

## STRUCTURE OF A VISUAL BASIC APPLICATION

To run Visual Basic program, select, Start -> Programs -> Microsoft Visual Basic 6.0 as shown in



Fig.(2-1) Computer screen

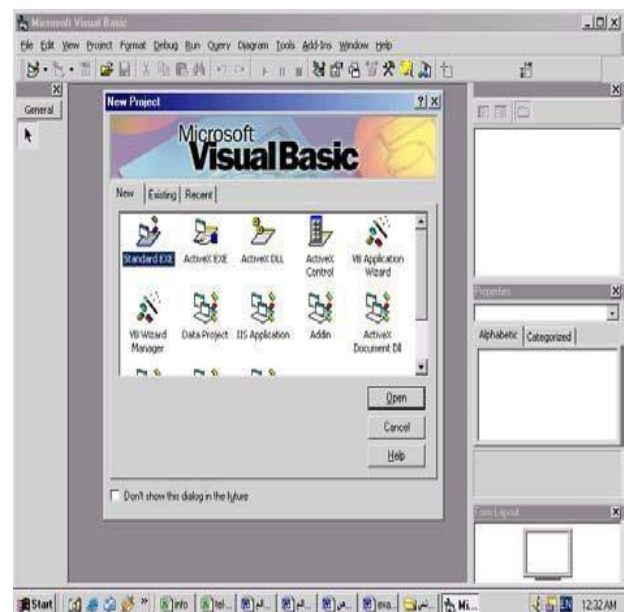


Fig.(2-2) New Project dialog.

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.

### 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.

Application (Project) is made up of:

1. **Forms** - Windows that you create for user interface
2. **Controls** - Graphical features drawn on forms to allow user interaction (text boxes, labels, scroll bars, command buttons, etc.) (Forms and Controls are objects.)
3. **Properties** - Every characteristic of a form or control is specified by a

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property. Example properties include names, captions, size, color, position, and contents. Visual Basic applies default properties. You can change properties at design time or run time.

4. **Methods** - Built-in procedure that can be invoked to impart some action to a particular object.
5. **Event Procedures** - Code related to some object. This is the code that is executed when a certain event occurs.
6. **General Procedures** - Code not related to objects. This code must be invoked by the application.
7. **Modules** - Collection of general procedures, variable declarations, and constant definitions used by application.

## Steps in Developing Application




There are three primary steps involved in building a Visual Basic application:

1. **Draw** the user **interface**
2. **Assign properties** to controls
3. **Attach code** to controls

We'll look at each step.

### Drawing the User Interface and Setting Properties

➤ *Visual Basic operates in three modes.*

-  **Design** mode - used to build application
-  **Run** mode - used to run the application
-  **Break** mode - application halted and debugger is available

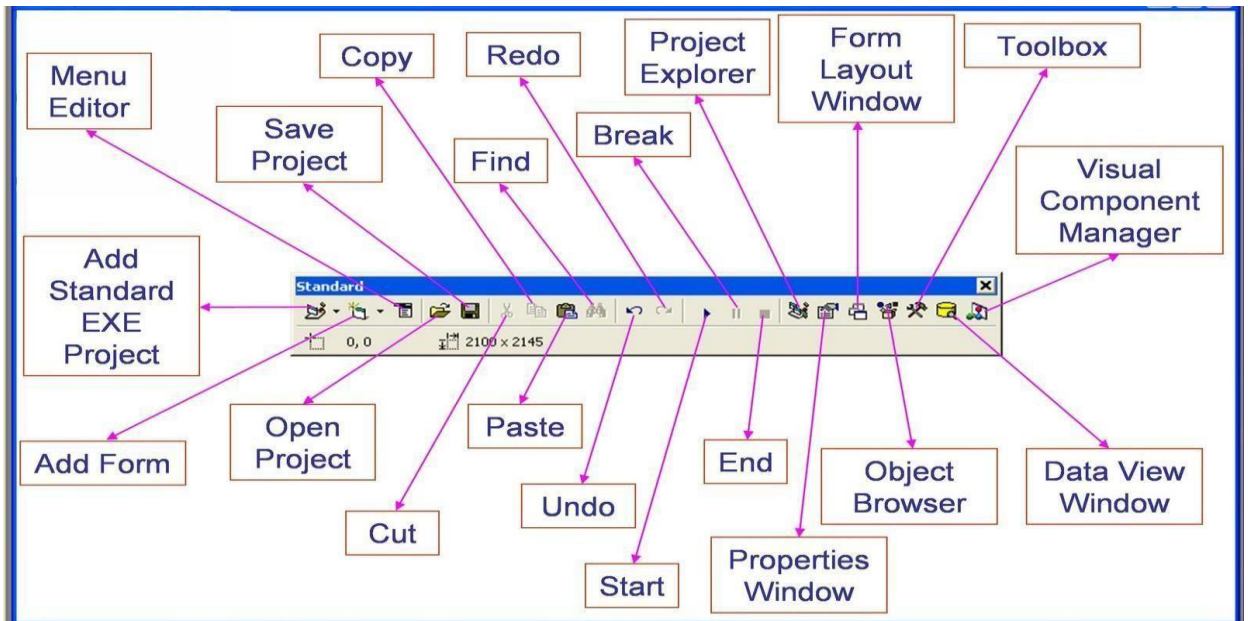
We focus here on the **design** mode.

