

Boolean Data Types

True or False?

Two of the most important concepts in programming use conditional statements. All conditional statements must resolve to either true or false.

For example:

$(3 < 4)$ is true

$(3 > 4)$ is false

Data Type - Boolean

The concepts of true and false are so important in programming that many languages have a special data type for true/false values.

In Turing:

```
var finished : boolean
```

```
finished := (3 < 4)    % finished = true
```

```
finished := (3 > 4)    % finished = false
```

Using Boolean Variables

Remember that a condition resolves to either true or false. Thus a boolean variable can be used for the condition.

```
var done : boolean
% do something ...
loop
    % do something ...
    exit when (done)
end loop
```

Using Boolean Variables

A boolean variable can be used anywhere that you would use a conditional statement.

Ideal places are with “if-then-else” statements and with the exit conditions for loops.