
For I =1 To N
F = F*I
Next I
MsgBox “Factorial is ” &F,vbOkOnly
End Sub
```

# THANK YOU