

Week 2: Conditions & Loops

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Agenda

- Questions?
- Booleans & Conditionals
- Loops
- User Input
- Shortcuts
- Next Week: Arrays & Functions

What questions do you have?

Booleans & Conditionals

How might we use them?

To cut off a length if it's too long:

```
let length = 23;  
if(length > 15) {  
    length = 15;  
}
```

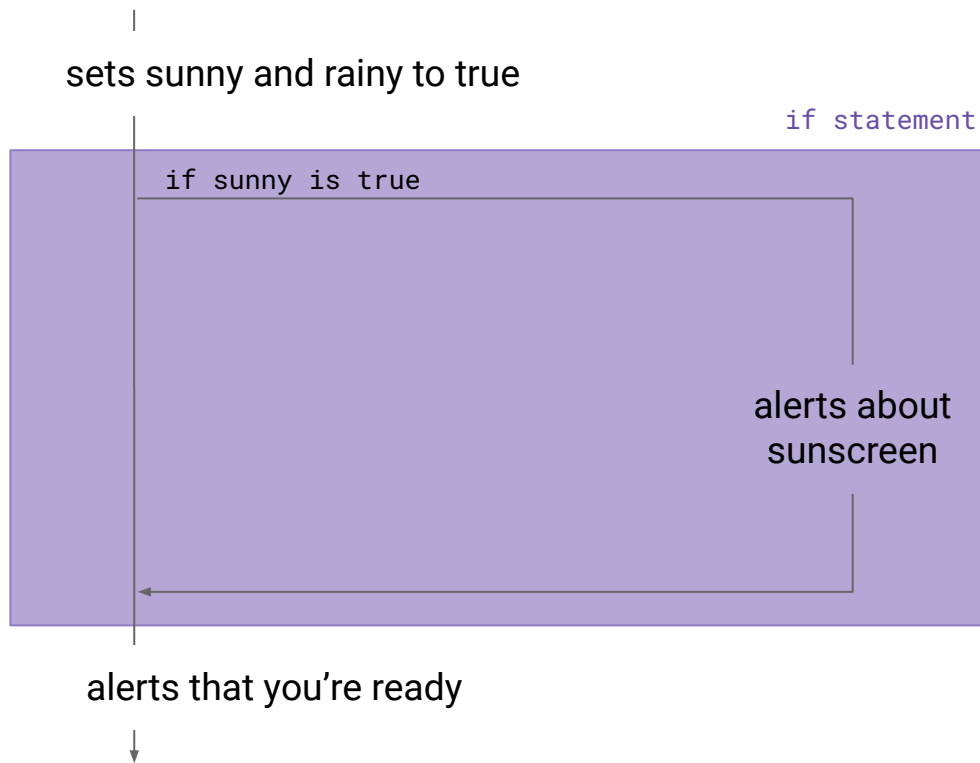
To warn to wear a hat if it's sunny or rainy:

```
let sunny = false;  
let rainy = true;  
if(sunny && rainy) {  
    alert("You should wear a hat!");  
}
```

Boolean Operators	
Equals	===
Not equals	!==
Greater than	>
Less than	<
Greater than or equals	>=
Less than or equals	<=
And	&&
Or	
Not	!

