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SYLLABUS
B.Com (Computer) VI SEM
Subject – Visual Basic
Unit – I

UNIT – I	Introduction to Visual Basic: Introduction Graphics User Interface (GUI), Programming Language (Procedural, Object Oriented, Event Driven), The Visual Basic Environment IDE; Introduction to VB Controls: Textboxes, Frames, check Boxes, Option Buttons, Setting a Border & Style, the shape Control, The line control, Working with multiple controls and their properties, Designing the user Interface, Keyboard access, tab controls. Default & controls property, Coding for Controls, list box and combo box and their properties, filling the list box using property window/ add item method, picture/ image box and their properties.
UNIT – II	Variables, Constants and Calculations: Variables, Variables Public, Private, Static, Constants, Data Types, Naming rules/ conventions, Named & intrinsic, Declaring variables, Scope of variables, Val Function, Arithmetic operators, Formatting Data. Error functions and types. Introducing to Venn Editor.
UNIT – III	Decision & conditions and Controls: If Statement, If then-else Statement, Comparing String, Compound conditions (and, or Not), Nested Statements, Case Structure, Using If Statement with option Buttons & Check Boxes, Displaying Message in Message Box, testing whether input is valid or not. Using call Statement to call procedure. Do loop, while and for next loop.
UNIT – IV	Working with forms and procedures: Introducing to forms and types of forms and setting form properties, Creating, adding, removing Forms in project, hide, Show Method, Load, Unload, Statement, Me Keywords, Referring to objects on Different Forms.
UNIT – V	Introduction to database connecting tools (ADO, DAO, ADODC, ADODB), Creating the database file for use by Visual Basic (Using MS-Access), Using the Data Control, Setting its property, Using Data control with connecting list boxes & combo boxes as data bound controls, opening database file (adding, deleting records): PS – (Lecture should be on Basic concepts only i.e. Definition, Diagrams and working Principles)



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Unit I

Introduction to Visual Basic

Microsoft visual basic is a powerful development platform developed by Microsoft that can be used to create feature rich application. It is based on event driven programming model.

Visual basic consists of two part i.e. "VISUAL" and "BASIC". The visual part refers to the method used to create the graphical user interface: rather than writing numerous lines of code to describe the appearance and location of interface elements. This part makes visual basic a true RAD (Rapid Application Development) tool. The Basic part refers to the BASIC (Beginners All purpose Symbolic Instruction Code) language since visual basic is a descendant of BASIC.

Features of VB :

1. Event –driven programming language
2. Object orientation
3. GUI/Windows Environment
4. Internet Based Application.

Introduction Graphical User Interface (GUI) :

Since we know two types of interface is available for performing any types of work in computer.

First is called CUI (Character User Interface) in which all operation is performed with the help of character.

Second is GUI (Graphical User Interface) In which all operation is performed with the help of graphics.

Programming language

Programming language are those language that is specially developed, so that you could pass your data and instructions to the computer to do a specific job. Examples are FORTRAN, BASIC, COBOL etc.

Mainly following types of programming are used:

1. **Procedural Programming:** in this approach the problem is considered to be a sequence of things to be performed. for every task , a function is written which is the center of interest for this approach. Examples are COBOL, FORTRAN etc.
2. **Object oriented programming:** in object orientated programming the program is divided into objects rather than function. They are the basic run time entities, they may represent a person , employee. In object oriented programming language we use class in which many object is used. in object oriented programming we also use data abstraction , polymorphism , data encapsulation and inheritance
3. **Event Driven Programming :** visual basic is a event driven programming language . in visual basic user is in the control of the application. Every time the user clicks a command button or presses the mouse , an event stream is generated and code that has been written behind the event is executed.

The visual basic environment IDE:

Visual basic is not just a language, but is an integrated development environment. An IDE is basically a term commonly used in the programming world to describe the interface and environment where you can develop, run, test and debug your applications.

Environment consist of

Tool box : - it is a container that contain different objects and controls. The objects and controls in the toolbox can be added to the form to create graphical user interface.

Form designer window ; - it is a workspace where you actually design the visual part of the form. A form is just like a canvas on which a painter or an artist paints his work

Project explorer window : - it contains the list of all the files, which were used to build an application. In project explorer window ,collection of files is called project.



