

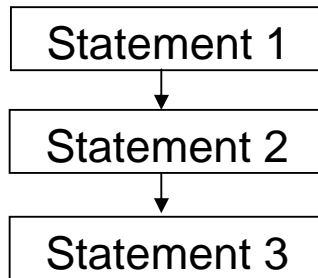
## Chapter - 5

### Visual Basic Control Structures

#### CONTROL FLOW

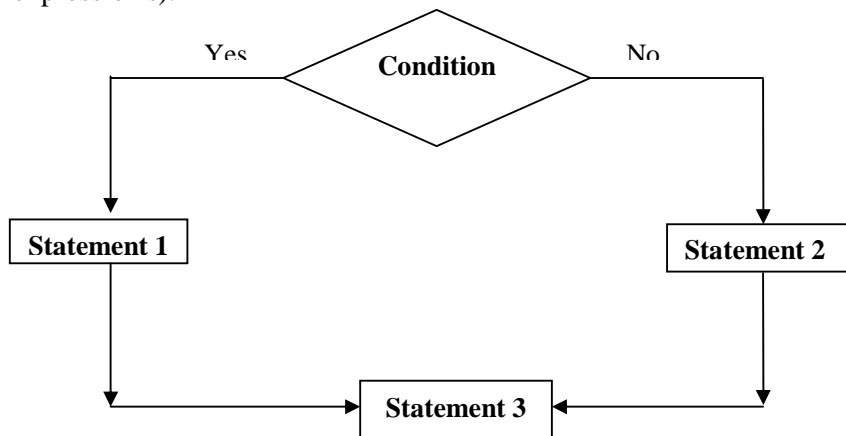
##### 1) SEQUENTIAL:

It means the statements are being executed sequentially. This represents default flow of statements.



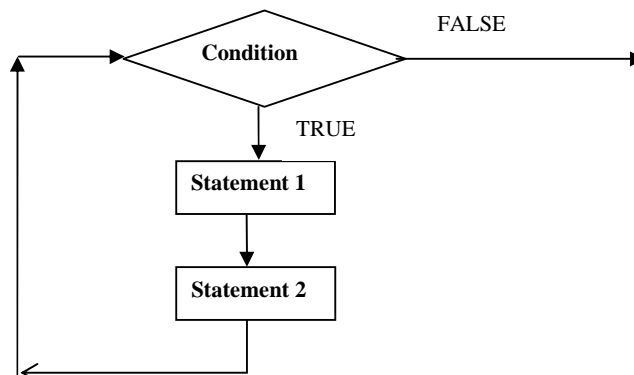
##### 2) SELECTION (Decision construct)

Selection construct select their course of action depending upon the result of a condition's) or Boolean expression's).



##### 3) ITERATION (Repetition)/ Looping :

Iteration means repetition of a set-of-statement depending upon a condition test. A loop is a set of statements that are repeated a certain number of times. The block of statements written in between the loop gets executed as many number of times as the user wants



**Rules for using Iteration:** The 3 steps involve in a loop are:

- |                  |                                                   |
|------------------|---------------------------------------------------|
| - Initialization | - of counter variable                             |
| - Test condition | - for testing the value of the counter variable   |
| - Updation       | - Increase/decrease the value of counter variable |

## Two Forms of SELECTION CONSTRUCT -

### ✓ Two Way Branching

#### IF Statement

- If .... Then ..... End If
- If .... Then ... Else .... End If
- Nested If
- If.... Then .... Else If .... End IF
- IIF ( exp1, <true>, <false>)

### ✓ Multi Way Branching

Select Case : It can be used with the following 3 forms:

- Exact Match
- A Relational Case Match
- A Range of Case Match

## Various Forms of LOOPING CONSTRUCT –

### ▪ Entry controlled / Pre tested / Top tested Loops :

*Condition is tested first then if it is true the body of loop executes.*

**NOTE:** *This type of loops executed for zero or more times.*

- While ..... Wend
- Do while ..... Loop
- Do Until ..... Loop
- For ..... Next

### ▪ Exit controlled / Post tested / Bottom tested Loops :

*Body of loop executed once and then condition is tested, if it is true body of loop continues.*

**NOTE:** *This type of loops executed at least once.*

- Do ..... Loop While
- Do ..... Loop Until

### ▪ For Each ..... Next

ARRAY: Arrays is a group of homogenous elements.

- An array is a collection of variables of the same data type that are referenced by a common name.

## Arrays are of Two Types:

- 1) Fixed / Static size Array: Those arrays in which the no. of elements is fixed and does not vary.
- 2) Dynamic size Array : Dynamic arrays are those arrays whose no. of elements can be varied.

Declaration of Array:

Fixed size	-	Dim ArrayName(size) as DataType	Eg: Dim arr(4) as Integer
Dynamic size	-	Dim ArrayName( ) as DataType	Eg: Dim arr1( ) as Integer

## Zero – based and One – based Indexing :

If an array is declared as arr(4) it means we count these element from 0 to 4 ie. 5 elements, so this is known as Zero – based Indexing.

And if an array is declared as arr(1 to 5) it means we count these element from 1 to 5 ie. 5 elements, so this is known as One – based Indexing.