

Introduction to the Visual Basic Language and Environment

1.1 What is Visual Basic?

Visual Basic is a high level programming language evolved from the earlier DOS version called BASIC. BASIC stands for **B**eginners' **A**ll-purpose **S**ymbolic **I**nstruction **C**ode. Different software companies produce different versions of BASIC, such as Microsoft QBASIC, QUICKBASIC, GWBASIC, and IBM BASICA and so on.

Visual Basic implements graphical user interface that allows the use of graphics for different applications. It provides visual interactive windows with user, like Dialogue box for (color, font ...), Input box, and Output box. Also it is able to create menu to simplify user application.

1.2 The Visual Basic Environment



Figure 1.1 The Visual Basic Start-up Dialog Box

1.3 Elements of the Integrated Development Environment (IDE)

The IDE environment consists of many elements. Some elements are displayed when Visual Basic is started as in the figure (1.2) . Other elements are displayed if the user requires them. We will list some of these elements.

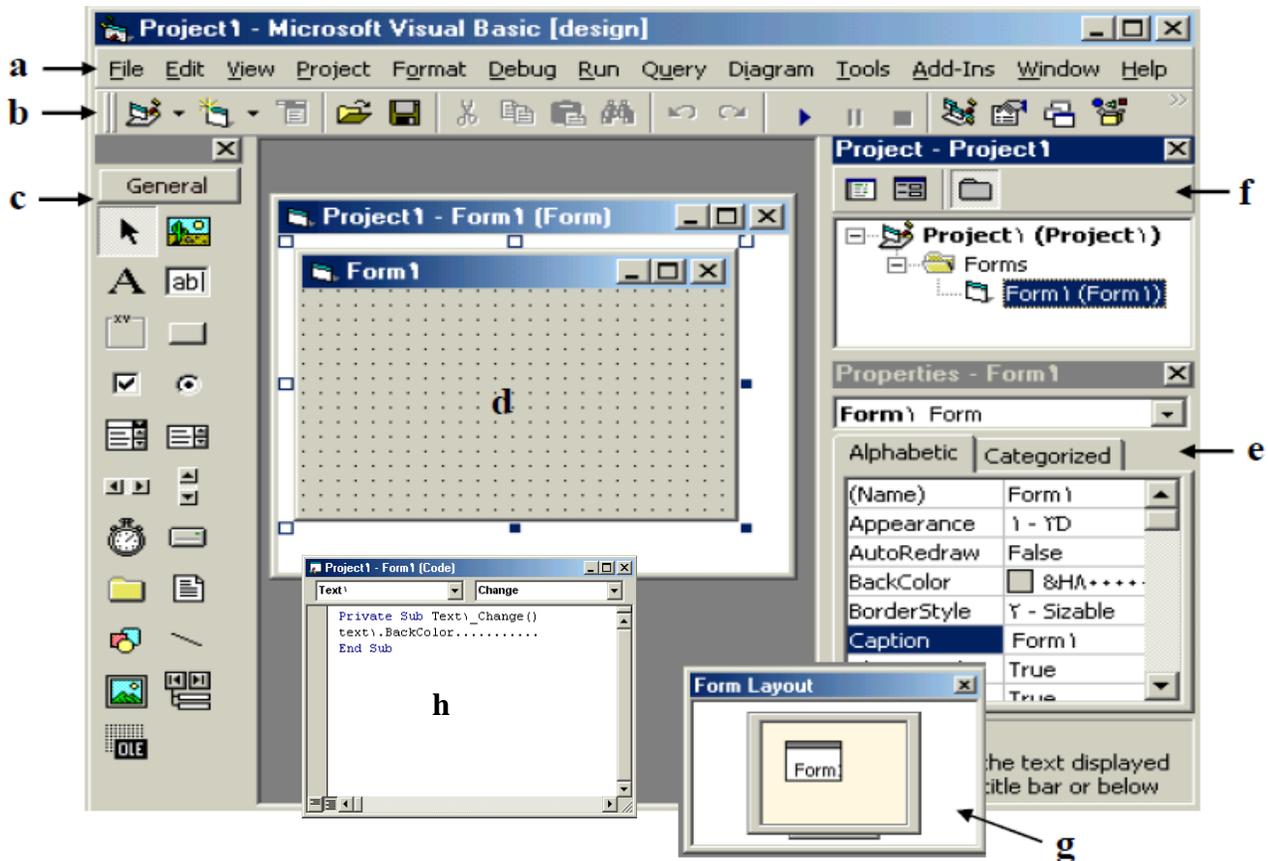


Figure (1.2) The Visual Basic Environment

a- Menu Bar: It contains a standard command like: File, Edit, View, Window, Help menus, and specific command such as: Project, Format, Debug menus.

b- Toolbar: it contains the most commonly used commands (button), if clicked an action represented by that button carried out.

