

1-Introduction

Hundreds of high-level languages have been developed, but only a few have achieved broad acceptance, for example (**QBASIC, FORTAN and Pascal**). Visual Basic is an example of a graphical-based language. A graphical-based language allows the user to work directly with graphics.

Visual Basic is derived from the “visual” term refers to the method used to create the graphical user interface (**GUI**), Simply drag and drop prebuilt objects into place on screen without having to learn an additional software package. The “Basic” term refers to the BASIC (Beginners All-Purpose Symbolic Instruction Code) language, a language used by more programmers. Visual Basic has evolved from the original BASIC language and now contains several hundred statements, functions, and keywords, many of which relate directly to the windows **GUI**. Beginners can create useful applications by professionals to accomplish anything that can be accomplished using any other windows programming language.

Visual Basic is a Microsoft Windows Programming language. Visual Basic programs are created in an Integrated Development Environmental (**IDE**). The **IDE** allows the programmer to create, run and debug Visual Basic programs conveniently. **IDEs** allows a programmer to create working programs in a fraction of the time that it would normally take to code programs without using **IDEs**.

2-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.

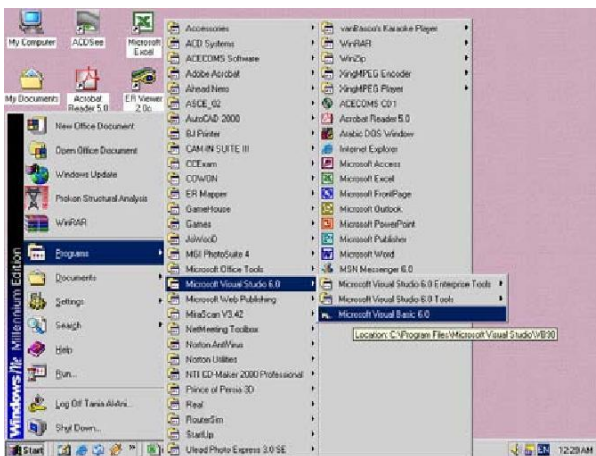


Fig.(2-1) Computer screen



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.

2-1 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.

2-2 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):

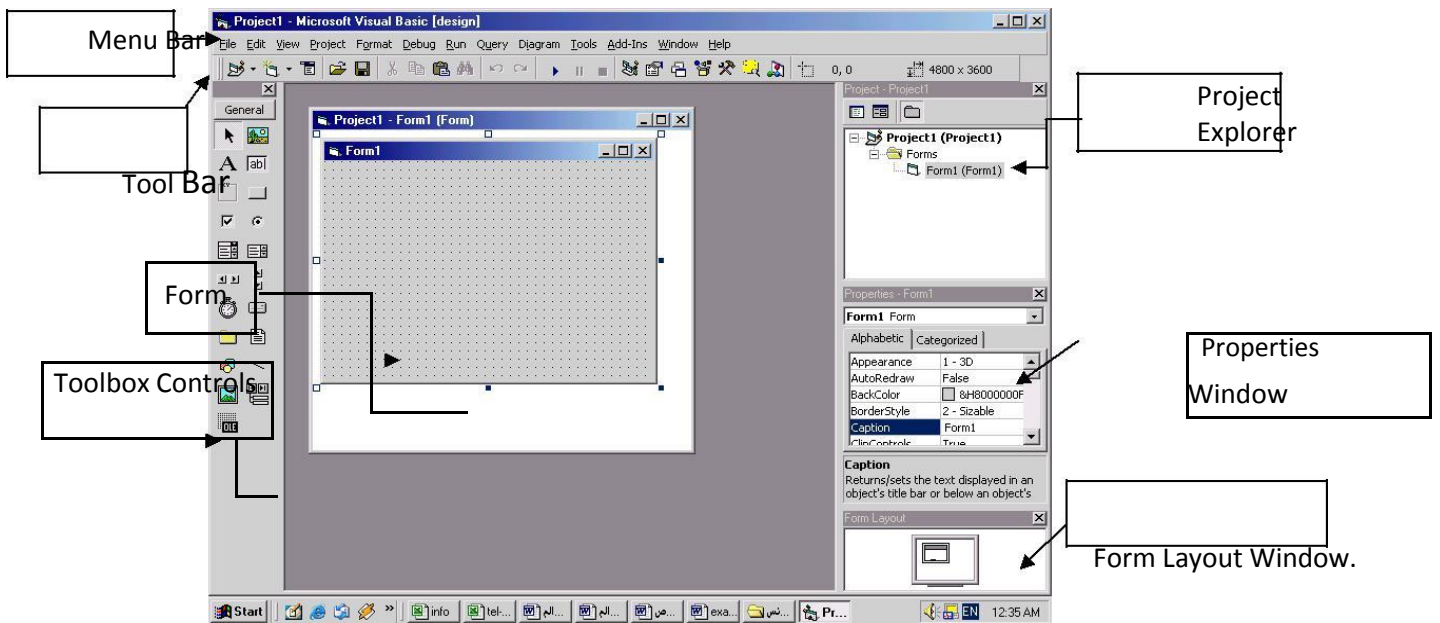


Fig. (2-3)

2-2-1 Project1-Form1 (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.

