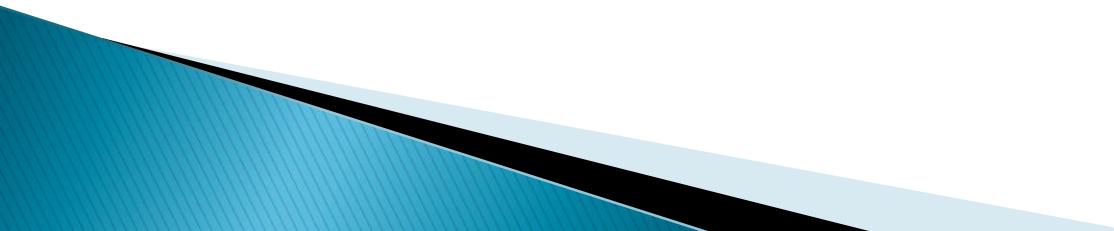


# Introduction to Visual Basic

by Neeraj Kumar Sharma

**Objective:** This objective of this document is to provide sufficient study material for the students of B.A. Program with Computer Applications so that they may develop the ability to understand and study the Visual Basic.



- ▶ **Visual Basic: What type of language is it?**
- ▶ Visual Basic programming languages offers the following features which makes it more suitable for stand alone programs and client programs in the client server model.
- ▶
- ▶ It is a procedural language
- ▶ Supports Object Oriented Features
- ▶ Suitable for graphical windows based applications
- ▶ Suited for client side or stand alone programs more than server side ones
- ▶ Supports event handling
- ▶
- ▶ With this information, students should have a better sense of the areas where Visual Basic programs can be created and used.

# Let Us Start Programming

- ▶
- ▶ **Sequence of executing instructions of a program**
- ▶ Before start writing our first program, let us know how computer will execute the program created by us.
- ▶
- ▶ A program is defined as a set of instructions that we want computer to execute. Knowing that computer can do only what is told to it in the form of instructions. Therefore a program should be written something like this:
- ▶ **With Explicit Instruction**
  - Do task 1 and move to next instruction
  - Do task 2 and move to next instruction
  - Do task 3 and move to next instruction

# Let Us Start Programming

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```
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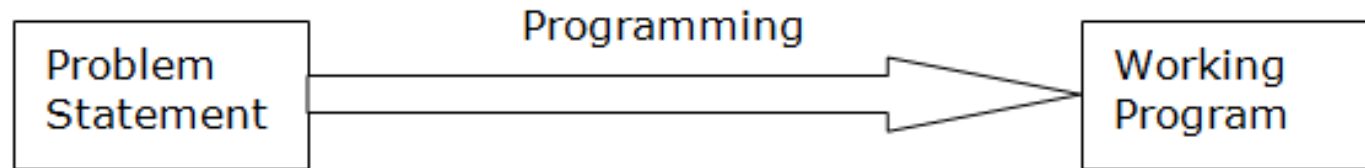
But while writing the program, we do not write the part of each instruction (which is written in bold in previous block) that asks computer to start executing the next instruction. Here we assume that computer will automatically move itself from one instruction to

## With Hidden Instruction

```
Do task 1
Do task 2
Do task 3
```

# Let Us Start Programming .. continued ..

- ▶ What is programming (one more way to look at)
- ▶ Programming is the process of moving from a problem description to a “working program” that helps in solving that problem with the help of



- ▶ Writing our first program
- ▶ Let us take the following as our first problem. This program is the first step. This will make you know many concepts at the same time therefore, go through it very slowly and attentively.

# Problem statement

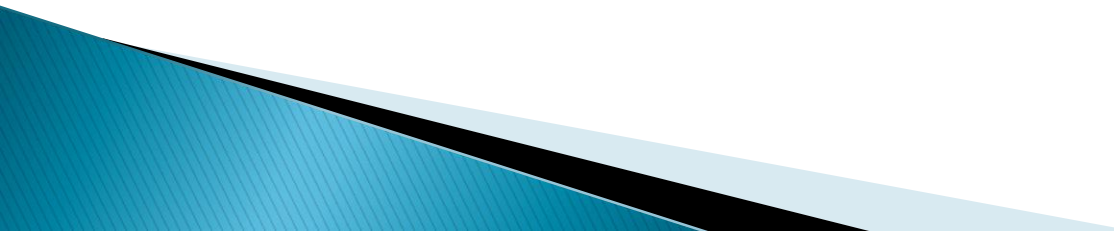
- ▶ **Problem Statement** : Create a program that finds the sum of two numbers (e.g. 5 and 6) given by a user.
- ▶ **Objective of this program**: The objective of this program is to know the minimum set of items needed to make a basic program. This example will let us know some new concepts like
  - ▶ Graphical Objects like Forms, Textbox and Command Button
  - ▶ Functionality of Tasks with Events
  - ▶ Understanding memory variables
  - ▶ Understanding assignment statement
  - ▶ Understanding properties, methods