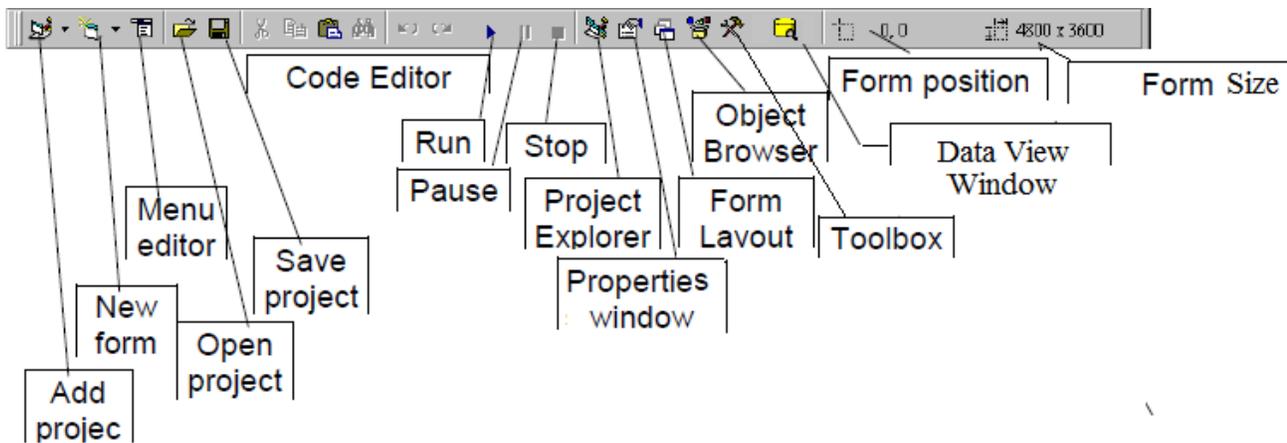


Figure (1.3)Toolbar

c- ToolBox: it contains a collection of tools that needed for project design.

d- form Designer: it is a window for each form to customize the designed interface of the application. Using the form designer, the user can add controls, graphics, and text to create the desired form appearance

e- Properties Window: it is a List of properties settings for a selected form or a control. These properties are characteristics (such as size, visible, or color) of the selected object it provides an easy way to set properties.

f- Project Explorer Window: it is a list of the forms and modules for the current projects. It is a hierarchical tree- branch structure, where the project at top of tree and other parts like forms, modules) descend from this tree.

g- Form Layout Window: The Form Layout window is a small screen. Which used to reposition the form of the application so that it appears in proper place when project run.

h- Code Editor Window: Code Editor Window used to write a VB code for an application. For each form there is a separate code editor window. It is displayed when user clicks on form or object in form.

1.4 The Toolbox

Below you will find a description of the standard objects that appear in the Visual Basic 'toolbox'. Each of these will explained in depth as you work through this booklet.

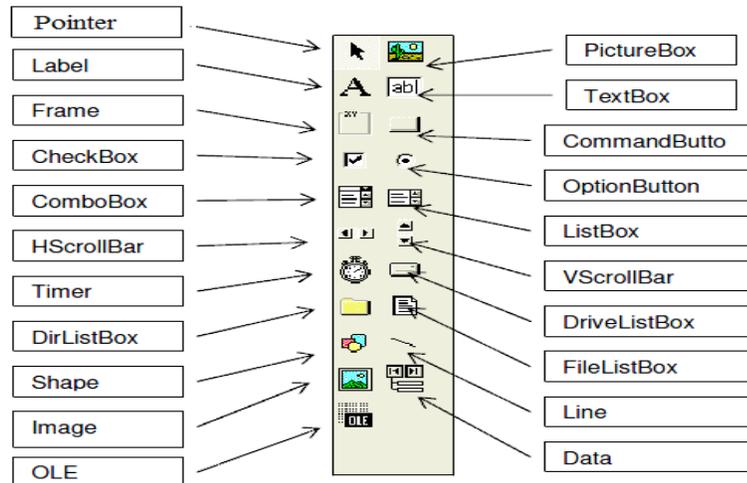


Figure (1.3) Toolbox

	Pointer	It does not draw a control. Pointer, lets you select, resize or move a control already on a form.
	Picture Box	Displays graphics, as a container that receives output from graphics and print methods.
	Label	Displays text that cannot be changed, like a caption under a graphic. It can be changed by program codes.

