

PROGRAMMING LANGUAGE 2 (SPM3112)

INTRODUCTION TO VISUAL BASIC

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Topics

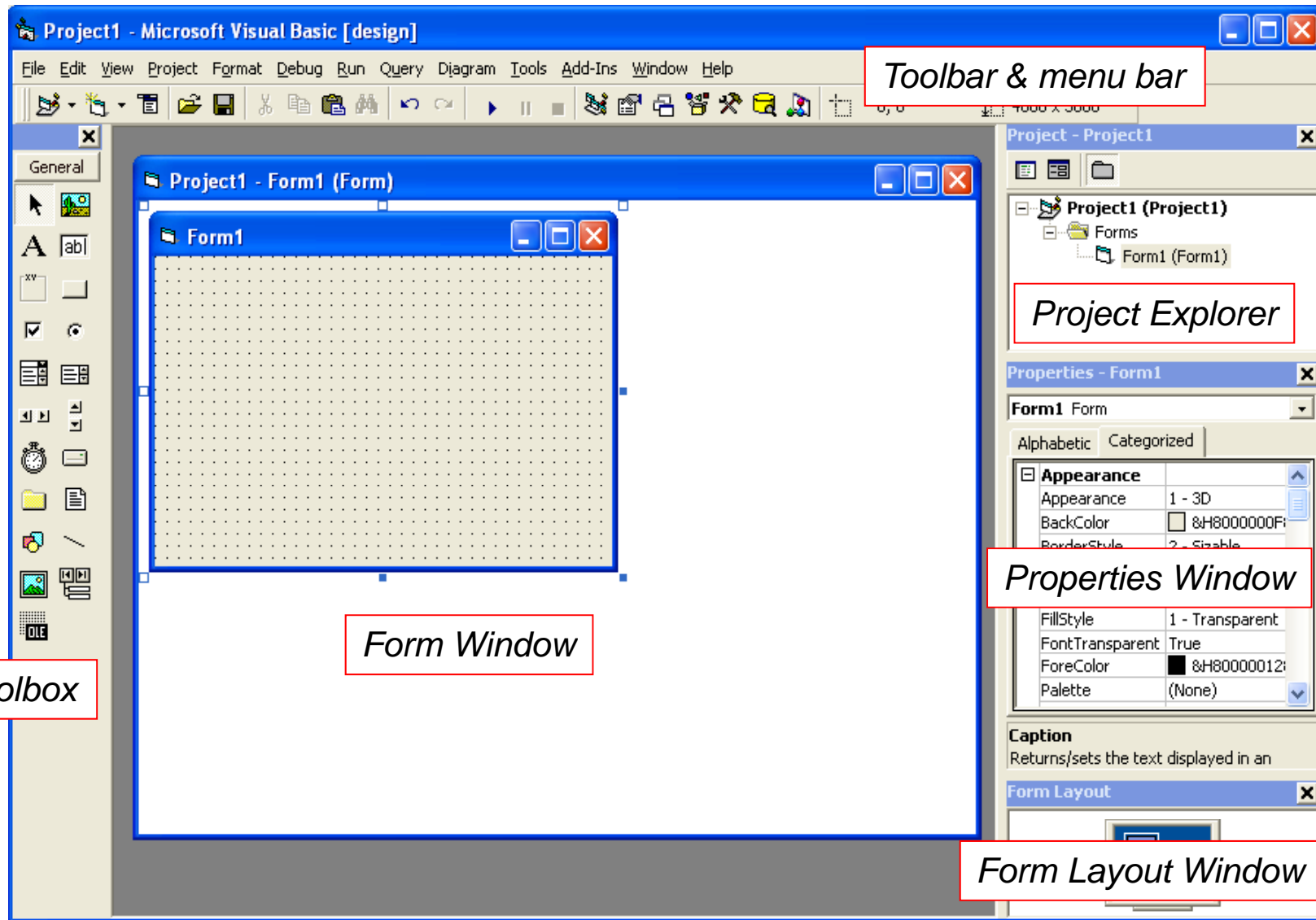
- Visual Basic Components
- Basic Operation
- Screen Size
- File Properties
- Forms
- Code Editor
- Running project

GETTING TO KNOW THE ENVIRONMENTS

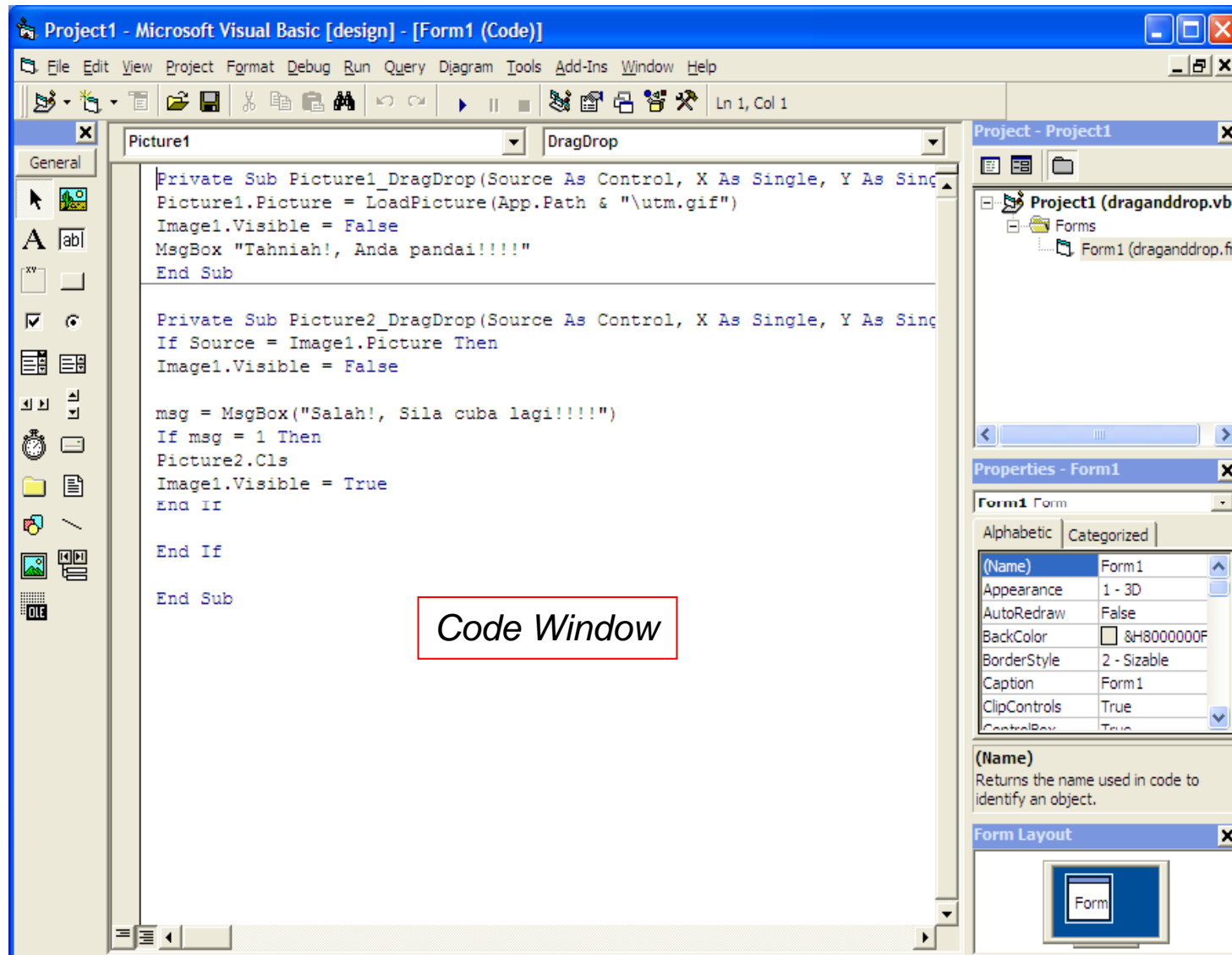
Introduction

- VB environment or VB's Integrated Development Environment (IDE) → programmer create, run & test VB projects.
- IDE manages projects → through the addition of objects & procedures
 - to compiling & packaging the completed applications.
- Contains 7 essential components
 1. Form window
 2. Properties window
 3. Code Window
 4. Form layout window
 5. Project window
 6. Toolbar and Menu Bar
 7. Toolbox

