

## The Structure of `if` Statements

The `if` construct allows the programmer to specify that a statement should be executed under some circumstances and not executed under others. It allows the program to make decisions: “If this condition is true, then do that.” The syntax is:

```
if (boolean condition)
{
    statement(s) to be executed if condition is true
}
else
{
    statement(s) to be executed if condition is false
}
```

Some remarks: the braces are optional if there is only a single statement, and the `else` clause is always optional. The condition must be some expression that evaluates to either a zero value (false) or a non-zero value (true). In C++, nearly every expression evaluates to some value—even assignments, which evaluate to the right-hand value of the statement. The condition must always be placed in parentheses.

## `if-else` Ladder

Sometimes there are multiple dependent conditions that must be evaluated to determine the action to be executed. The syntax is:

```
if (boolean condition1)
{
    statement(s) to be executed if condition1 is true
}
else if (boolean condition2)
{
    statement(s) to be executed if condition2
    is true (and condition1 is false)
}
else if (boolean condition3)
{
    statement(s) to be executed    if condition3
    is true (and condition1 and condition2 are false)
}
```