Next, let us go through our step by step process of creating a program from a problem statement

# Analysis of Problem

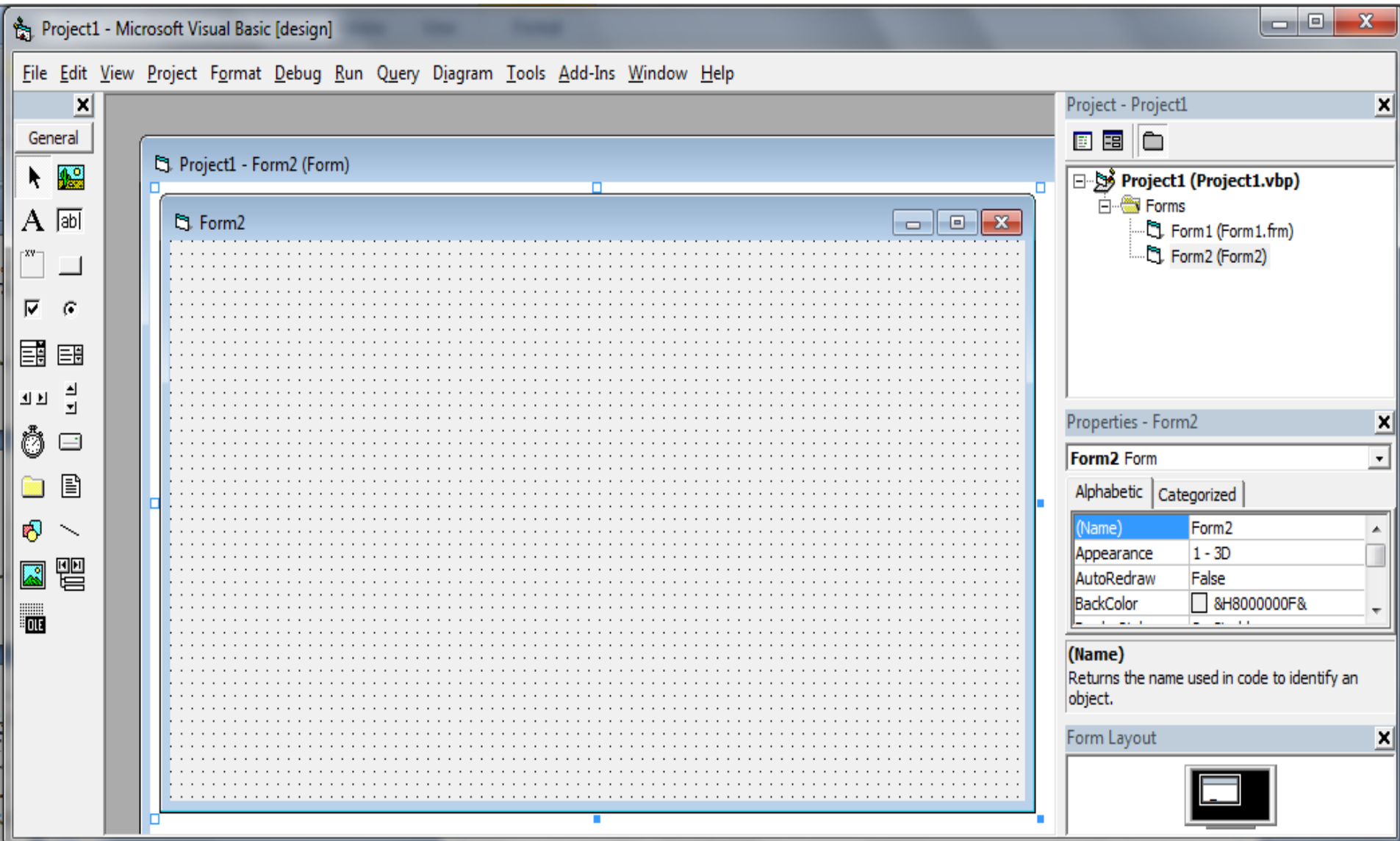
- ▶ **Step 1: Do I understand the problem.**
- ▶ **Step 2: Can I solve it myself?**
- ▶ **Step 4: How should I tell someone other person to do the same.**
- ▶ **Step 3: How should program look like at the time of execution?**

In this step we have the following questions to be answered.