GETTING TO KNOW THE ENVIRONMENTS



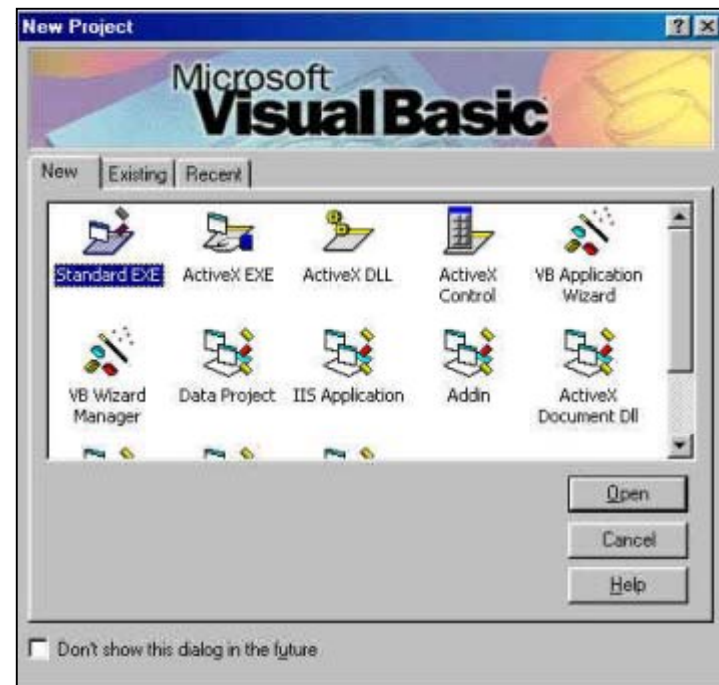
GETTING TO KNOW THE ENVIRONMENTS



GETTING TO KNOW THE ENVIRONMENTS

Basic Operations

- Before embarking - VB project, you need → to become fluent with the VB basic operations (i.e. open, close & save project).
- How to create new project?
 - By creating New Project?
- What next???
- But why must standard exe?
 - ...any specific reason?...
- How to close VB project?
 - Remove project or exit?
- How to save VB project file?
 - Save project?, save project as?
 - Or save form?
- How to re-open project file?



GETTING TO KNOW THE ENVIRONMENTS

Screen Size

- VB screen size?
 - Full screen? - Minimise? -Maximise?
 - 640 x 480? -800 x 600? -1024 x 768??
- How to change screen size by using pixels?
- How to make black full screen?
- Why we need black full screen in VB project?

GETTING TO KNOW THE ENVIRONMENTS

File Properties

- Start up position
 - Center screen?
 - What else? Form Layout?
- Title bar
 - How to change default title Form1?
 - No title bar? What else?
- Menu bar
 - How can we create it?
- Background color – bgcolor?

VISUAL BASIC COMPONENTS

Form

- Form → represents a project's window interface → referred GUI.
- Use to **display information** to user, & to **hold controls** → allow the user to interact with the program.
- Form's default bg colour is grey & one project can contains several forms.

VISUAL BASIC COMPONENTS

Form

- Can we create more than one form??
- Can we apply different background color in VB project?
- If VB project have three forms, how to run project from form 2?

VISUAL BASIC COMPONENTS

Code Editor

- What is the function of code editor?
 - For writing code???
- How to change mode from code to design?
- Double click objects can display code editor?
- How to choose objects and events from code editor

VISUAL BASIC COMPONENTS

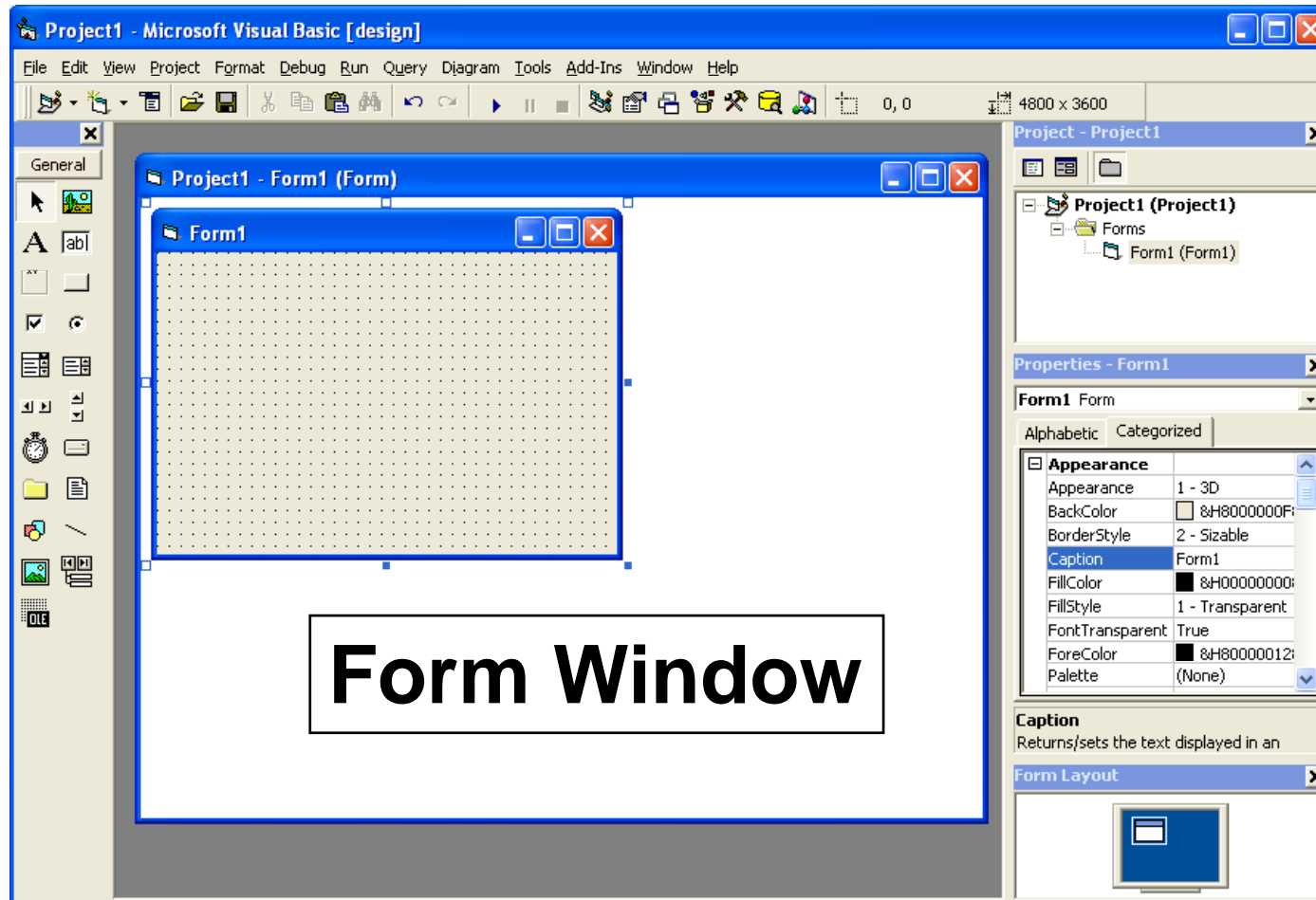
Running Program

- How to run VB projects?
- How many mode in VB?
- What is break mode?
- Can we edit or correct program in break mode?
- What can we do in break mode?

