



# C If ... Else

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## Conditions and If Statements

You learned from the [operators comparison chapter](#), that C supports the usual logical conditions from mathematics:

- Less than: `a < b`
- Less than or equal to: `a <= b`
- Greater than: `a > b`
- Greater than or equal to: `a >= b`
- Equal to: `a == b`
- Not Equal to: `a != b`

You can use these conditions to perform different actions for different decisions.

C has the following conditional statements:

- Use `if` to specify a block of code to be executed, if a specified condition is true
- Use `else` to specify a block of code to be executed, if the same condition is false
- Use `else if` to specify a new condition to test, if the first condition is false
- Use `switch` to specify many alternative blocks of code to be executed

## The if Statement

Use the **if** statement to specify a block of C code to be executed if a condition is **true**.

## Syntax

```
if (condition) {  
    // block of code to be executed if the condition is true  
}
```

Note that **if** is in lowercase letters. Uppercase letters (If or IF) will generate an error.

In the example below, we test two values to find out if 20 is greater than 18. If the condition is **true**, print some text:

## Example

```
if (20 > 18) {  
    printf("20 is greater than 18");  
}
```

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We can also test variables:

## Example

```
int x = 20;  
int y = 18;  
if (x > y) {  
    printf("x is greater than y");  
}
```

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## Example explained

In the example above we use two variables, **x** and **y**, to test whether x is greater than y (using the **>** operator). As x is 20, and y is 18, and we know that 20 is greater than 18, we print to the screen that "x is greater than y".

# The else Statement

Use the **else** statement to specify a block of code to be executed if the condition is **false**.

## Syntax

```
if (condition) {  
    // block of code to be executed if the condition is true  
} else {  
    // block of code to be executed if the condition is false  
}
```

## Example

```
int time = 20;  
if (time < 18) {  
    printf("Good day.");  
} else {  
    printf("Good evening.");  
}  
// Outputs "Good evening."
```

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## Example explained

In the example above, time (20) is greater than 18, so the condition is `false`. Because of this, we move on to the `else` condition and print to the screen "Good evening". If the time was less than 18, the program would print "Good day".

## The else if Statement

Use the `else if` statement to specify a new condition if the first condition is `false`.

### Syntax

```
if (condition1) {  
    // block of code to be executed if condition1 is true  
} else if (condition2) {  
    // block of code to be executed if the condition1 is false and condition2 is true  
} else {  
    // block of code to be executed if the condition1 is false and condition2 is false  
}
```

### Example

```
int time = 22;  
if (time < 10) {  
    printf("Good morning.");  
} else if (time < 20) {  
    printf("Good day.");  
} else {  
    printf("Good evening.");  
}  
// Outputs "Good evening."
```

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## Example explained

In the example above, time (22) is greater than 10, so the **first condition** is **false**. The next condition, in the **else if** statement, is also **false**, so we move on to the **else** condition since **condition1** and **condition2** is both **false** - and print to the screen "Good evening".

However, if the time was 14, our program would print "Good day."

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## Another Example

This example shows how you can use **if..else** to find out if a number is positive or negative:

### Example

```
int myNum = 10; // Is this a positive or negative number?

if (myNum > 0)
    printf("The value is a positive number.");
else if (myNum < 0)
    printf("The value is a negative number.");
else
    printf("The value is 0.");
```

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## C Exercises

### Test Yourself With Exercises

# Exercise:

Print "Hello World" if **x** is **greater than** **y** .

```
int x = 50;
int y = 10;
    (x    y) {
    printf("Hello World");
}
```

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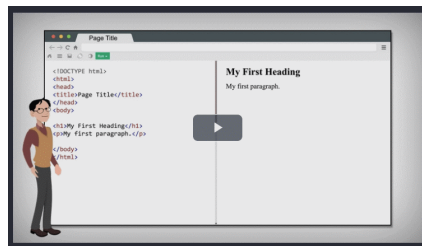
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