

Control Flow & Logical Operators

Our Goals

- Be able to talk about the execution of a program
- Be able to structure a program using control flow statements
- Identify and use both comparison and logical operators effectively

Execution of a program

Conditionals

- Conditional statements execute or skip parts of a program based on the value of an expression
- These are the decision points of your code, or the "branches"
- They rely quite heavily on boolean(ish) values

The If Statement

- This is the fundamental control statement that allows Javascript to make decisions
- This is roughly how it works

```
if ( expression ) {  
    // statement(s)  
}  
  
if ( true ) {  
    console.log( "This will run" );  
}  
  
if ( false ) {  
    console.log( "This won't" );  
}
```

The If Statement

```
if ( expression ) {  
    // statement(s)  
} else {  
    // statement(s)  
}  
  
if ( true ) {  
    console.log( "This will run" );  
} else {  
    console.log( "This won't" );  
}  
  
if ( !false ) {  
    console.log( "The opposite is true" );  
}
```

Comparison Operators

Operator	Meaning	Examples
<code>==</code>	Equality	<code>4 == "4";</code>
<code>===</code>	Strict Equality	<code>42 === 42;</code>
<code>!=</code>	Inequality	<code>1 != "5";</code>
<code>!==</code>	Strict Inequality	<code>8 !== 2;</code>
<code>></code>	Greater than	<code>6 > 4;</code>
<code>>=</code>	Greater than or equal to	<code>84 >= 84;</code>
<code><</code>	Less than	<code>1 < 9;</code>
<code><=</code>	Less than or equal to	<code>11 <= 12;</code>

Equality vs. Strict Equality

That is, a comparison between `==` and `===`.

Always use threequals!

Remember that one equals sign is assignment

Logical Operators

Operator	Meaning	Examples
&&	AND	1 === 1 && 2 === 2
 	OR	true false
!	NOT	!false

The If Statement

```
if ( 5 > 4 ) {  
    console.log( "Yes, it is!" );  
}  
  
var myNumber = 42;  
if ( myNumber === 42 ) {  
    console.log( "Equal" );  
}  
  
if ( 3 >= 2 && 7 === 7 ) {  
    console.log( "Yep" );  
}  
  
if ( false || true ) {  
    console.log( "Yep" );  
}
```

The If Statement

```
var age = 42;  
  
if ( age >= 18 ) {  
    console.log( "You can vote" );  
} else {  
    console.log( "You can't" );  
}
```

More complex If statements

```
if ( someCondition ) {  
  
} else if ( someOtherCondition ) {  
  
} else {  
  
}  
  
if ( 4 === 3 ) {  
    console.log( "First statement" );  
} else if ( 42 !== 42 ) {  
    console.log( "Second statement" );  
} else {  
    console.log( "Third statement" );  
}
```

More complex If statements

```
var age = 42;

if (age >= 35) {
    console.log('You can vote AND hold any place in government!');
} else if (age >= 25) {
    console.log('You can vote AND run for the Senate!');
} else if (age >= 18) {
    console.log('You can vote!');
} else {
    console.log('You have no voice in government!');
}
```

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Have a crack at **these**
exercises

This is **your** homework