Six windows appear when you start Visual Basic.

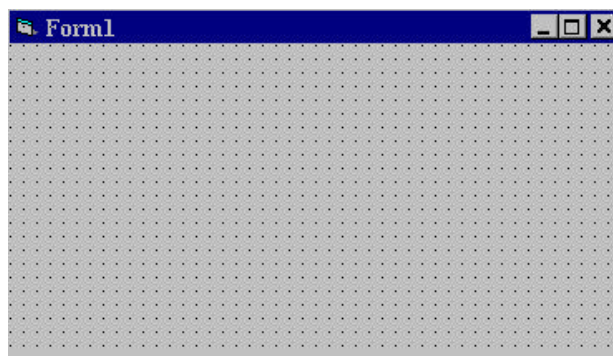
The **Main Window** consists of the title bar, menu bar, and toolbar. The title bar indicates the project name, the current Visual Basic operating mode, and the current form. The menu bar has drop-down menus from which you control the operation of the Visual Basic environment. The toolbar has buttons that provide shortcuts to some of the menu options. 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.

## TOOL BAR

Contains several icons that provide quick access to commonly used features



**Project1-Form/SDI (Form):** window contains a form named Form1, which is where the program's Graphical User Interface (GUI) will be displayed. A GUI is the visual portion of the program, this is where the user enters data (called inputs) to the program and where the program displays its results (called outputs). We refer to the Form1 window simply as "**the form**". Forms are the foundation for creating the interface of an application. You can use the forms to add windows and dialog boxes to your application. You can also use them as container for items that are not a visible part of the application's interface. For example, you might have a form in your application that serves as a container for graphics that you plan to display in other forms.



**Toolbox Controls:** Contains a collection of tools that are needed for project design as shown in Fig.(2-4). 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 summarizes the toolbox controls.