DETAIL IN VISUAL BASIC ENVIRONMENT



VISUAL BASIC ENVIRONMENT

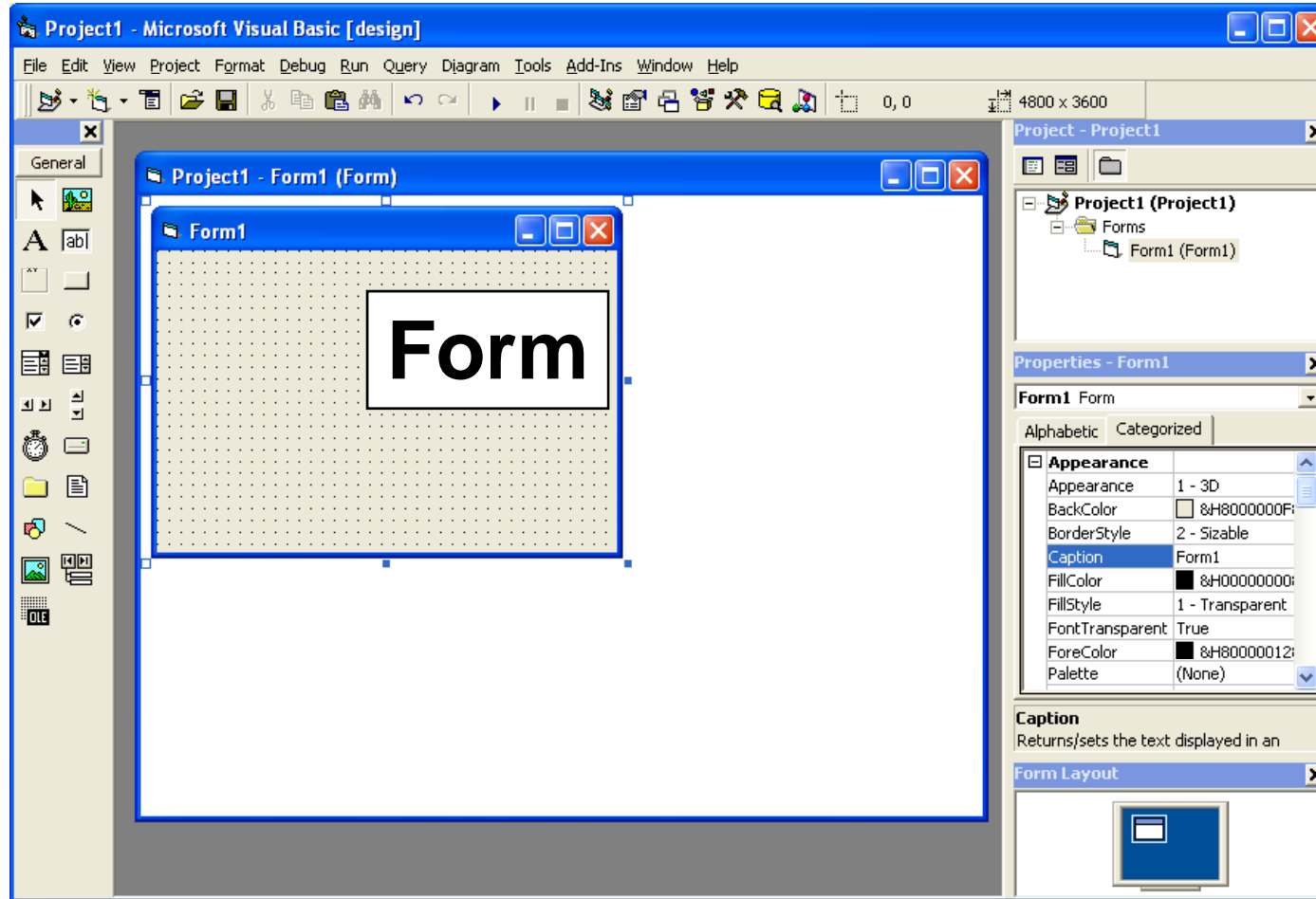


VISUAL BASIC ENVIRONMENT

Form

- Form → represents a project's window interface → referred as : Graphical User Interface (GUI).
- Use to
 - display information to the user,
 - hold controls that allow the user to interact with the program.
- Form's default background = grey
- one program can contains several forms
- form has properties & can be populated with objects

