CONDITIONAL STATEMENTS

IF Statement

- **The logical IF:** `IF (logical-expression) one-statement`

Where: one-statement is a executable statement which is not another **IF.**

logical-expression is a logical expression, is evaluated, yielding a logical value

Example:

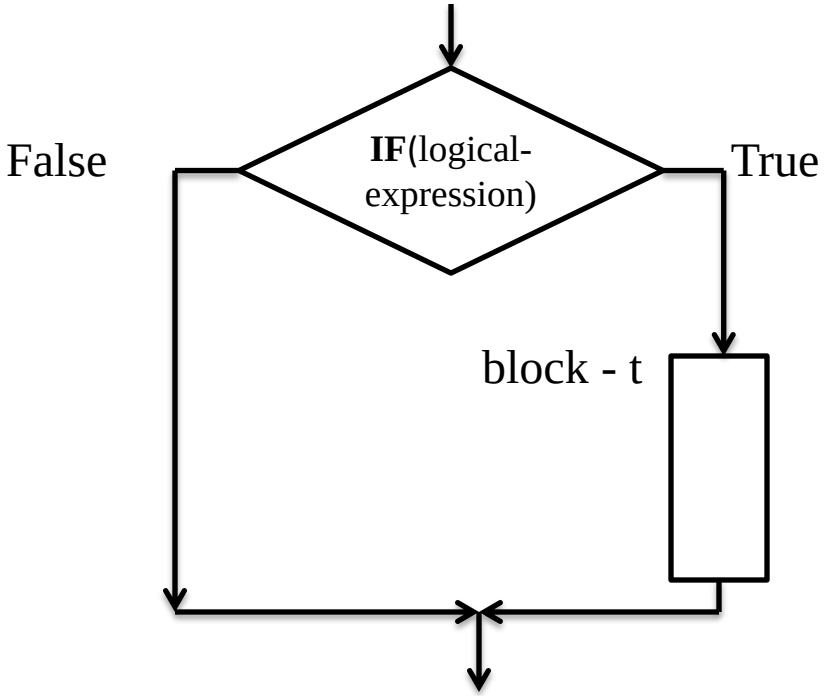
```
PROGRAM Smaller
INTEGER  :: a, b, Smaller
READ*,  a, b
Smaller = a
IF (a > b)  Smaller = b
print*, 'The smaller of ', a, ' and ', &
 b, ' is ', Smaller
END PROGRAM Smaller
```

- **IF-THEN-END IF** : is a simplification of the general **IF-THEN-ELSE-END IF** form with the ELSE part omitted:

IF (logical-expression) **THEN**

statements - t

END IF



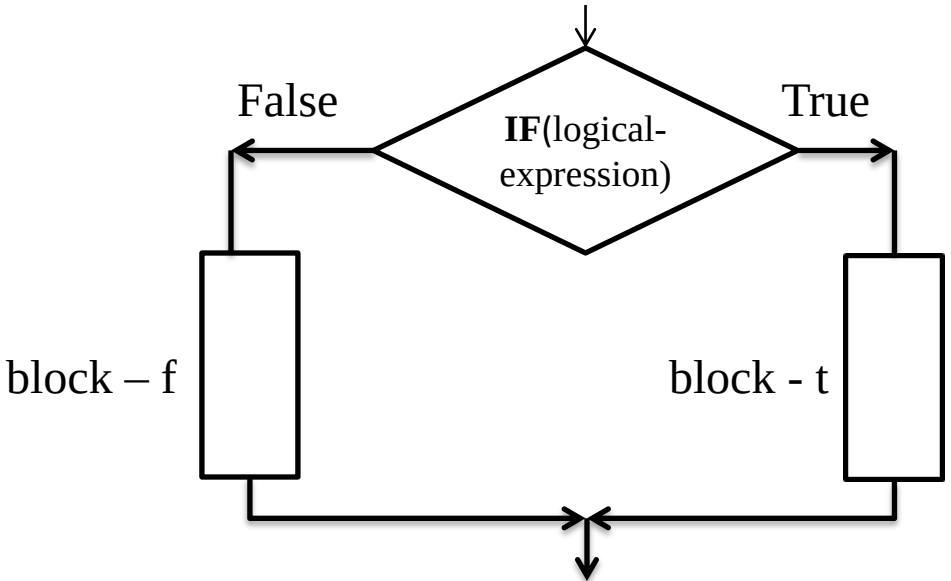
IF (logical-expression) **THEN**

statements-t

ELSE

statements-f

END IF



Example: find value of T from the following equations:

$$T = a^2 - 2b - 5 \qquad \text{if } a > b$$

$$T = a^3 - 3b + 10 \qquad \text{other wise}$$

- **IF-THEN-ELSE IF-END IF:** The Nested **IF-THEN-ELSE-END IF**

IF (logical-expression-1) **THEN**
  statements-1
ELSE IF (logical-expression-2) **THEN**
  statements-2
ELSE IF (logical-expression-3) **THEN**
  statement-3
ELSE IF (.....) **THEN**
  .....
ELSE
  statements-ELSE
END IF

Example: Consider the following code segment:

```
INTEGER              : x
CHARACTER(LEN=1)  : Grade
IF (x < 50) THEN
   Grade = 'F'
ELSE IF (x < 60) THEN
   Grade = 'D'
ELSE IF (x < 70) THEN
   Grade = 'C'
ELSE IF (x < 80) THEN
   Grade = 'B'
ELSE
   Grade = 'A'
END IF
```