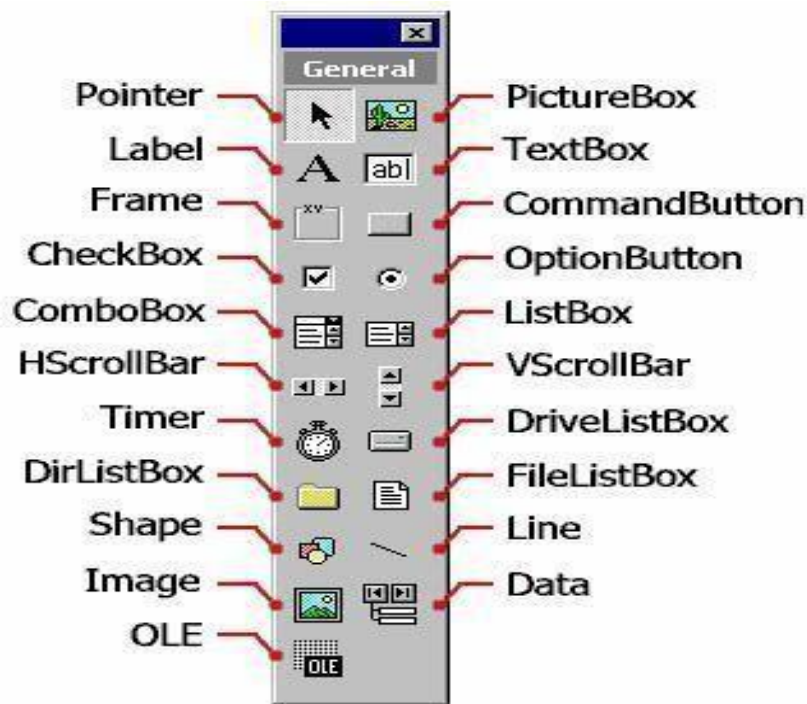


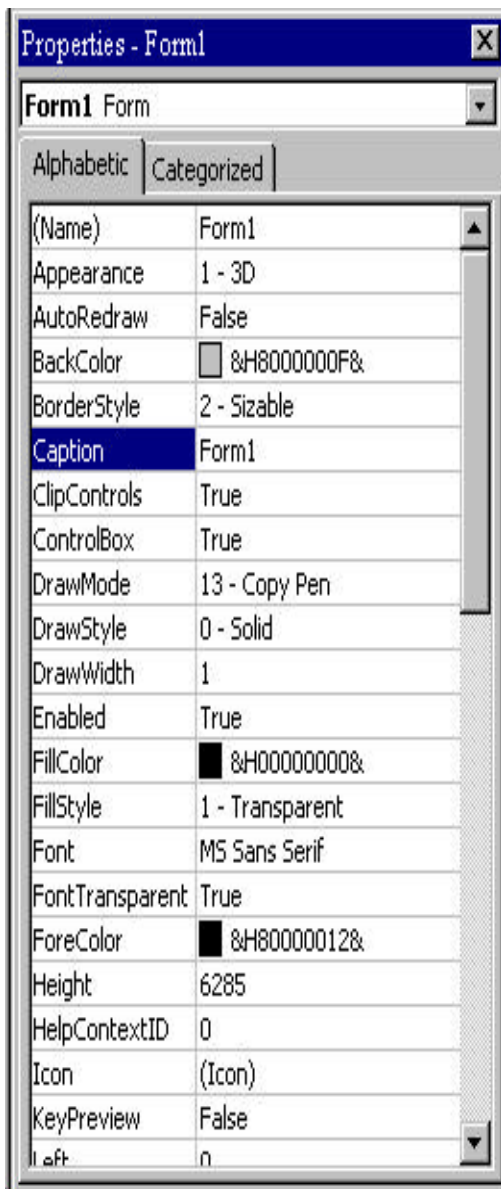
Fig.(2-4)

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.
Timer	A control that performs a task at programmer specified intervals. A timer is not visible to the user.
DrivelistBox	A control accessing the system disk drivers.
DirlistBox	A control accessing directories on a system
Filelistbox	A control accessing file in a directory
Shape	A control for drawing circles, rectangles, squares or ellipse
Line	A control for drawing line.

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.

### PROPERTIES WINDOW:

The properties window displays the properties for a form or control. 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.

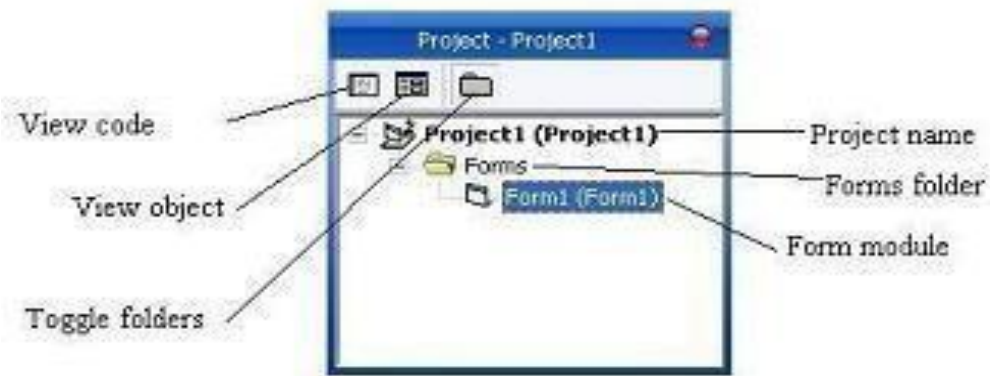


Properties name	Objective
Name	Used to represent name of object in code.
Caption	Name appears on object.
Back color	Background color for object.
Fore color	Color of text written on object.
Font	Font style type and size
Visible	The tool is visible or invisible.
Enable	The tool enable or disable
Height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

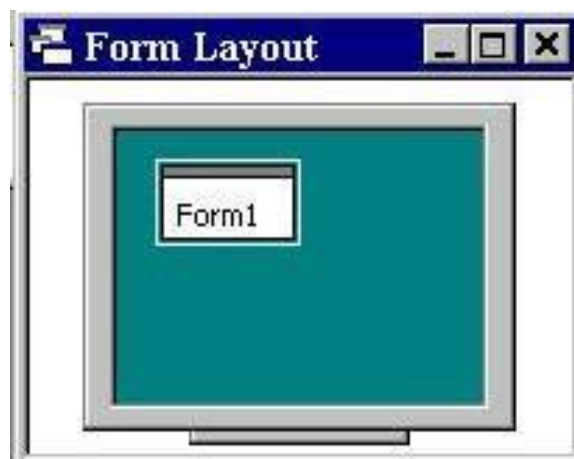


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**PROJECT EXPLORER WINDOW:** The window titled Project-Project1 is called the Project Explorer and contains the project files. The project explorer window's tool bar contains three buttons, namely view code, view object and toggle folders. When pressed, the view code button displays a window for writing Visual Basic code. View object, when pressed, displays the form. Double-clicking form1 (form1) also displays the form. The toggle folders button toggles (i.e., alternately hides or shows) the forms folder. The forms folder contains a listing of all forms in the current project. To show the Project Explorer window press View> Project Explorer window icon



**FORM LAYOUT WINDOW:** The Form Layout window specifies a form's position on the screen at runtime. 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.



As mentioned, the user interface is 'drawn' in the form window. 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, then move the mouse pointer to the form window. The cursor changes to a crosshair. Place the crosshair at the upper left 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
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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.

Click here to move the object