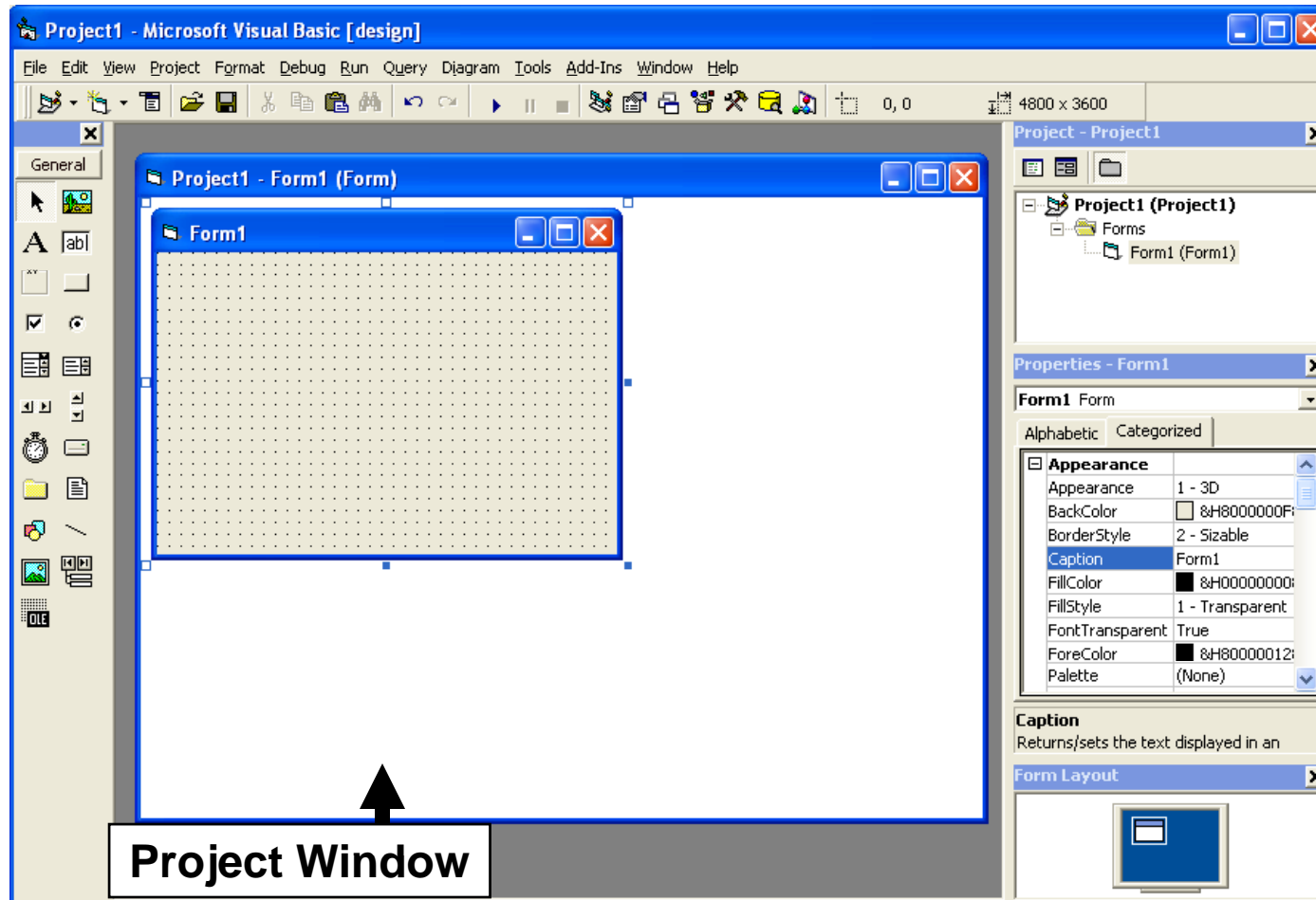
VISUAL BASIC ENVIRONMENT



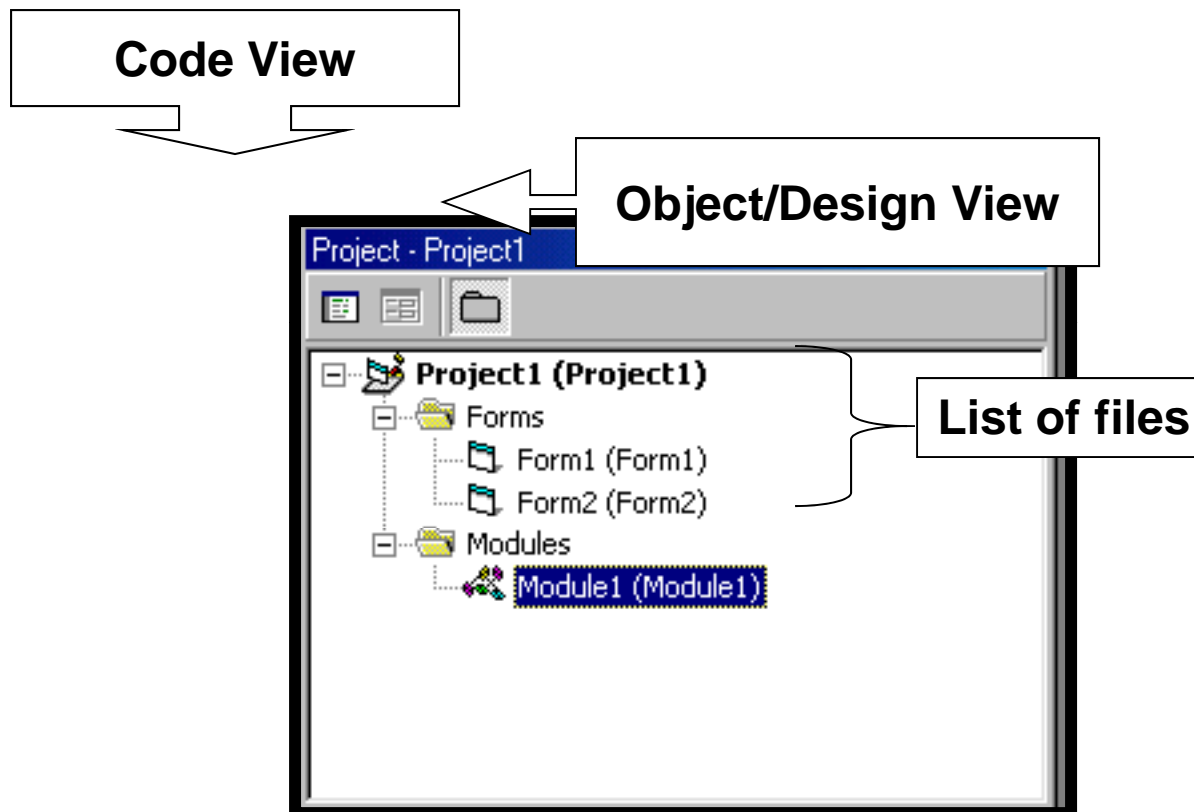
VISUAL BASIC ENVIRONMENT

- Project Explorer (a.k.a Project Window)
 - Contains: **project files**, **view code button**, **view object button** and **toggle folder button**.
 - All files → **arranged in a tree structure fashion**
 - can **expand or collapse** the explorer → **clicking plus & the minus signs**.
 - use the Project window → **activate any of the files that you want**.

