



Programming Tutorials

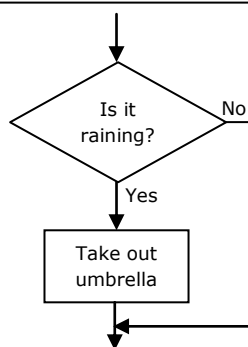
"If . . . Then . . . Else" Statements

When creating a program, often you will need to tell the program to perform a specific task only **IF** a certain condition is true. This is known as making a **decision**.

For example if you were creating a program to help you decide whether or not to take an umbrella out with you it would look like this:

```
IF it is raining THEN  
    Take umbrella out  
ELSE Leave umbrella at home
```

The example below shows a flowchart of this decision and how it would look in VB code. Notice that when you use an "If" statement it is always finished with "End If".



```
If Rain = True Then  
    <TAKE UMBRELLA>  
Else  
    <DO NOT TAKE UMBRELLA>  
End If
```

Try the exercises below to practise using "If . . . Then . . . Else" statements:

- 1) Create a large button on the form with the following properties:

Name	btnChange
Text	Hello

Then on the mouse_click event for the button type the following code:

```
If btnChange.Text = "hello" Then  
    btnChange.Text = "goodbye"  
Else  
    btnChange.Text = "hello"  
End If
```

OUTCOME: Every time you click on the button the text should toggle between "Hello" and "Goodbye".

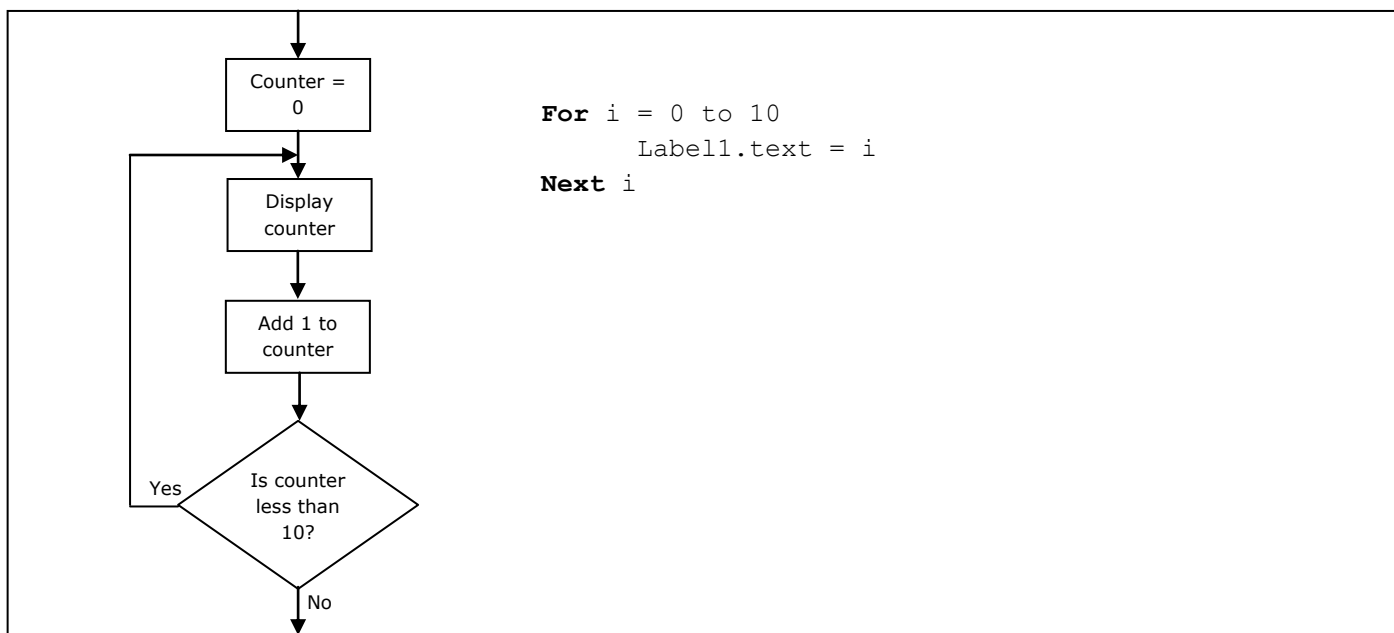
- 2) Insert two pictures and a button onto the form and insert code that toggles between the two pictures when the user clicks the button.



"For . . . Next" Loops

If a specific piece of code needs to be carried out several times the most efficient way to create a program is to use loops. Here we are going to focus on "For" loops.

Below you can see a flowchart of how a "For" loop works, along with how the code for it looks in VB.



Try the activities below to practise using "For . . . Next" Loops in VB.

- 1) Create a new program and add a button called '**btnStart**' and a text box called '**txtOutputCounter**' in the properties for the textbox you must set 'multiline' to **true**.

On the mouse_click event for the button type the following code:

```
Dim i as integer  
For i = 0 to 10  
    txtOutput.text &= "This is loop number " & i & vbcrLf  
Next i
```

This command puts the cursor at the beginning of the next line.

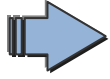
Try changing the loop to make it display 100 outputs on the screen.

- 2) Create a new program using a 'For . . . Next' loop that will display the 12 times table on the screen in a text box.

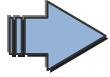


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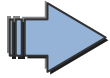
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