- ▶ How user will start the program?
  - ▶ What will computer show once the program starts running?
  - ▶ How will user enter the numbers that are to be added?
  - ▶ How will the user ask computer to should start adding the numbers?
  - ▶ How will the result be shown to the user?
  - ▶ How will the user stop the program?
- 

# Visual Basic Environment (First Look)

- ▶ A typical screen depicting the working environment of Visual Basic 6.0 is depicted below:





# Visual Basic Environment Introduction

- ▶ Visual Basic provides different graphical objects that can be displayed to a user when the program runs. These graphical objects can be used for accepting the user input data, commands and also to show the output values. Remember that these objects are for input as well as output purposes. The important graphical objects that we will need in this program are forms, text boxes, command buttons, labels:
  1. **Form:** A form is a rectangular window that represents a program. This form can have different graphical objects put/pasted on top of it.
  2. **Label:** A label is a text matter that can be put on a form.
  3. **Text Box:** A text box is a graphical object which is primarily capable of accepting input values from a user.
  4. **Command Button:** A command button is a graphical object which is used to accept user action requests. A user normally clicks or double clicks on a button to instruct the computer to do the task associated with that button.

# Visual Basic Environment Introduction .. continued ...

- ▶ All these graphical objects have different properties associated with them. A programmer can change the properties of graphical objects to view them in a desired manner. Properties of the selected object are normally shown on a right hand side window of IDE. Some of the commonly used properties are:
  1. **Caption:** This property is used to show display text associated with the graphical object.
  2. **Font:** This property is used to select the font type, font size and font color of the text associated with the graphical object.
  3. **Tab Index:** This is an interesting property. This property is used to decide the order in which the cursor should move when a user presses Tab on one object.
  4. **Enable:** This property is used to specify if an object is being used only for the display of the result or user can change that value.
  5. **Text:** This property is used to show a value that is already displayed as soon as the program starts.
  6. **Name:** This property is used to give the graphical object an internal name so that while programming an object can be accessed by its name.

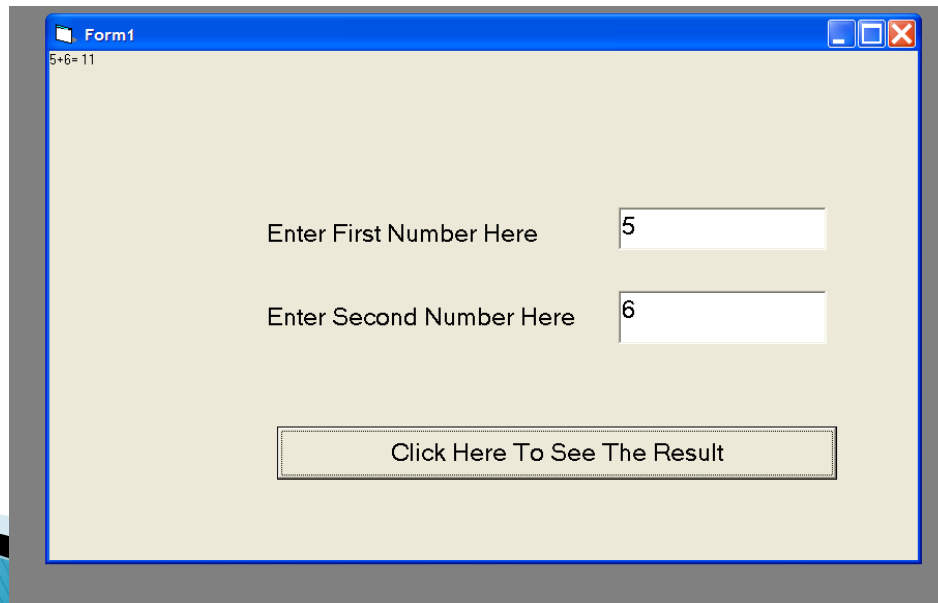
# Visual Basic Environment Introduction ..

continued ...

- ▶ Another important thing to be decided at this time is how to show results to the user. Here we have the following choices available. It is up to the programmer to evaluate the best way in a given situation.
- ▶ **On window area of the form:** This way is mostly not used in real problems, but we will be learning this method initially.
- ▶ **In a graphical object in the main form:** By this way the result is shown in another graphical object e.g. a text box.
- ▶ **On a new pop up form or message box.** By this way the result can be shown through a message box or on the window screen of some other form. We will also not use this style for this problem.

# How the Program Result May Look Like

- ▶ After all this discussion, we have the following answer to this step.
- ▶ **Final Output :** We would create a form which appears as follows. It provides two text boxes for inputting the data. It performs the addition of two numbers by clicking on the command button. It allows user to stop the program by clicking on “X” button on the right top corner of the form screen. It shows the result on the window surface of the form and does not use another graphical object to show the result.



The screenshot shows a Windows application window titled "Form1". The window has a blue title bar with standard minimize, maximize, and close buttons. The main content area is light beige and contains the following elements:

- A small text label in the top-left corner: "5+6= 11".
- A text label "Enter First Number Here" followed by a text box containing the number "5".
- A text label "Enter Second Number Here" followed by a text box containing the number "6".
- A rectangular command button at the bottom with the text "Click Here To See The Result".