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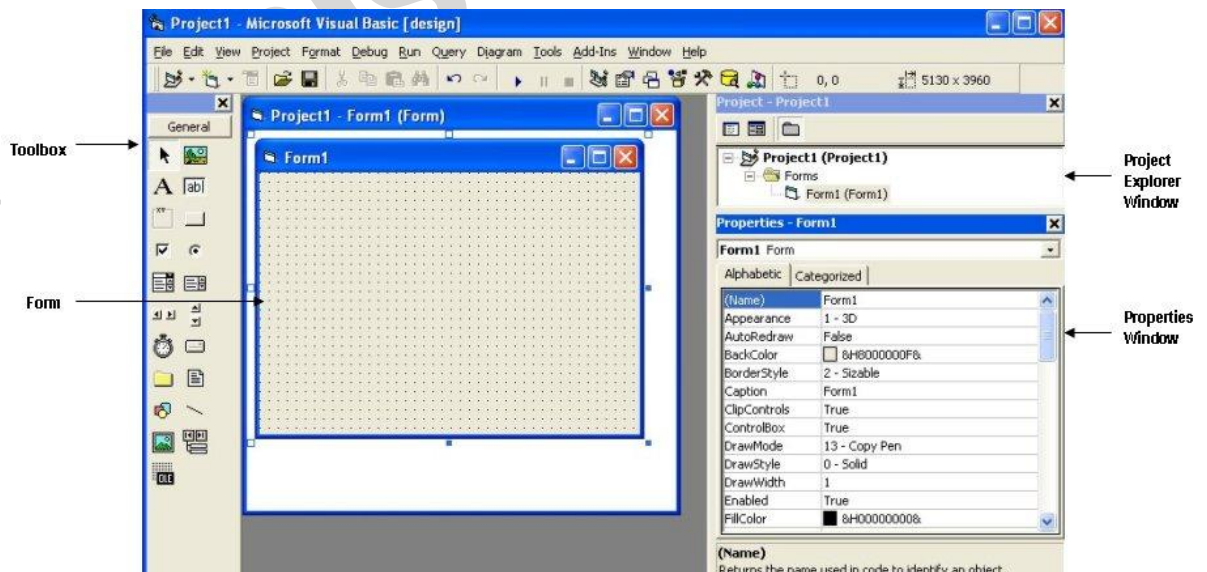
Properties window : - the properties window is used to customize the object for an application by assigning values to different parameters listed in the properties window. For example properties can be viewed alphabetically or by categorized. **F4** is the shortcut to display the properties window.

Code editor window: - it is window to write the user defined codes. Code editor window can be opened by double – clicking on a form or control in the form layout window.

The code editor window contain two drop down list : the object list and procedure list.

Standard tool bar: -it includes buttons for many of the most common commands used in visual basic, such as open project , save project ,start , break and end.

The menu bar : - it contain file , edit and view menu.



VB Controls

Textboxes: - text box control allows to display text on the from, this text can be some record from the tables in the database or some other text. Textbox control is capable to handle thousands of characters of text.

In textbox property setting Multiline to true enables a text box to accept or display multiple line of text at run time. A multiple line text box automatically manages word wrap as long as there is no horizontal scroll bar.

The scrollbar property is set to 0 by default. It can be set to 1 – Vertical , 2 – horizontal or 3- both.

Frame : - It is used to provide and identifiable grouping for other controls. This control has the effect of grouping them together so that when the frame is moved the other

To add other controls to the frame, draw them inside the frame. If you draw a control outside the frame , or use the double click method to add a control to a form ,and then try to move it inside the frame control , the control will be on top of the frame.

Properties are caption , enabled and visible.

Check box : - A check box allows the user to select one or more choices from a list of values.

Common check box properties are caption, name, picture and alignment.

Option/Radio button: - option buttons are used to display options. They are usually grouped in a option form which one can be selected by the user.

Common option button properties are style , picture and value.



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Setting a Border & Styles : - it Returns or sets the border style for an object. For the **Form** object and the **Textbox** control

Syntax

object.BorderStyle = [value]

object : - an object expression that evaluate for an object in the applies to list.

value :- a value of constant that determine the border style.

Example : - Give a Textbox a flat look with no border.

Text1.BorderStyle = 0

Shape Control : - It is used to draw a rectangle , square ,oval ,circle on a form.

VbShapeRectangle – 0(the default); rectangle

VbShapeRectangle – 1; square

VbShapeRectangle – 2; oval

The line control: - it is used to draw lines on your form.

The line control's primary properties are X1,X2,Y1,Y2 and those values form the coordinates of the line segment:(X1,Y1) and (X2,Y2). You can even change those values at runtime or resize the line.

Working with multiple control: -

Label: - it display text on a form that is used to describe another control.

Properties are word wrap, border style etc.

Command button: - a command is used when you want the user to perform some action on a form. The action may be to close the form, save information on the form. Once the command button is clicked, it will generate an event.

Properties are cancel , enabled , style etc..

Timer control : - timer control work like a stopwatch .the timer control always show up as an icon at design time ,but it does not show at run time. it can execute code at regular intervals..

Properties are interval: it is measured in milliseconds, and it has value from 1 to 65535

And enabled: it is set to true when timer control will invoke the timer event in the time.

Scroll bar control: - scroll bar controls allow us to create a scrollable graphics viewport application, it has two types first are vertical scrollbar and other is horizontal scrollbar.

Designing the user interface: - the user interface have toolbox , menu bar and tool bar .

Keyboard access: - we can use all control with the help of keyboard also.

for example ,if the user must be able to press ALT + O to run an open file command button ,the caption property is set to &Open. The ampersand does not show up on the button, but the letter for the access key is underlined.

Default and cancel properties: - A command button can be selected to be the default command button that is, whenever the user press the enter key , the command button is clicked. This is done to specify a command button as default set the default property to true.

