

Conditional statements

4.1. Syntax

then

if clause

```

<unconditional statement>:: = <unlabelled basic statement> |
    <compound statement> | <block>
<if clause>:: = if <general Boolean expression>
    <if statement>:: =
    <if clause> <unconditional statement> |
    <if clause> <label> : <unconditional statement>
    <conditional statement>:: = <if statement> |
    <conditional statement> else <statement>
    
```

4.2. Examples

```

if x = 0; n := n + 1
if v > u; V:q := n + m else if s > 0; go to R
if s < 0; AA:begin if q < v; a := v/s end;
    else if v > s; a := v - q else if v > s + 1; go to S
    
```

4.5.3. Semantics

statements

Conditional expressions cause certain statements to be executed or skipped depending on the running values of specified Boolean expressions.

4.5.3.1. If statement

of the if clause

The unconditional statement of an if statement will be executed if the Boolean expression following the delimiter if is true. Otherwise it will be skipped and the operation will be continued with the next statement.

4.5.3.2. Effect of else

immediately

In the general case the unconditional statement of the if statement is followed by the delimiter else. This defines the successor of the preceding unconditional statement to be the statement ~~the~~ following the statement following else. (It should be noted that this explanation makes essential use of the strict syntactic definition of statement. Thus in particular two statements ~~are~~ ~~not~~ ~~separated~~ by the delimiter else.)

4.4. Go to as unconditional

It follows from the above rule that if the unconditional statement preceding an else is a go to statement, else has no effect and may be omitted.

beginning immediately after an else may also be terminated by

statement

.../...

4. .5. Alternative description

statement

The effect of a conditional ~~expression~~, including several if clauses, may be described alternatively as follows :

Statement

The Boolean expressions will be evaluated one after the other in sequence from left to right, until one yielding the value true is found. Then, the unconditional ~~expression~~ following this Boolean is executed and the else acts as described above. If no Boolean having the value true is found, the statement following the last else in the complete conditional ~~expression~~ will be executed. Thus, unless there occurs a go to statement leading from one of the unconditional statements to a label within the conditional ~~expression~~ itself, only one of the unconditional expressions will be executed.

4. .6. Go to into a conditional

Th effect of go to statements leading into conditional ~~statements~~ follows directly from the above rules.

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