VISUAL BASIC ENVIRONMENT



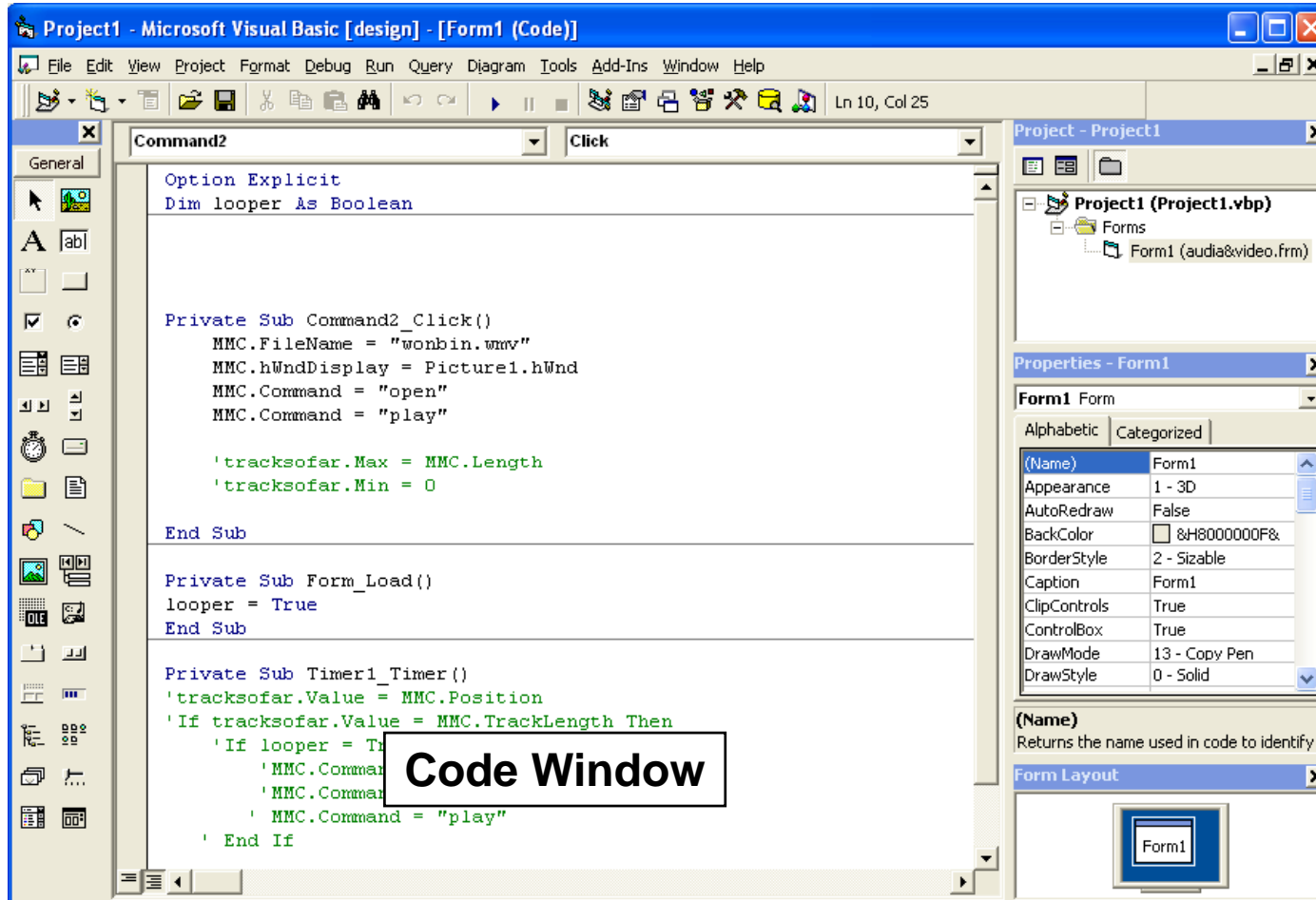
VISUAL BASIC ENVIRONMENT



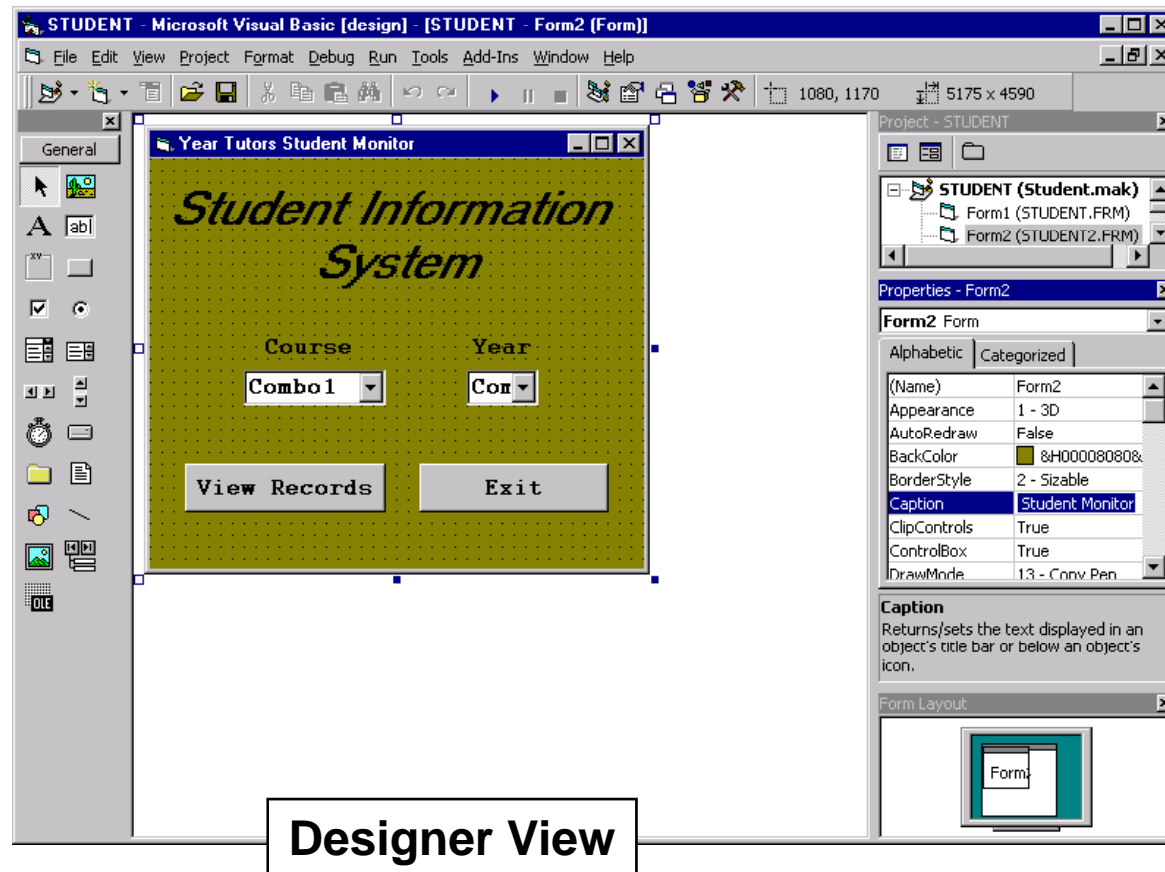
VISUAL BASIC ENVIRONMENT

- Code Window (a.k.a Code Editor)
 - Displays a window for writing VB code.
- Designer View (a.k.a Object View)
 - Displays the form.

VISUAL BASIC ENVIRONMENT



VISUAL BASIC ENVIRONMENT



VISUAL BASIC ENVIRONMENT

Toolbox

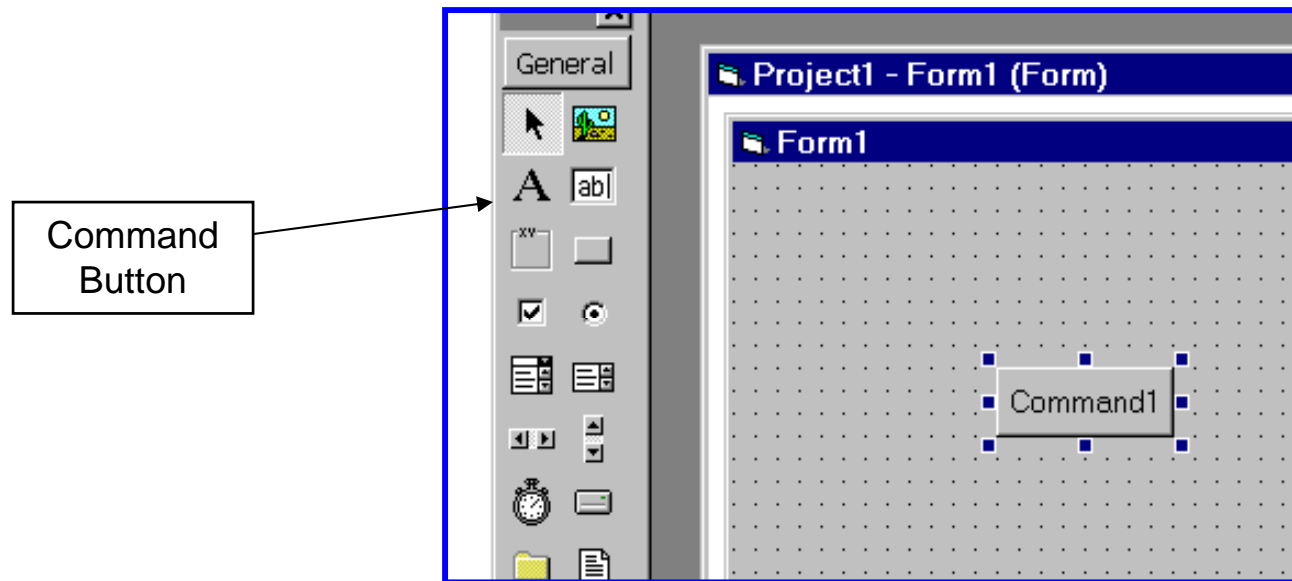
- Contains a set of icons, each → represents control object @ control.
- use to develop VB applications.
- VB's controls that displayed in the toolbox are:

- | | | |
|--|--|--|
| <input type="checkbox"/> PictureBox | <input type="checkbox"/> ComboBox | <input type="checkbox"/> Timer |
| <input type="checkbox"/> TextBox | <input type="checkbox"/> ListBox | <input type="checkbox"/> DriverListBox |
| <input type="checkbox"/> Label | <input type="checkbox"/> H&V ScrollBar | <input type="checkbox"/> FolderListBox |
| <input type="checkbox"/> Frame | <input type="checkbox"/> Shape | <input type="checkbox"/> OLE |
| <input type="checkbox"/> CommandButton | <input type="checkbox"/> Image | |
| <input type="checkbox"/> CheckBox | <input type="checkbox"/> Data | |
| <input type="checkbox"/> OptionBox | <input type="checkbox"/> Line | |
| <input type="checkbox"/> FileListBox | | |

* Can add more controls at **Project > Components**.

