Windows Programming in VB

Introductory Exercises

Create windows forms project(s) to test out the following techniques:

Basic Input, Output and Processing with Text Boxes and Labels:

- A button that when clicked displays "Hello World" on a msgBox
- A button that when clicked displays "Hello World" on a Label
- A textbox and a button that when clicked displays the contents of the textbox in the msgBox
- Two textboxes a label and a button. when the button is clicked it adds together the numbers entered in the textboxes and displays the sum on the label
- Create an application that multiples two numbers together
- Create an application that subtracts one number from another
- Create an application that divides the first number by the second.
- Create an application that has JUST ONE TEXT BOX! The user inputs a number, the + button is pressed and the first number is stored and the text box cleared. A second number is inputted, the = button is pressed and the sum of the two numbers is displayed in the textbox.
- Create an application with two textboxes (labeled Number1 and Number2). If either textbox has a number entered or changed (use the OnExit event) a label should state which of the textboxes has the larger value
- Create a game that generates a random number between one and one hundred and asks the user to guess. Your form should have a text box that allows the user to enter guesses and a label that displays either "Too High", "Too Low", "Well done" or "You are out of guesses". There should be a second label that displays how many guesses they have left (start with 5).

Images and Timers:

- Create an application with ONE button and ONE image (or drawing). The button should make the image appear OR disappear. i.e. if it is currently visible then it should be made invisible (visible=false) and vice versa..
- Create an application that has a single image (or drawing) that flashes (appears and disappears) 4 times a second using the timer control.

Combo Boxes and List Boxes:

- Alter the previous application by adding a combo box (with the values 1 to ten) and labeled frequency that changes the number of times a second the image flashes.
- Create a form with a list box and a button when the button is pressed the numbers one to ten should be displayed in the list box USE A LOOP TO DO THIS!!
- Alter the above code to create a times table generator – Add a combo box Labeled "which table?" Hard code or alter the combo box properties so it has the options 2,3,4,5,6,7,8,9,10. When the button is now pressed, the selected times table should be displayed in the list box.
- Create a form that has a text box in which the user inputs names. Each time the button is pressed the name should be added to an array. The complete contents of the array should be displayed in a list box after each entry.

Bigger Programming Tasks

The following exercises are in increasing order of difficulty. Feel free to select one or two according to your level of confidence with this work:

- **Task 1   Create a Four Operation single screen calculator (the basic version of the windows calculator)**

- **Task 2   Create a Traffic Light simulator**
The main aim of this exercise is to give you experience of using code to manipulate controls/objects, Including the timer. Try to make your final application look good. You can choose to do any one of the options below.

Basic: A single set of lights that cycle through the normal routine found at junctions etc...

Intermediate: Pedestrian crossing: A single set of lights with a Green Man/ Red Man and a WAIT light and a Button. the lights should cycle through the normal routine for a pedestrian crossing stopping the traffic when someone wants to cross.

Tricky: A T-Junction simulator that either allows traffic to flow along the main road OR from the side road.. (you could make it more complicated if you like) there should also be a pedestrian button that stops all traffic flow.

- **Task 3   Create a TWO form application that has a data input Form that writes to a file and a display form that reads/edits the same file. The scenario is a bank account system. The initial form should store the following info:**

AccountNumber, FirstName, LastName, OpeningBalance.

The text file should store all four items (although the opening balance should be called CurrentBalance)

The read edit form should allow the user to "browse" through records one by one OR search by accountNumber and LastName. The read form should display all of the details and allow the user to record a deposit or withdrawal. Only the current balance needs to be stored.

- **Task 4   Create a windows hangman game with the following features:**

  - **Input for currentLetterGuess (could be text box or letter buttons)**
  - **List of LettersAlreadyGuessed (list box or label)**
  - **Gallows indicating how may wrong guesses (lots of ways of doing this.... images, drawing object, etc..)**
  - **Message to say if won or hung**
  - **The work they are guessing should be picked <u>at random from a text file</u> (although I would start with a hard coded word to test the above code)**
  - **Input for if the user wants to guess the whole word (ideally the same box as the letter guess)**