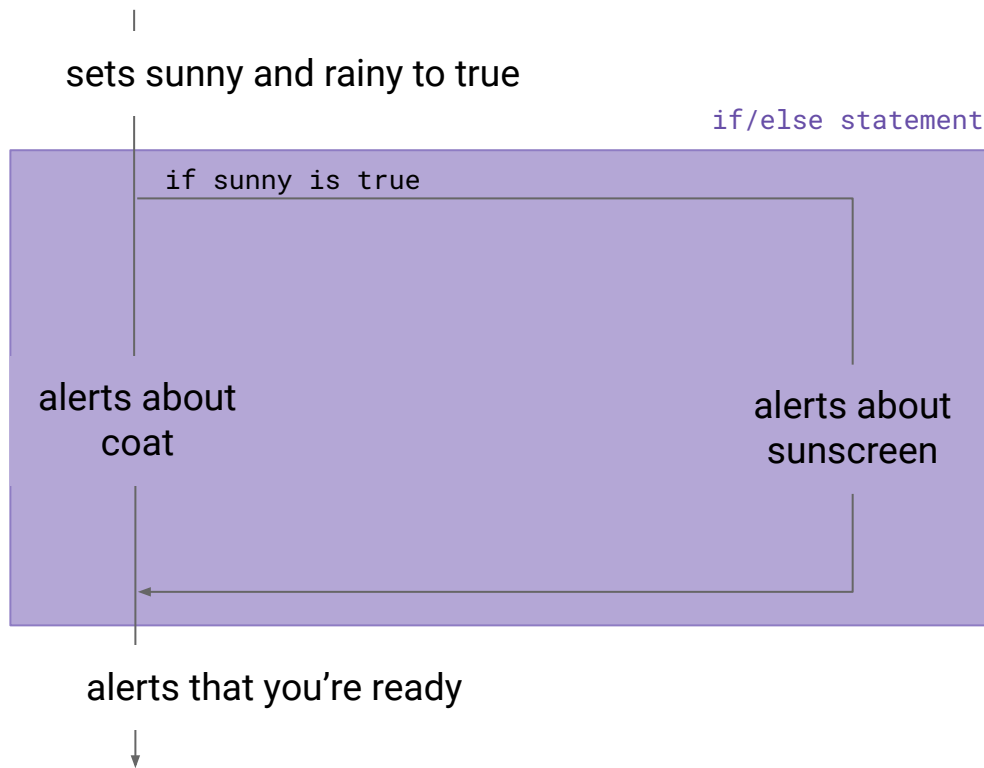
If

```
let sunny = true;  
let rainy = true;  
if(sunny) {  
  alert("Wear sunscreen!");  
}  
alert("You're ready!");
```



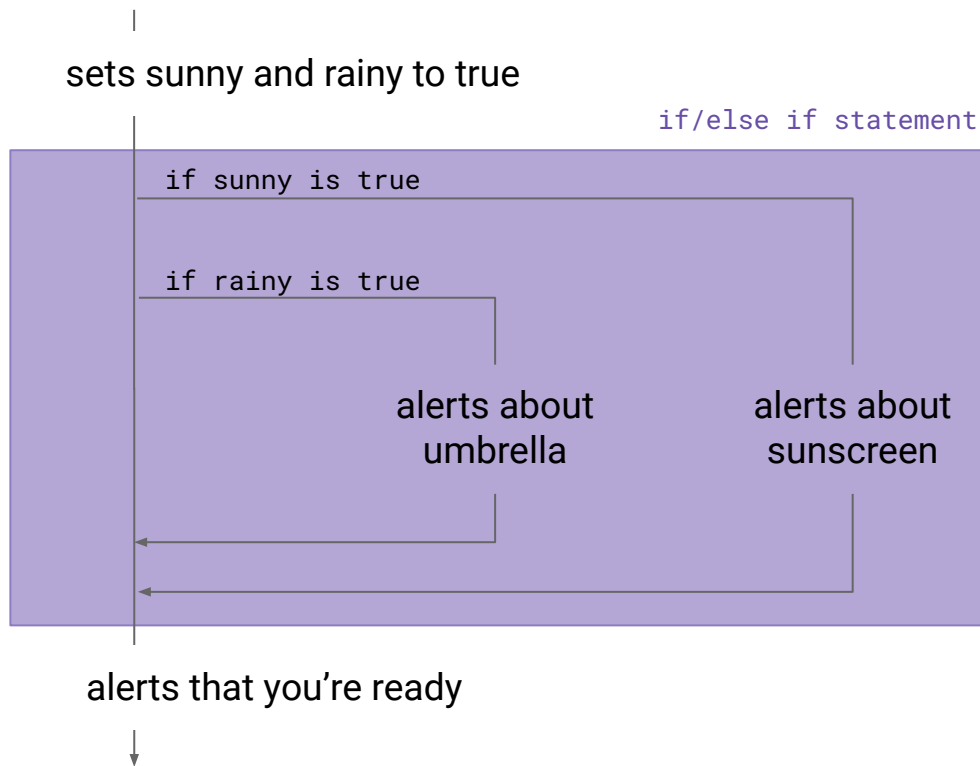
If/Else

```
let sunny = true;
let rainy = true;
if(sunny) {
  alert("Wear sunscreen!");
}
else {
  alert("Wear a coat!");
}
alert("You're ready!");
```