	Text Box	Holds text that the user can either enter or change, or text generated by application.
	Frame	Allows you to create a visual or functional grouping for controls. Draw the Frame first, and then draw controls inside the frame, to form a group.
	Command Button	Creates a button the user can choose (click) to carry out a sequence of instructions.
	Check Box	To choose between yes/no, true/false, and include/exclude or multiple choices when more than one item may be chosen.
	Option Button	This control used to select one item from a group of items.
	Combo Box	Combines the features of list box and text box. The user can either choose an item from the list or enter a value in the text box.
	List Box	Displays a list of items from which the user can choose one.
	Timer	Used to activate a specific event at set intervals. This control is invisible at run time.
	VScrollBar (vertical scroll bar)	Provides a graphical tool for moving through lists or selecting data ranges.
	HScrollBar (horizontal scroll bar)	Provides a graphical tool for moving through lists or selecting data ranges.
	DriveListBox	Displays valid disk drives at run time.
	DirListBox (directory list box)	Displays directories and paths at run time.

	FileListBox	Displays a list of files at run time.
	Shape	Used to draw a variety of shapes such as a rectangle, square, rounded square, oval, or circle, etc.
	Line	Used to draw a variety of line styles on your form at design time.
	Image	Displays a graphical image from a bitmap, icon, metafile as well as JPG or GIF files. It is decorative and uses fewer resources than a PictureBox.
	Data	Provides access to data in databases through bound controls on your form.
	OLE	Allows you to link and embed objects from other applications in your Visual Basic application.

1.5 Types of Project in Visual Basic (VB) The types of project that you can create in Visual Basic are as follows :

- 1- Standard EXE** : These are the typical applications that you develop with previous versions of Visual Basic.
- 2- ActiveX EXE, ActiveX DLL** : These types of projects are available with the Professional edition. ActiveX components are OLE automation servers.
- 3- ActiveX Control** : This type of project is also a feature of the Professional edition. We use it to develop your own ActiveX controls.
- 4- ActiveX Document EXE, ActiveX Document DLL** : ActiveX documents are in essence Visual Basic applications that can run in the environment of the container that supports hyper-linking.
- 5- VB Application Wizard, VB Wizard Manager** : The Application Wizard takes you through the steps of setting up the skeleton of a new application. The Wizard Manager lets you build your own wizard.

6- Data Project : It's identical to the Standard EXE project type, but it automatically adds the controls that are used in accessing databases to the Toolbox.

7- DHTML Application : VB6 allows you to build Dynamic html pages that can be displayed in the browser's window on a client Computer.

8- IIS Application : VB6 allows you to build applications that run on the Web server and interact with clients over the Internet with the Internet information Server.

9- Addin : You can create your own add-ins for the VB IDE. These are special commands you can add to Visual Basic's menus.

9- VB Enterprise Edition Controls : It simply creates a new Standard EXE project and loads all the tools of the Enterprise Edition of Visual Basic.

1.6 Visual Basic Overview: Properties, Events, Methods

Properties:

Describe or format the object. Can changed by code or property window.

- Name of component
- Color of component
- Height of component
- Caption/words attached to component
- Font of component
- If a control is named "Fred" for example, the line "Fred.Left=700" would position Fred on the screen.

Property	Description
Left	The position of the left side of a control with respect to its container
Top	The position of the top of a control with respect to its container

Height	A control's height
Width	A control's width
Name	The string value used to refer to a control
Enabled	The Boolean (True/False) value that determines whether users can manipulate the control
Visible	The Boolean (True/False) value that determines whether users can see the control

Events:

Events happen when the user does something...

- A button has a `_click` event
- A spinner has an `_SpinUp` and `_SpinDown` event
- A form has a `_load` and `_unload` event
- When a user changes a text box a `_change` event happens

1.7 Setting Properties of Objects at Design Time

Object	Prefix	Example
Form	frm	frmWatch
Command Button	cmd, btn	cmdExit, btnStart
Label	lbl	lblStart, lblEnd
Text Box	txt	txtTime, txtName
Menu	mnu	mnuExit, mnuSave
Check box	chk	chkChoice