Decisions

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Conditions

- A ***condition*** is an expression involving *relational operators* (such as < and =) that is either true or false. Conditions also may include *logical operators* (such as And, Or, and Not).

- The relational operator *less than* (<) can be applied to both numbers and strings. The string a is said to be less than the string b if a precedes b alphabetically (lexicographically). Digits precede uppercase letters, which precede lowercase letters.

Relational Operators

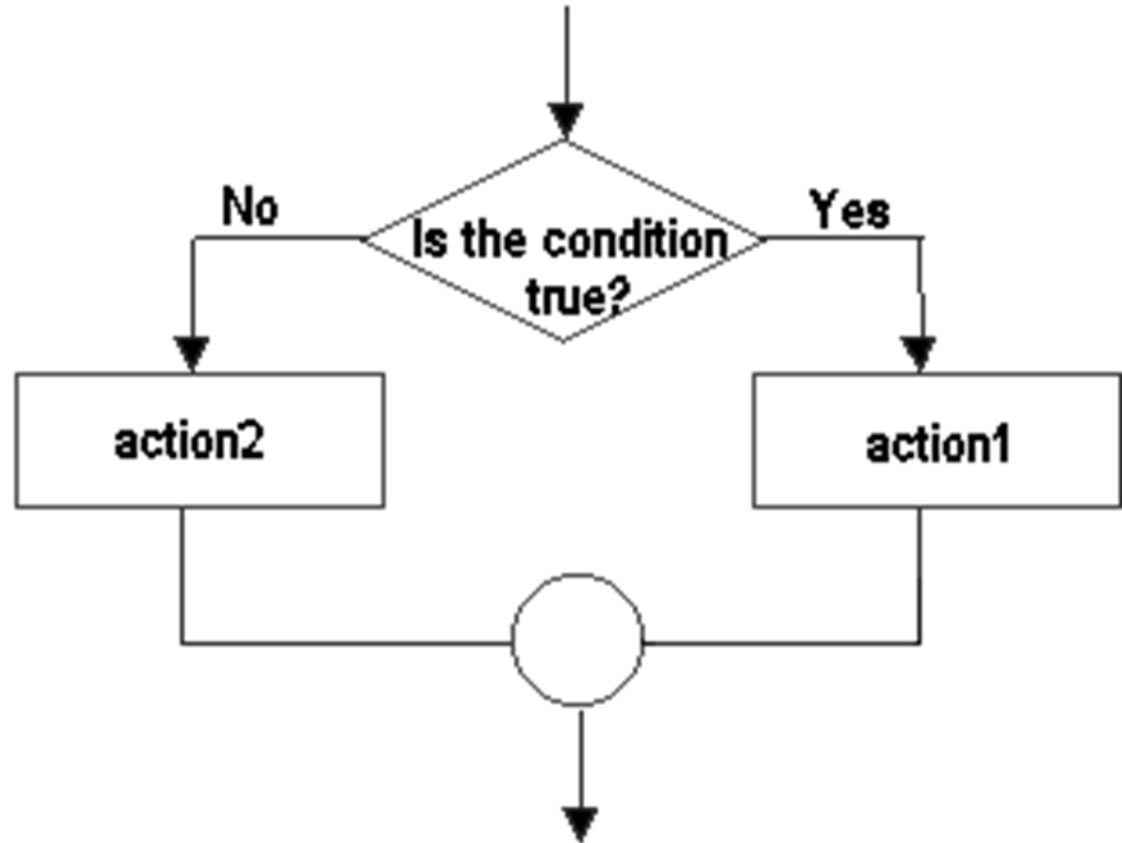| Mathematical Notation	VB Notation	Numeric Meaning	String Meaning
=	=	equal to	identical to
≠	<>	unequal to	different from
<	<	less than	precedes alphabetically
>	>	greater than	follows alphabetically
≤	<=	less than or equal to	precedes alphabetically or is identical to
≥	>=	greater than or equal to	follows alphabetically or is identical to

Logical Operators

- *cond1* And *cond2*
- *cond1* Or *cond2*
- Not *cond1*

Operator Precedence

- First, all *arithmetic operations* are carried out, and then all expressions involving *relational operators* are evaluated (to true or false). The *logical operators* are next applied, in the following order: Not, then And, then Or. Evaluation on the same precedence level proceeds left-to-right.

- The order of computation can be altered using parentheses.

If Block

If *condition* Then
    action1
 Else
    action2
End If

If Block: Example

```
If a<b Then       'This If block can be improved
   If c<5 Then    'using the And operator
      picBox.Print "hello"
   End If         'The Else clause is optional!
End If
```

ElseIf Clauses

If *condition1* Then
    action1
ElseIf *condition2* Then
    action2
ElseIf *condition3* Then
    action3
Else
    action4
End If

Constructs in which an If block is contained inside another If block are called **nested** If blocks.

Single-Line If Statement

If *condition* Then *action1* Else *action2*

- No End If is needed in this special case.