2-2-2 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 (1) summarizes the toolbox controls.

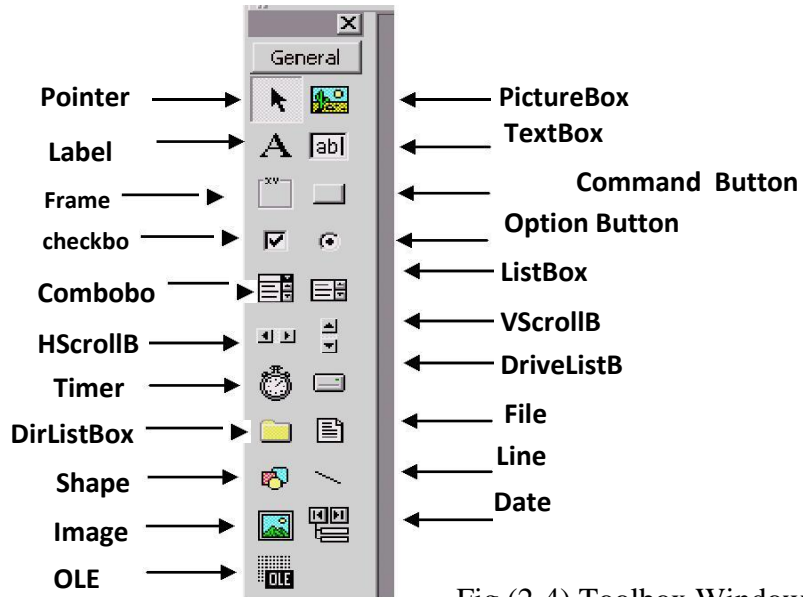


Fig.(2-4) Toolbox Window.

The tools in tool box are divided to many categories according to their functions:

First The control tools: there are three different tools that are used for control (as switches):

Command Button: used as a switch (such as Ok or/and Cancel) buttons. Code is written in the click event procedure of this tool.

Option (Radio) Button: For selection as a group. Many option is placed inside container (a Frame control), one control is selected from the group all others of the group are automatically deselected.

Check Box: For a yes/no (true/false) selection. Used as individuals (not grouped). It may be selected more than one check control at same time.

Second Tools that deal with Text:

- a) Text Box: For text edit, like Note Pad, it can be single line or multi lines. Box takes any size.
- b) List Box: for a list, user adds to and deletes from this list. It takes any size.
- c) Combo Box: consist of (list and arrow, when clicked a small list appears), if user selects item from the list, it will be displayed in text box. Vertical size is fixed.
- d) Label: Fixed text appears on form for remark.

Third Container Tool: is a frame tool, which used to grouped many other tools. It is important in the application's interface design.

Fourth Tools deals with Images and Graphics:

- Picture Box: used to display images, and used to output any type of data (numeric, string, ...ect.) .
- Image: used instead of picture box because it consumes fewer system resources, but used only to displays the images in stretch style.
- Shape: used only to display rectangles, circles and ovals on the forms. Never contains any events.
- Line: used only to display lines. Never contains any events.

Fifth Tools for File Search:

- DriveListBox: it is a special list box filled automatically with drives (HardDisc, Floppy, CD) in the system. It is an invariant.
- DirListBox : it is a special list box filled automatically with folders in the selected drive in DriveListBox tool. It is a list invariant.
- FileListBox : it is a special list box filled automatically with the names of files in the selected folder in DirListBox tool. It is a list invariant.

Sixth Tools Deals with Time and Bars

- a) Timer : used to control object movement.
- b) HScrollBar : creat stand-alone horizontal scroll bar.
- c) VScrollBar : creat stand-alone vertical scroll bar.

Seventh Data Tool: used as an user interface with an databases applications, that built in one of the database management systems (DBMS) like Microsoft access.

The following table shows the default properties of the basic tools:

Object	Default Property	Object	Default Property
Text Box	Text	Horizontal Scroll bar	Value
Label	Caption	Vertical Scroll bar	Value
Option Buton	Value	Picture Box	Picture
CheckBox	Value	Drive ListBox	Drive
ListBox	Text	Directory ListBox	Path
ComboBox	Text	File ListBox	FileName
Timer	Enabled	Image	Picture

2-2-3 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.