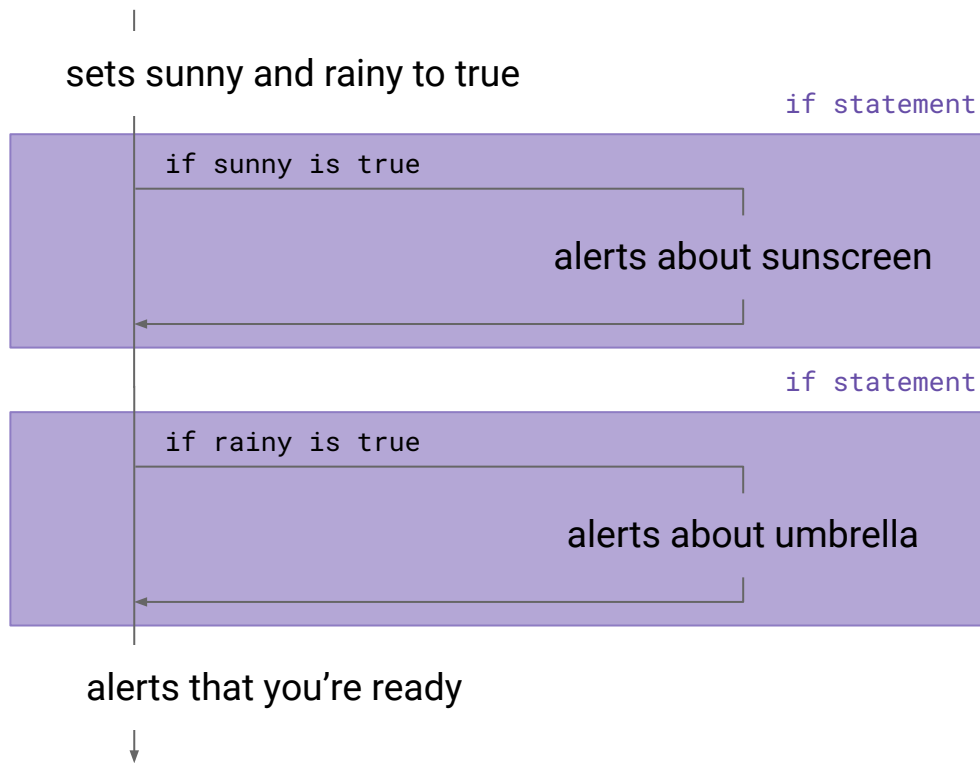
If/Else If

```
let sunny = true;
let rainy = true;
if(sunny) {
  alert("Wear sunscreen!");
}
else if(rainy) {
  alert("Bring an umbrella!");
}
alert("You're ready!");
```



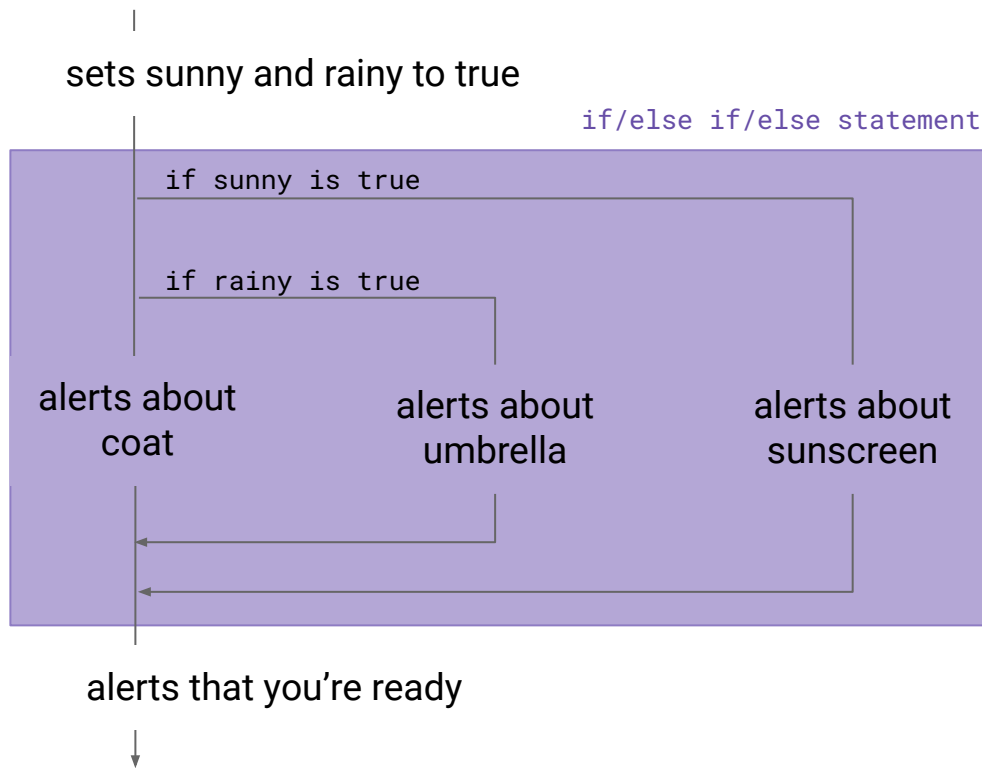
Two Ifs

```
let sunny = true;
let rainy = true;
if(sunny) {
  alert("Wear sunscreen!");
}
if(rainy) {
  alert("Bring an umbrella!");
}
alert("You're ready!");
```



