



## Structure of a Visual Basic Application

To run Visual Basic program select, Start> Programs > Microsoft Visual Studio 6.0> Microsoft Visual Basic 6.0 as shown in Fig.(2-1). When Visual Basic is loaded, the New Project dialog shown in Fig. (2-2) is displayed.



Fig.(2-1) Computer screen



Fig.(2-2) New Project dialog.

The New Project dialog allows the programmer to choose what type of Visual Basic program to create. Standard EXE, which is highlighted by default, allows the programmer to create a standard executable. Each type listed in Fig.(2-2) describes a group of related files called a Project.

### 1.1 Project (VBP)

Project is a program designed to user application that may be simple (like calculator program) or complex (like word program). The project types listed in Fig.(2-3) are the "Visual " in Visual Basic, because they contain predefined features for designing Windows programs. The project is a collection of files that makes the user program. They may consist of **form, modules, active x controls**.

The new project dialog contains three tabs :

- New: creating new project.
- Existing: opening an existing project.
- Recent: opening a project that has been previously loaded into the IDE.



## 1.2 Elements of Integrated Development Environmental (IDE).

Figure (2-3) shows The IDE after Standard EXE is selected. The top of the IDE window (the title bar) displays -Project1-Microsoft Visual Basic [design]. The environment consists of various windows when Visual Basic is started (by default):