THE COMMAND CONTROL

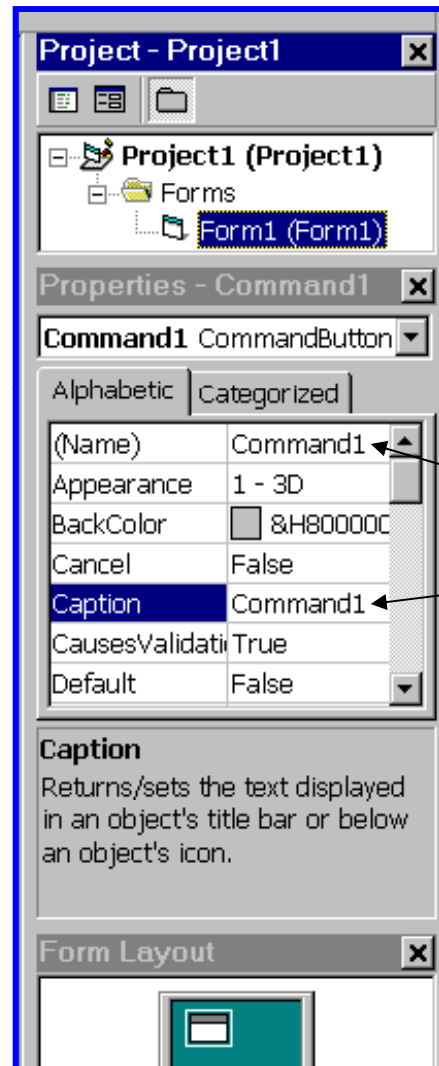
- command control @ button → is one of the **most important tools** in toolbox.
- **Double clicking** command button icon → will **install a command button on the working form**.



THE COMMAND CONTROL

- default command buttons are : **Command1, Command2, etc.**
- Command button can be **moved @ changed in size** → using **the mouse**.
- Each command button has **several properties** → button's appearance & behaviour.
- The **most important properties** are : **name & caption**
 - **name** → programmer can refer the button in VB code.
 - **caption** → a user will see on the button.

THE COMMAND CONTROL



Two important properties

THE COMMAND CONTROL

- Highlighting a Property
 - When highlight property → its definition appears in the properties window.

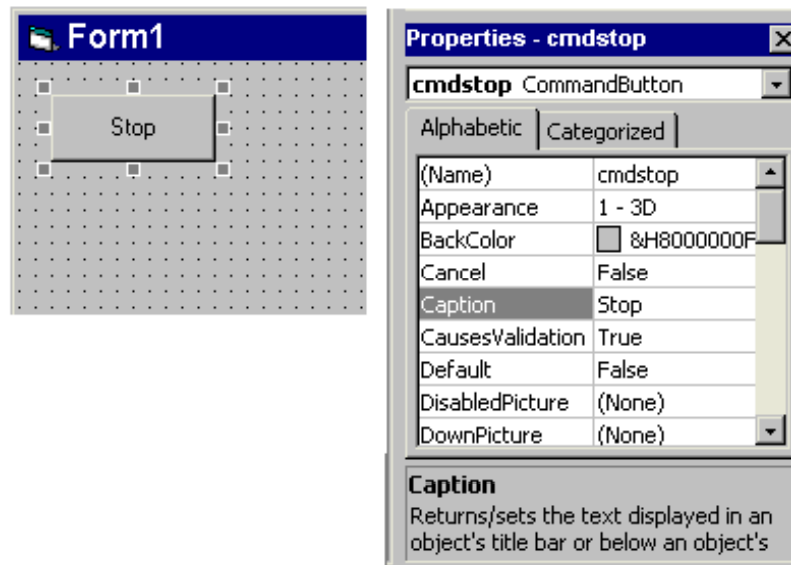
Cancel	False
Caption	Command1
CausesValidation	True
Default	False

Caption
Returns/sets the text displayed in an object's title bar or below an object's icon.

Explain the function of caption

THE COMMAND CONTROL

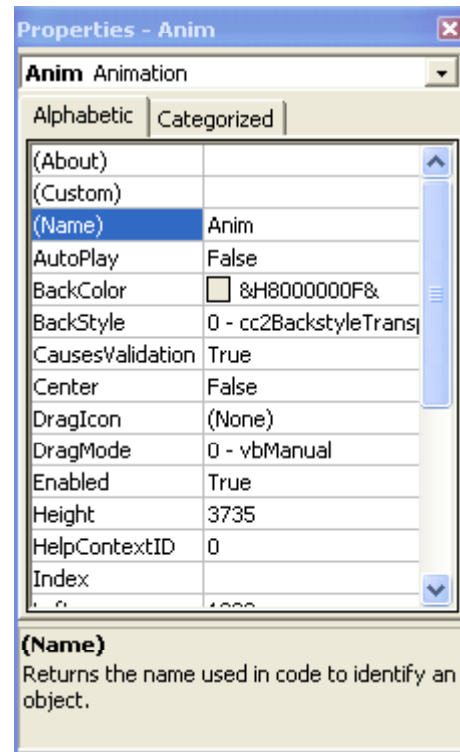
- Names and Captions
 - Clicking **name** property → will allow user to give a new name.
 - Changing the **caption** to “**Stop**” gives the user an idea as to the button’s function.



VISUAL BASIC ENVIRONMENT

- Properties Window
 - Every object in Visual Basic (including the form) **has its own set of properties.**
 - properties → are **attribute values** of an object eg. color, size, position and appearance.
 - Properties are listed either → **alphabetically** or **categorically**
 - **Alphabetic list** the properties in **alphabetical order**
 - **categorized list** properties by **categories.**