If/Else If/Else

```
let sunny = true;
let rainy = true;
if(sunny) {
  alert("Wear sunscreen!");
}
else if(rainy) {
  alert("Bring an umbrella!");
}
else {
  alert("Wear a coat!");
}
alert("You're ready!");
```



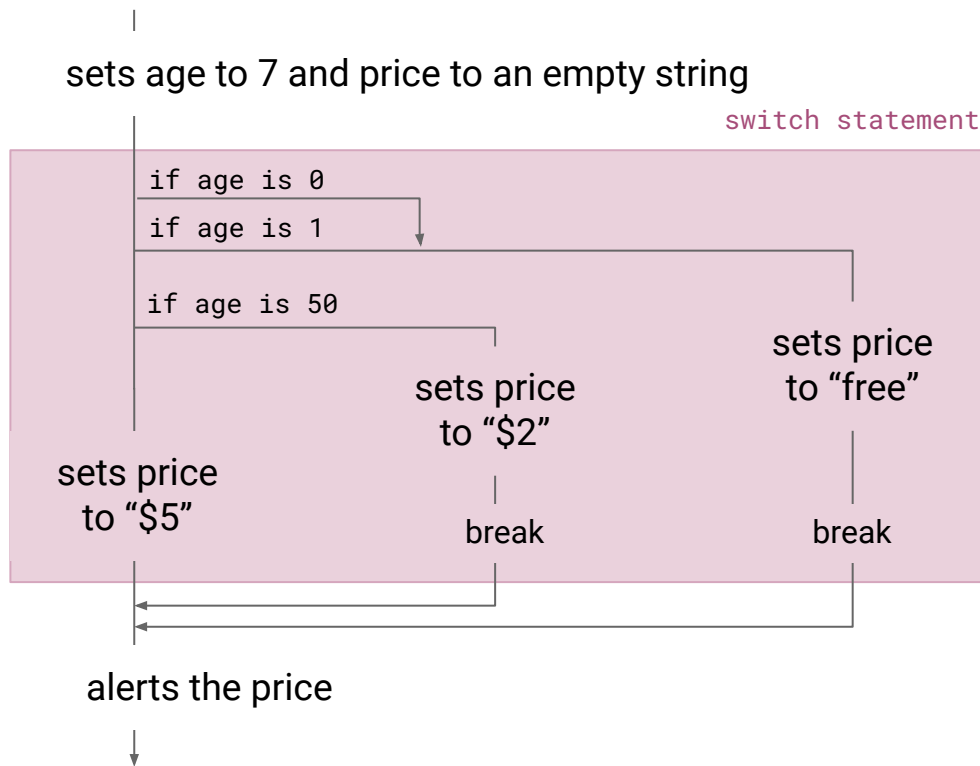
Switch

Switch is used when we want to do something different based on what **one variable** equals

If...Else If...Else	Switch
<pre>const age = prompt("What's your age?"); let grade = 0; if(age === 6) { grade = 1; } else if(age === 7) { grade = 2; } else { grade = 12; }</pre>	<pre>const age = prompt("What's your age?"); let grade = 0; switch(age) { case 6: grade = 1; break; case 7: grade = 2; break; default: grade = 12; }</pre>

Switch

```
let age = 7;  
let price = "";  
switch(age) {  
  case 0:  
  case 1:  
    price = "free";  
    break;  
  case 50:  
    price = "$2";  
    break;  
  default:  
    price = "$5";  
}  
alert("Price: " + price)
```



User Input

The functions `alert()` and `prompt()` allow us to easily show information to and get information from the user.