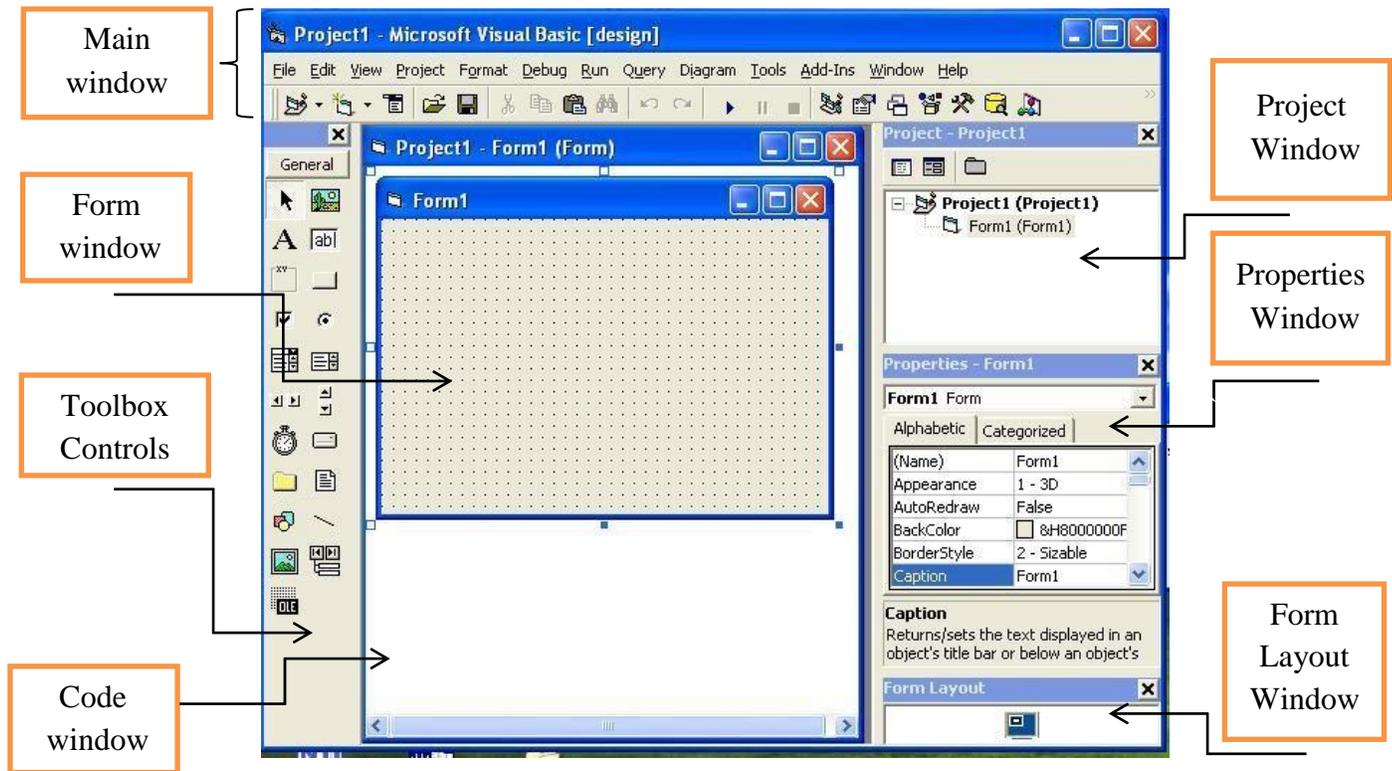


Fig. (2-3) visual basic windows

**1- Main Window:** as shown in Fig. (2-4) consists of the **title bar**, **menu bar**, and **toolbar**:

- The **title bar** indicates the project name, the current Visual Basic operating mode, and the current form.
- The **menu bar** has drop-down menus from which you control the operation of the Visual Basic environment, which Contains a standard command and specific command like (File, Edit, View, Project, Format, Debug, Run, etc.)
- The **toolbar** has buttons that provide shortcuts to some of the menu options and Contains several icons that provide quick access to commonly used features.



The main window also shows the location of the current form relative to the upper left corner of the screen (measured in twips) and the width and length of the current form.

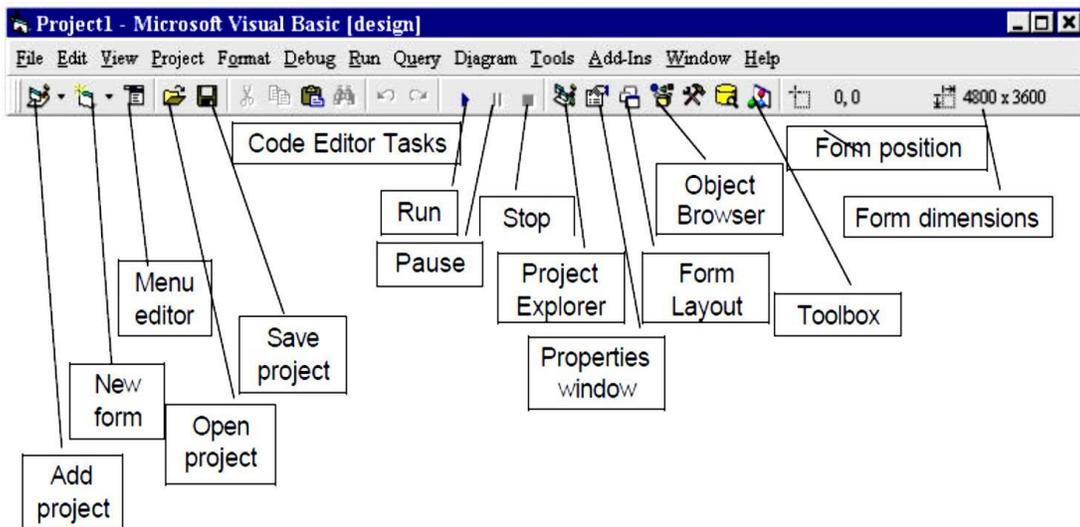


Fig. (2-4) Main Window

- 2- **Form1 (Form) window:** contains a form named Form1, which is where the program's Graphical User Interface (GUI) will be displayed as shown in Fig. (2-5).

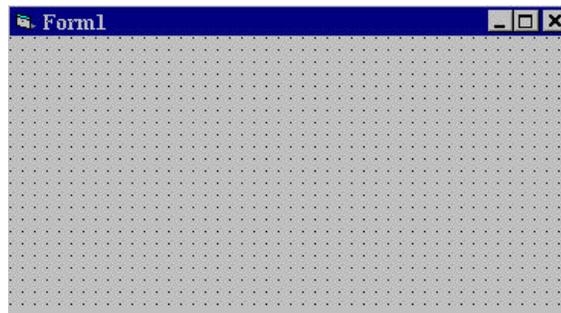


Fig. (2-5) Form window

- 3- **Toolbox Controls:** Contains a collection of tools that are needed for project design as shown in Fig.(2-6). To show the toolbox press View> toolbox icon. The user can place the tool on form, and then work with the tool. To place the tool on form: click on tool>draw tool to form > the tool appears on form or double click on tool then the tool appears on form. Table (2-1) summarizes the toolbox controls.

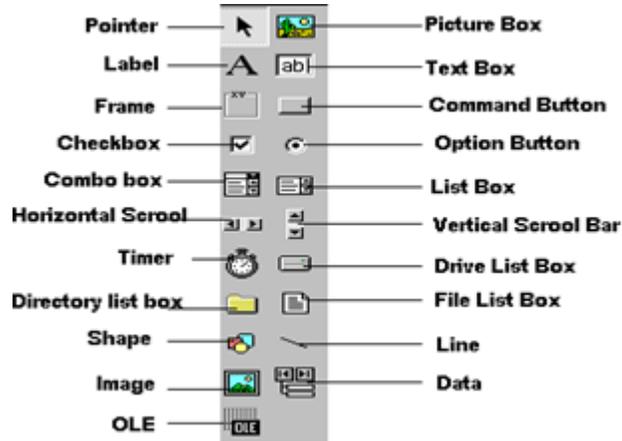


Fig. (2-6) Toolbox Window.