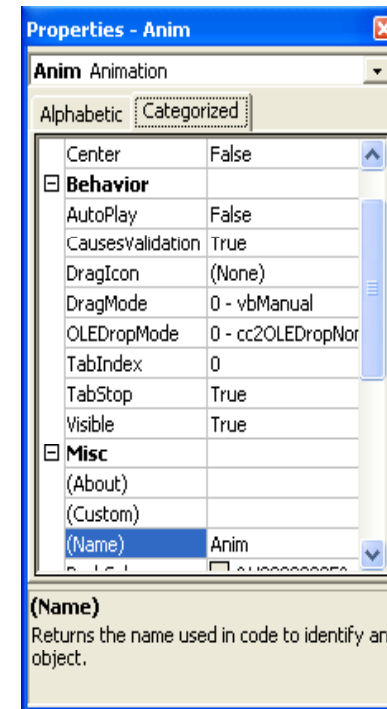
VISUAL BASIC ENVIRONMENT



Name of control

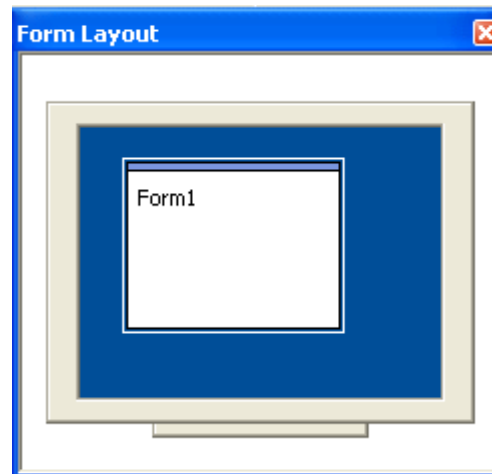
Type of control

Selected property description



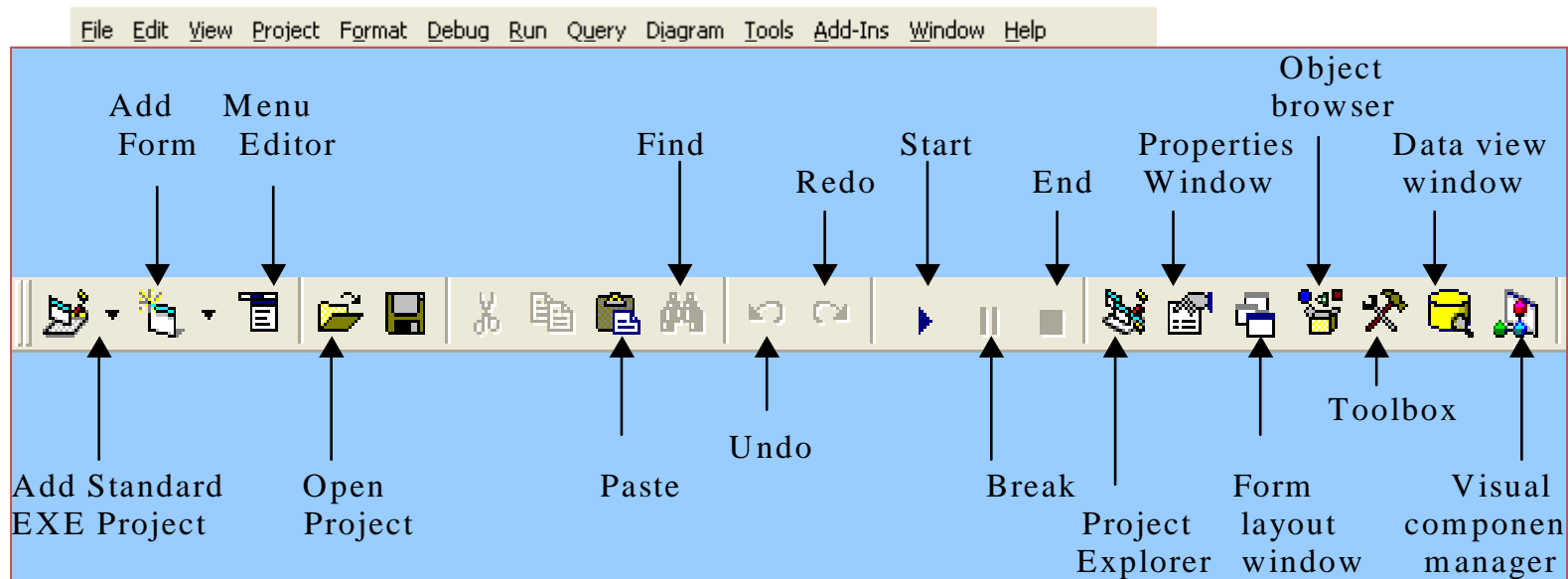
VISUAL BASIC ENVIRONMENT

- Form Layout Window
 - Specifies a form's position on the screen at runtime.



VISUAL BASIC ENVIRONMENT

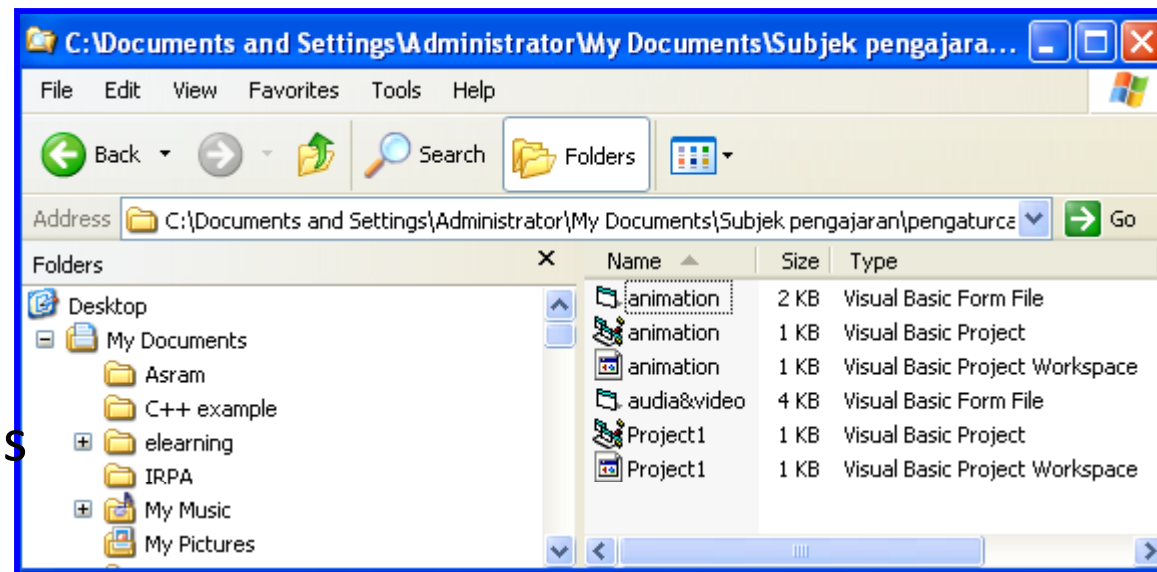
- ToolBar and MenuBar
 - **Commands** for developing, maintaining & executing VB's application.
 - ToolBar **uses icons** → to **represent command**
 - MenuBar **requires user to select appropriate choices from the menu list.**



VISUAL BASIC ENVIRONMENT

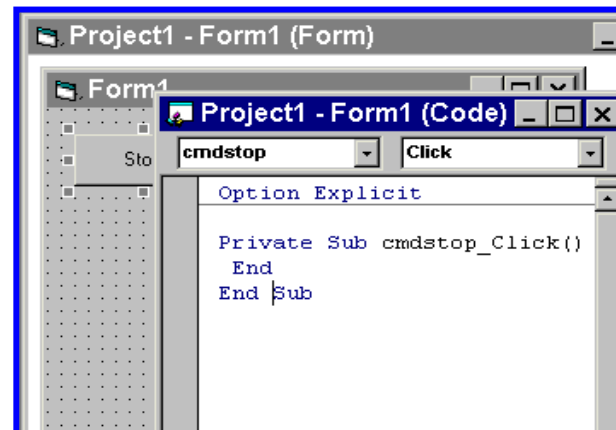
Structure of Visual Basic Program Files

- Project File
 - ‘.VBP’
- Form Files
 - ‘.FRM’
- Modules
 - ‘.BAS’
- Custom Controls
 - ‘.VBX’



ENTERING EVENTS CODE

- Double clicking on the button → causes the Code window to open.
- **End** command → terminates the VB program.
- You can also use **unload me** → to terminate the VB program.

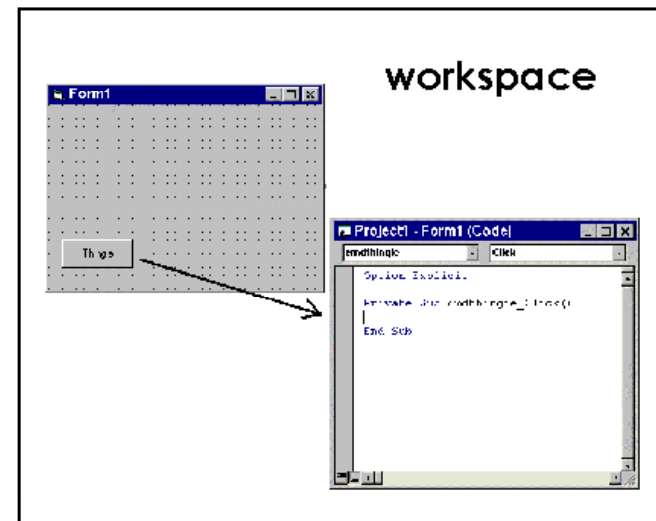


THE PROGRAM EDITOR

- Visual Basic (VB) supports a text editor (not a word processor)
- The **editor** → is one of two sub-windows
 - that appears in the Workspace & Forms window.

