

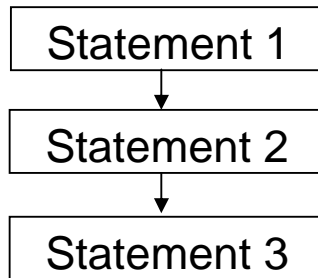
## Chapter - 5

### Visual Basic Control Structures

#### CONTROL FLOW

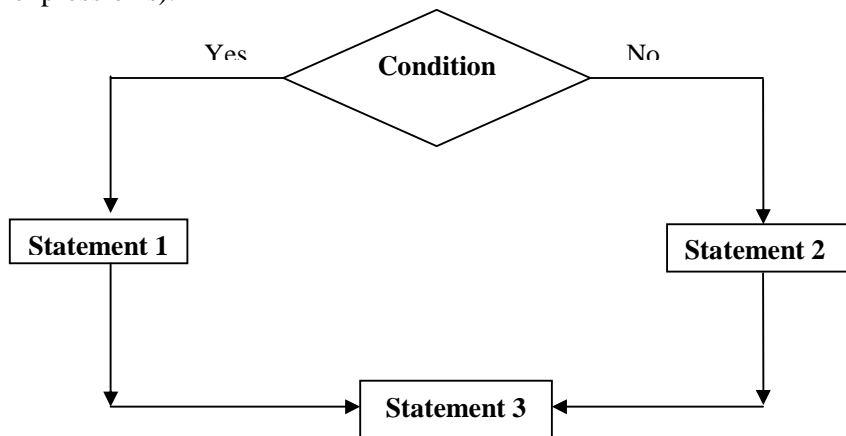
##### 1) SEQUENTIAL:

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



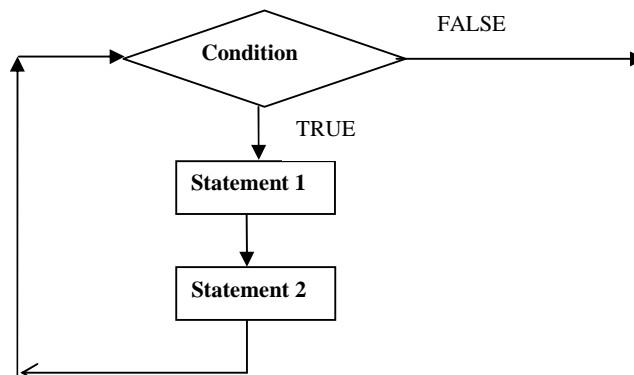
##### 2) SELECTION (Decision construct)

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.