They are NOT typically used in real websites. But they're great while you're learning!

Alert

`alert()` allows us to show something TO the user.

```
alert("Hello there, user!");
```

Prompt

`prompt()` allows us to get input FROM the user

```
let name = prompt("What is your name?");
```

Loops

For Loops

When you know **how many times** you want to loop

For Loop:

```
for(let i = 0; i < HOW_MANY_TIMES; i++) {  
    // The code to run multiple times  
}
```

For-Of Loop:

```
let students = ["Mae", "Jose", "Simone"]  
for(const student of students) {  
    alert("Hello " + student);  
}
```

While Loops

When you know **when you want to stop** looping

While Loop:

```
let shouldKeepGoing = false;  
while(shouldKeepGoing) {  
    // The code to run multiple times  
}
```

Do-While Loop:

```
let shouldDoItAgain = false;  
do {  
    // The code to run multiple times  
} while(shouldDoItAgain)
```

While Loop

```
let guess = "";  
while(guess !== "pineapple") {  
    guess = prompt("Guess!");  
}  
alert("You guessed right!");
```

sets guess to an empty string

while loop

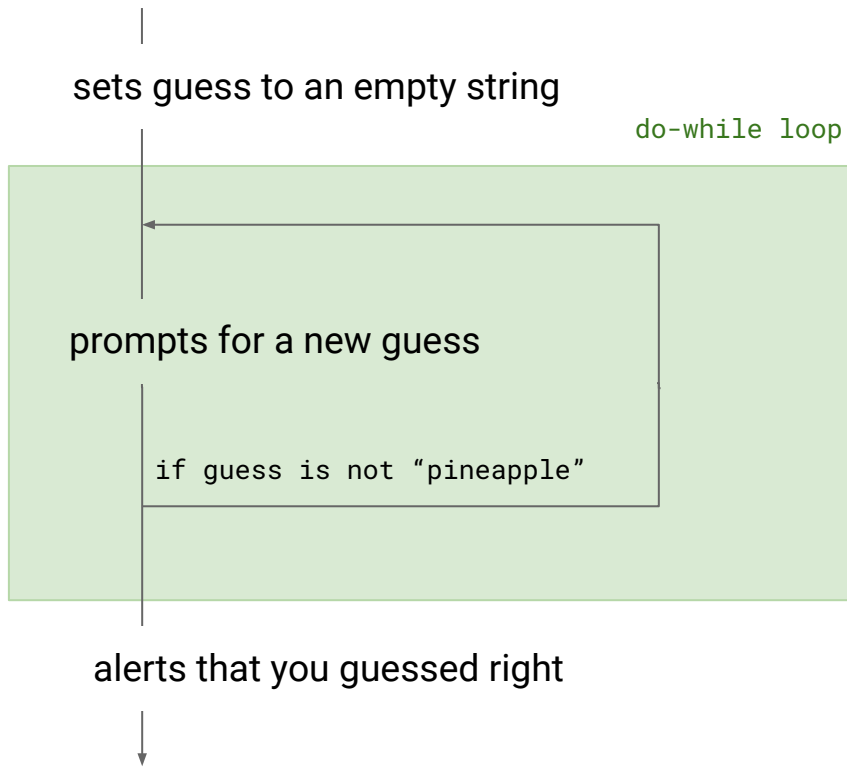
prompts for a new guess

if guess is not "pineapple"