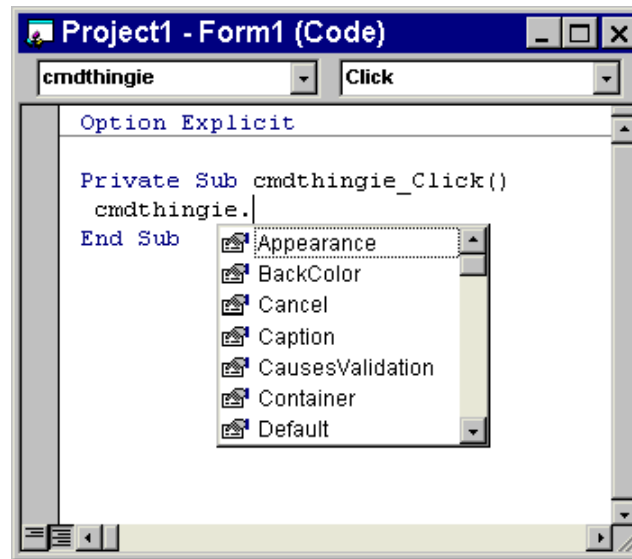
ENTERING THE EDITOR

- editor is usually entered by double clicking → on control in the workspace.
- The result → code window which opens with the subroutine @ procedure



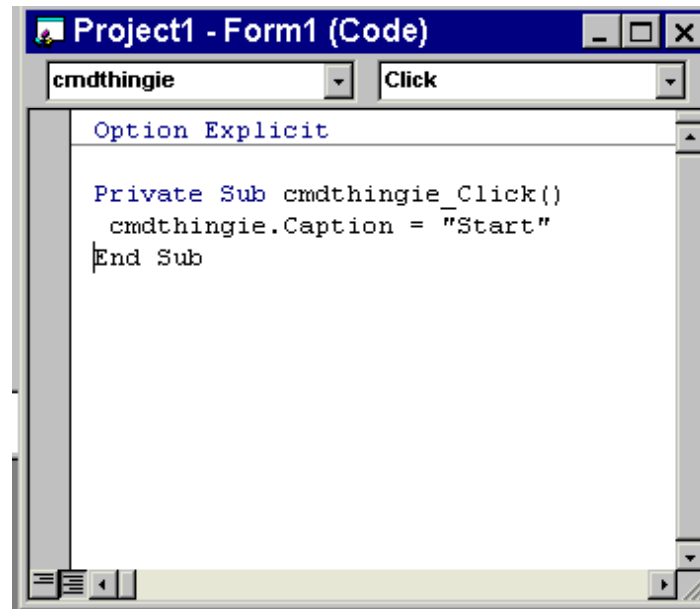
ACCESSING PROPERTY

- To **access any controls properties** → write **dot** after control name.
- ∴ **list of known properties** → be displayed.



AUTOMATIC CORRECT

- `cmdthingie.cap="start"` (no capitals, only part of the word caption, no spaces at all and no closing quote.)
- The editor → will correct or complete the code.

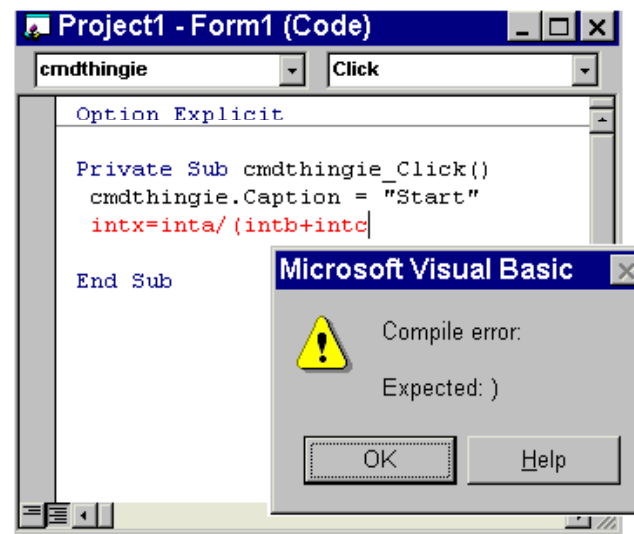


```
Project1 - Form1 (Code)
cmdthingie Click
Option Explicit

Private Sub cmdthingie_Click()
    cmdthingie.Caption = "Start"
End Sub
```

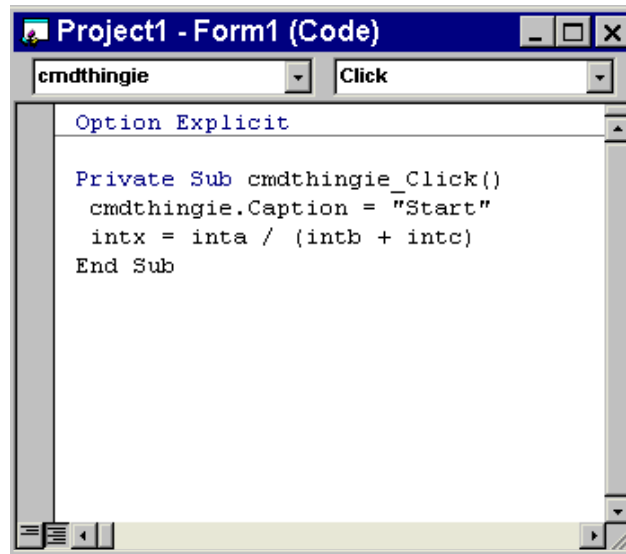
AUTOMATIC CHECK

- any line code possesses syntax error →
 - the line turned red,
 - a notice box will be posted as soon as the key or the cursor moved to a different line.



AUTOMATIC CHECK

- When **no space** → provided after **braces** “(“ & “)”
 - the editor will automatically fixed it.

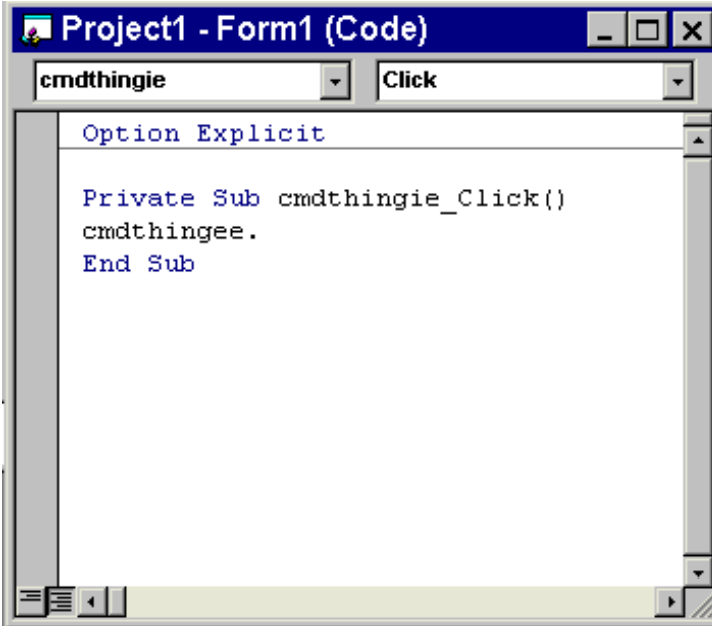


```
Option Explicit

Private Sub cmdthingie_Click()
    cmdthingie.Caption = "Start"
    intx = inta / (intb + intc)
End Sub
```

AUTOMATIC CHECK

- The editor → not have provided any help if there is no existing data on specific object.
- Syntactical error will be shown.

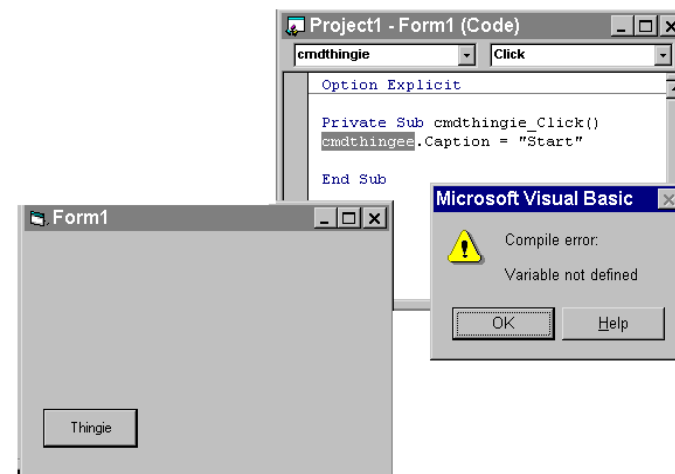


Project1 - Form1 (Code)

cmdthingie Click

```
Option Explicit

Private Sub cmdthingie_Click()
cmdthingee.
End Sub
```



RUNNING A PROGRAM

- Clicking the **start** tool → begins the program.
- The **break** tool → pauses a program in mid-execution.
- The **end** → tool terminates a program.