Table (2-1): Toolbox controls summary.

Control	Description
Pointer	Used to interact with controls on the form(resize them, move them, etc.). The pointer is not a control
PictureBox	A control that display images or print the result.
Label	A control that displays uneditable text to the user.
TextBox	A control for accepting user input. Textbox can also display text.
Frame	A control for grouping other controls
CommandButton	A control that represents a button. The user presses or clicks to initiate an action.
CheckBox	A control that provides the user with a toggle choice (checked or unchecked)
OptionButton	Option buttons are used in groups where only one at a time can be true
Listbox	A control that provides a list of items.
ComboBox	A control that provides a short list of items.
HscrollBar	A horizontal scrollbar.
VscrollBar	A vertical scrollbar.
Shape	A control for drawing circles, rectangles, squares or ellipse
Line	A control for drawing line.
DrivelistBox	A control accessing the system disk drivers. A control accessing directories on a system
DirListBox	A control accessing directories on a system
Filelistbox	A control accessing file in a directory .
Image	A control for displaying images. The images control does not provide as many capabilities as a picturebox.



OLE	A control for interacting with other window applications.
Timer	A control that performs a task at programmer specified intervals. A timer is not visible to the user.

**4- Properties Window:** The properties window displays the properties for a form or control as shown in Fig.(2-7). Properties are attributes such as size, position, etc. like a form; each control type has its own set of properties. Some properties, like width and height, such as, are common to both forms and controls, while other properties are unique to form or control. Controls often differ in the number and type of properties. Properties are listed either alphabetically (by selecting the alphabetic tab) or categorically (by selecting the categorized tab). The most important properties of the objects in general are listed in the following table. To show the properties window press View> properties window icon. Table (2-2) explain objective of the properties window.

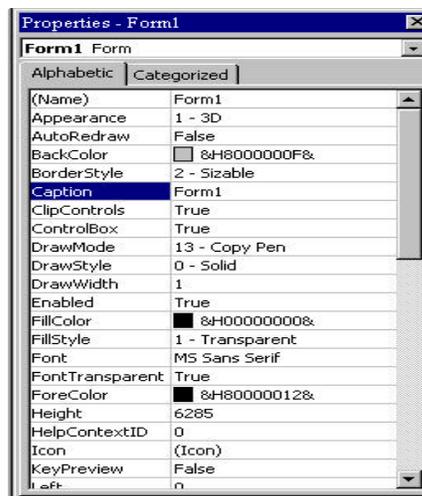


Fig.(2-7) Properties Window

Table (2-2) explanation of the properties window.

Properties name	Objective
Name	Used to represent name of object in code.
Caption	Name appears on object.
Back color	Background color for object.
Fore color	Color of text written on object.
Font	Font style type and size
Visible	The tool is visible or invisible.
Enable	The tool enable or disable



Height	Length of object
Width	Width of object
Top	Coordinates of top of object on screen
Left	Coordinates of left of object on screen
Text	Allows inputting and editing text in object.

**5- Form Layout Window:** The Form Layout window specifies a form's position on the screen at runtime as shown in Fig.(2-8). The Form Layout window consists of an image representing the screen and the form's relative position on the screen. With the mouse pointer positioned over the form image, drag the form to a new location.

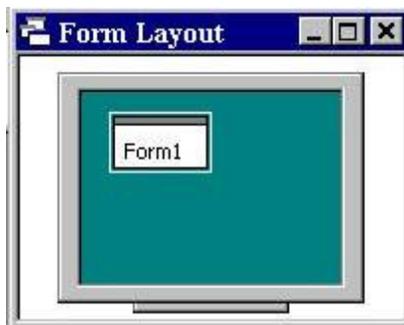


Fig.(2-8) Form Layout Window

**6- Project Window:** displays a list of all forms and modules making up your application see Fig.(2-9). You can also obtain a view of the **Form** or **Code** windows (window containing the actual Basic coding) from the Project window.