alerts that you guessed right

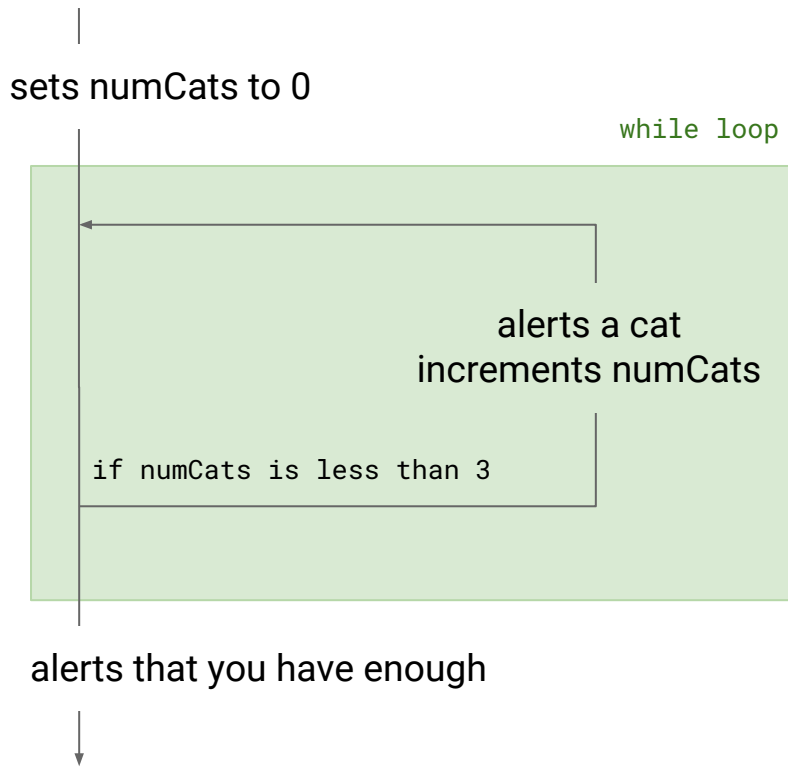
Do-While Loop

```
let guess = "";  
do {  
    guess = prompt("Guess!");  
} while(guess !== "pineapple")  
alert("You guessed right!");
```



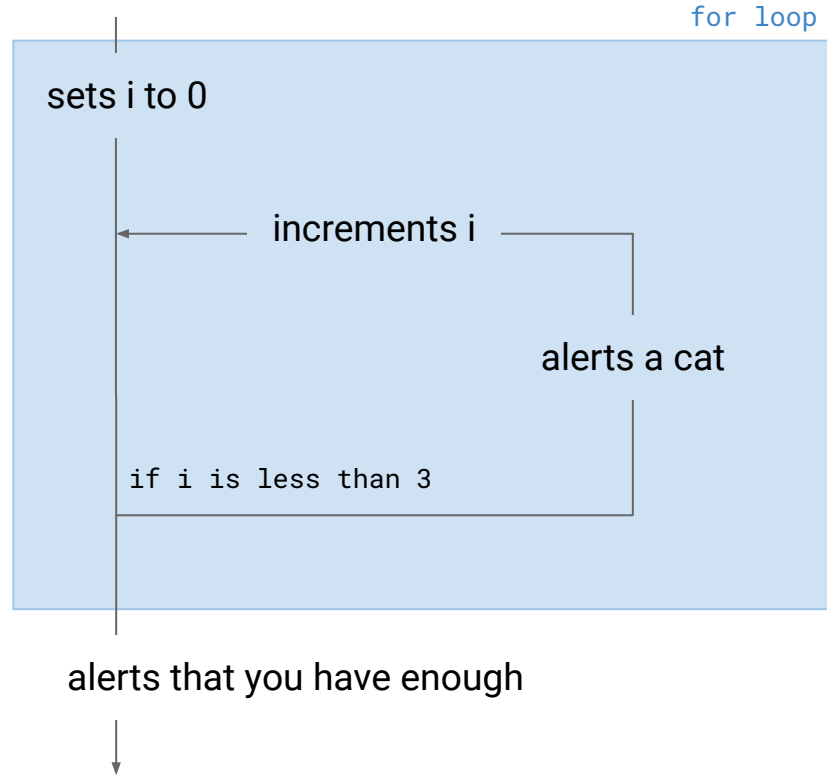
While Loop

```
let numCats = 0;  
while(numCats < 3) {  
    alert("Here's a cat!");  
    numCats++;  
}  
alert("You have enough!");
```



For Loop

```
for(let i = 0; i < 3; i++) {  
    alert("Here's a cat!");  
}  
alert("You have enough!");
```