A default cancel button can also be specified.when the cancel property of a command button is set to true.

List box : the list box presents a list of items in which the user can click and select the items from list .

To add items to the list we use the Additem method. For example

```
Private Sub Form_Load ()
```

```
    List1.AddItem "Sunday"
```

```
    List1.AddItem "Monday"
```

```
    List1.AddItem "Tuesday"
```

```
    List1.AddItem "Wednesday"
```

```
End Sub
```

Properties are ListIndex.



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Combo box :- the Combo Box also represent list item in which the user can click and select the item. The user needs to click on small arrowhead.

Filling the list box using property window/add item

To add items to the combo box we use the Additem method. For example

```
Private Sub Form_Load ()
```

```
    Combo1.AddItem "Jan"
```

```
    Combo1.AddItem "Feb"
```

```
End Sub
```

Combo box have three types of styles : the drop – down combo box , the simple combo box and the drop down list.

Picture box: - the picture box is one of the controls that is used to handle graphics.

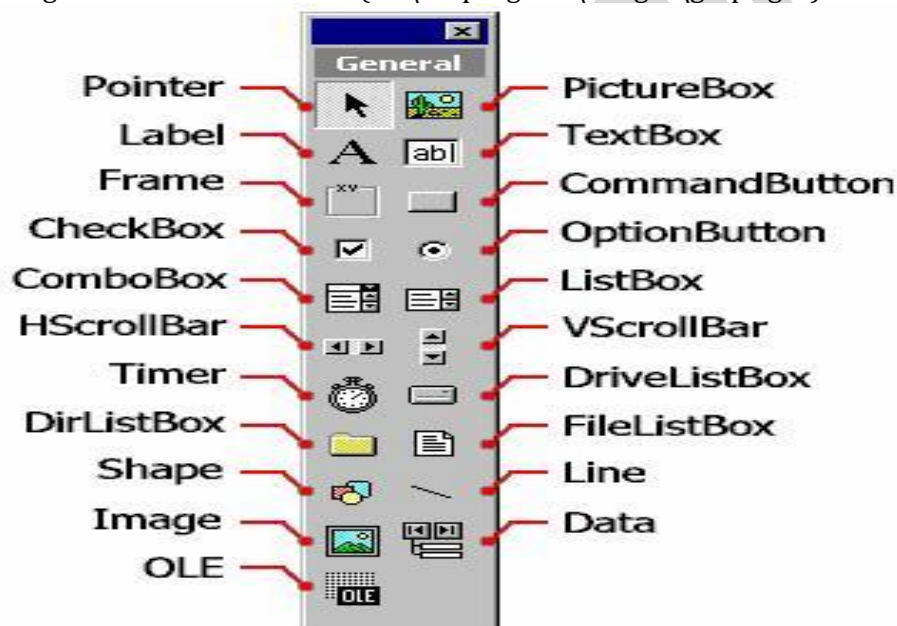
For example the following statement will load the picture grape.gif into the picture box .

```
Picture1.Picture=LoadPicture("C:\VB program\Images\grape.gif")
```

Image box: - it function almost identically to the picture box. there is one major difference , according to an image box is stretchable ,which means it is resizable. This feature is not available in the picture control box.

Example:-

```
Image1.Picture=LoadPicture ("C:\VB program\Images\grape.gif")
```



Visual basic building block : -

1. **Object : -** An object can be said to be a programmable entity ,containing both code and data. This entity can be treated and controlled as a unit. Examples of object includes command buttons, text box etc.
2. **Properties : -** properties consist of the object's data , setting and attributes. It describe the object ,their appearance and behavior. Like text caption ,and name are common example of properties. Properties can be set both at runtime and design time.
3. **Events: -** any action recognized by a form or control is called an Event. Visual basic is event – driven – programming language. Some common event that apply to form is Load and Unload Event that apply controls are Click , Double Click and Change.



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4. **Forms :** - A form is a window to which you can attach Visual basic controls. Every form is associated with its own properties , events , and methods ,which can be used to control of form appearance and behavior.
5. **Controls :** - To make forms more interactive or to make the front end of the application a totally graphical user interface, control are added to forms.
For example for a textbox control properties can be set the size of textbox, the font for the text and color of the text.
6. **Modules :** - A module is a set of statements written in visual basic. Modules are
 - Form modules
 - Standandrad modules
 - Class modules
 - Resources filesEach module can contain procedure and declarations.
7. **Methods :** - A method in VB is a predefined action that operates on a specific object. There are a lot of methods in VB ,some of them are
Drag, move, refresh and Set Focus
8. **Event Procedure:** - When a event occurs in your application ,Visual basic automatically produce the event and runs the code that you have written for it . This code is called as an Event Procedure.
Part of event procedure are Private Sub , The objects name , an underscore and the event name
9. **General Procedures ;** - A general procedure is one that isn't associated with a particular event. General procedure can be used for
 - Sharing code among controls on one form.
 - Sharing code among multiple forms.