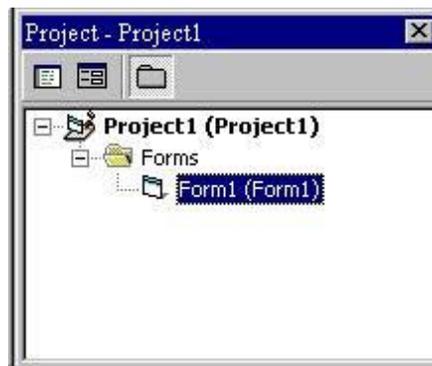


Fig.(2-9) Project Window

Note:

- There are two ways to place controls on a form:



1. Double-click the tool in the **toolbox** and it is created with a default size on the form. You can then move it or resize it.
2. Click the tool in the toolbox, and then move the mouse pointer to the form window. The cursor changes to a crosshair. Place the crosshair at the upperleft corner of where you want the control to be, press the left mouse button and hold it down while dragging the cursor toward the lower right corner. When you release the mouse button, the control is drawn.
  - To **move** a control you have drawn, click the object in the form window and drag it to the new location. Release the mouse button.
  - To **resize** a control, click the object so that it is select and sizing handles appear. Use these handles to resize the object, as shown in Fig.(2-10).

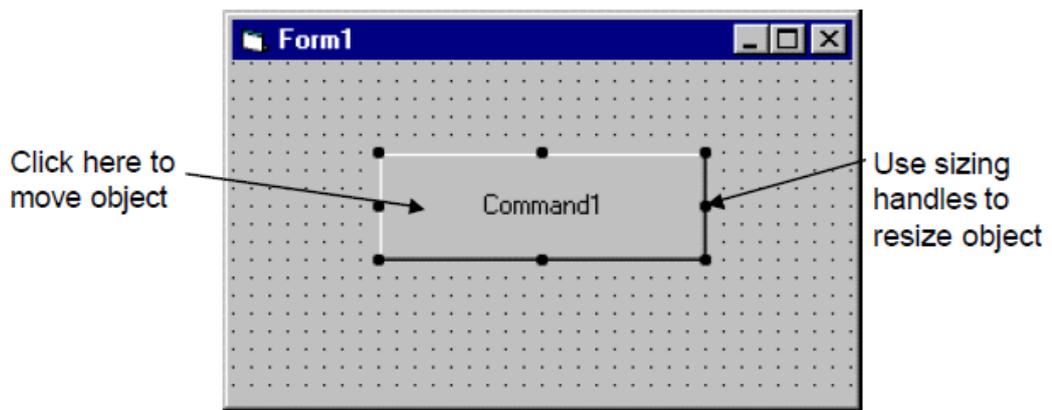


Fig.(2-10).

**7- Code Editor Window:**

Code Editor Window is 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. As shown in Fig. (2-11).

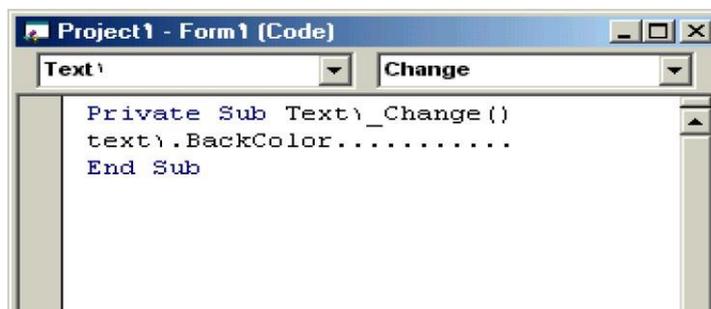


Fig.(2-11) Code Editor Window



**Events:**

Events are like electrical switches. The electrical switches are of many types, so are the events. The form and controls support events (generation, interaction with mouse and keyboard). The most important events in Visual Basic are described in the following table.

Table (2-3) description of the most important events.

Event	Action taken when	It provide the following integers
Click	Single click on object.	
DbClick	Double click on object.	
Mouse move	Mouse pointer move object.	Button ,shift ,X,Y
Key press	Pressing a key of the key board.	Key Ascii
DragDrop	Move object to another place.	Source, X, Y
load	Loading the object	

**Practical part**

**Example 2-1:** Design a form such that: in event load, when project runs, the formbackcolor property changed (chose any color).

**Code:**

```
Private Sub Form_Load()
Form1.BackColor = QBColor(12)
End Sub
```



**Example 2-2:** Design a form such that: in event click on form, when project runs, the title of the form changed to applied science.



**Exercises:**

- 1-1 Design a standard project has three forms with backcolors red, blue and green.
- 2-2 design a standard project that has one form change the name from form1 to "students"
- 2-3 Create a standard project with one form the name of the project "market seals" and the name of the form "stock markets" and save project on desktop
- 2-4 Design a form contains label " A.L.I.K.O" in size 14.