While Loop → For Loop

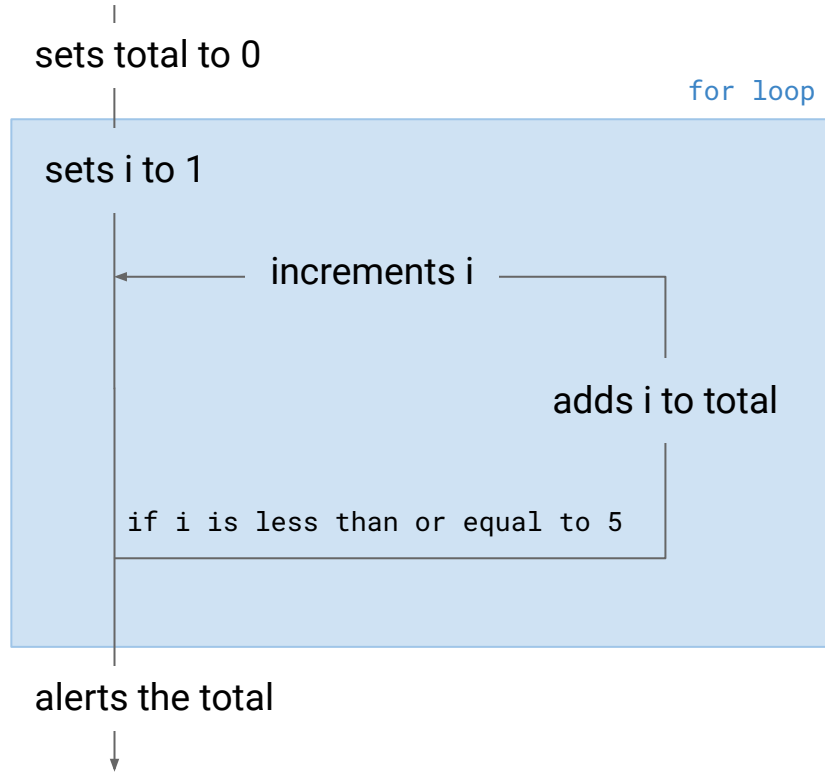
```
let numCats = 0;  
while(numCats < 3) {  
    alert("Here's a cat!");  
    numCats++;  
}  
alert("You have enough!");
```

=

```
for(let i = 0; i < 3; i++) {  
    alert("Here's a cat!");  
}  
alert("You have enough!");
```

For Loop

```
let total = 0
for(let i = 1; i <= 5; i++) {
  total += i;
}
alert("The total is " + total)
```



VS Code Shortcuts

A few of my favorite shortcuts...

Select some lines and hit:

Shortcut	What It Does
Ctrl + / or Command + /	Comment or uncomment the selected lines
Tab	Indent the selected lines
Shift + Tab	Unindent the selected lines

Practice Problems: Counting

Counting

- Ask the user for a number to count to
- Count up to that number, starting at 1, logging each number you count to the console (or alerting it)
- **Bonus Challenge:** Only log to the console one time with all the numbers you counted, maybe something like this:
"1 2 3 4 5 6 7 8 "
- **Stretch Bonus Challenge:** Also include whether each number is even or odd

You may want to use: `parseInt()`

https://www.w3schools.com/jsref/jsref_parseint.asp

Counting: HINTS

- Ask the user for a number to count to
 - We should
 - You could
- Count up to that number, starting at 1, logging each number you count to the console
 - They type of loop
 - You could
 - The condition
 - Inside the loop
- **Bonus:** Only log to the console one time with all the numbers you counted, maybe like this: "1 2 3 4 5 6 7 8"
 - We'll want to
 - We'll want to
- **Stretch Bonus Challenge:** Also include whether each number is even or odd
 - You could
 - Or you could

Practice Problems: Number Guessing

Number Guessing

- Pick some number
- Write a loop that asks the user to guess what number you are thinking of and keeps asking them until they get the answer correct
- Tell them that they got the answer correct
- **Bonus Challenge:** Allow them to exit the game without guessing correctly by clicking the Cancel button
- **Stretch Bonus Challenge:** Generate the number they need to guess randomly

You may want to use: `parseInt()`

https://www.w3schools.com/jsref/jsref_parseint.asp

Number Guessing: HINTS

- Pick some number
 - We should use
- Write a loop that asks the user to guess what number you are thinking of and keeps asking them until they get the answer correct
 - The type of loop
 - The condition
 - Inside the loop
- Tell them that they got the answer correct
 - We should
- **Bonus:** Allow them to exit the game without guessing correctly by clicking the Cancel button
 - Google
 - Google
- **Bonus:** Generate the number they need to guess randomly
 - This link might help:

Additional Resources

Rules of Boolean Logic

<https://www.codingmadeclear.com/rules-of-boolean-logic/>

Javascript includes()

https://www.w3schools.com/jsref/jsref_includes.asp

Javascript startsWith()

https://w3schools.com/jsref/jsref_startswith.asp

Javascript parseInt()

https://www.w3schools.com/jsref/jsref_parseint.asp

Javascript Operators

https://www.w3schools.com/js/js_operators.asp