

The background of the slide is a solid light purple color, decorated with various stylized tropical leaves. These leaves are drawn with black outlines and some are filled with colors like pink, blue, red, and dark blue. The leaves are scattered around the edges of the slide, creating a decorative border.

JavaScript

Intro to JavaScript Data Types & Joan
Clarke



01

COHORT 1

GROUND RULES



Cohort 1 Ground Rules

Listen to the Coach

Keep Noise Levels Down
(always raise your hand to ask a
question, and wait to talk to friends
until we're coding)

Being Able to Create
(or be Creative)

Songs Every Day

**Being Kind to
Others**

**No
Gossiping/Rumors/Bullying**

No Judgment

No Assigned Seats

Pair Programming
(working with a partner)

Dogs & Plants

Help Your Neighbor

Remember:
We're All Learning

Help Me Help You



01

COHORT 4

GROUND RULES



Cohort 4 Ground Rules

Don't Make Fun of Others, No
Name Calling

No Assigned Seats

**Being Kind to
Others**

Be Respectful of Differences

Pair Programming
(working with a partner)

Raise the Duck!
(to ask questions)

**No
Gossiping/Rumors/Bullying**

No Judgment

Practice Patience

Be Quiet Unless...

Help Your Neighbor

Remember:
We're All Learning

Help Me Help You





02

DEBUGGING



DEBUGGING – What does it mean?

“DE”

- A prefix
- Means to **undo something**.

DEBUGGING – What does it mean?

“ING”

- A suffix (end of the word)
- Shows an **action currently in progress.**

DEBUGGING – What does it mean?

DE-**"BUGG"**-ING

- It really does stand for...



The first computers...



Rubber Duck Method (yes, it's real)

- Talk out your coding problem with your rubber duck buddy.
- This helps your brain to process the problem differently.
- **Follow these steps:**
 - Talk about what the code is doing (line by line)
 - Talk about what it *should be doing*.





03

DEBUGGING: UNPLUGGED



USE YOUR DUCK



- Use your duck to step through the suggested path to the pond.
- Which step is wrong? Correct it!
- **There will only be 1 wrong step.** There are a million ways to get your duck to water, so be creative with the **steps provided.**



04

SHERO



SHero - Joan Clarke



- Went to school in London, England but wasn't allowed to actually earn her degree.
- Recruited to the **Government Code and Cypher School** where she became a **code breaker** during the war.
- She played a huge role in breaking "The Enigma", saving 220,000 tons of shipping per month.



05

INTRO TO JAVASCRIPT



JavaScript

JavaScript is a programming language!

Fun Fact: JavaScript is the most-used programming language in the world (according to Google). It's *that* popular.

- Used for creating **dynamic** websites, and sometimes phone apps.

dy-nam-ic

adjective

1. (of a process or system) characterized by constant change, activity, or progress.
2. (of a person) positive in attitude and full of energy or new ideas.

Dynamic JavaScript

- Click a button to submit a form
- Check that what the user typed into the form is correct
- Flip through pictures, so that a new one shows every couple of seconds
- Show data
 - Example: Amazon - you're shopping for a new cat bowtie. Amazon is able to dynamically show you:
 - What colors the store has available
 - How many bow ties they still have
 - Whether or not a bow tie is sold out

i Last purchased Oct 15, 2022
Size: 7-11" (pack of 1) | Color: Teal | [View order](#)



Roll over image to zoom in



[Set reminder](#)

ow Tie
ty

\$6⁹⁹

✓prime
FREE Returns ▾

FREE delivery **Thursday,**
October 20. Order within **3 hrs**
58 mins

📍 Deliver to Emma - Mountville
17554

In Stock.

Qty: 1 ▾

Add to Cart

Buy Now

🔒 Secure transaction

Ships from Amazon
Sold by Joytale

Return policy: [Returnable until Jan 31, 2023](#) ▾

☐ Add a gift receipt for easy returns





06

TYPES OF VARIABLES



Data Types

Represent different types of data - strings, numbers, boolean, etc. A string is wrapped in quote marks (example: "green eggs and ham"). Numbers look like numbers, and booleans are true/false, YES or NO.

Guess the Data Type:

- "coders"	STRING
- 101	NUMBER
- "true"	STRING
- false	BOOLEAN
- "208"	STRING

Data Types

Variables always have a data type.

Once a variable is given a data type, **it cannot be changed**.

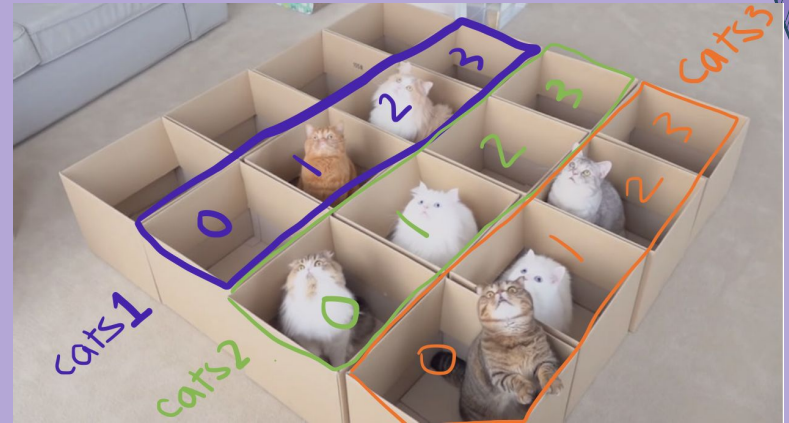
Example: **var cats = 3**

But what if we wanted to represent a row of boxes, that are also full of cats?
We would use what is called an **array**!

Data Types - Array

Array. A single variable that stores a series of elements. Each element in your array has to be the same data type (all numbers or all strings).

To access things in an array, you use an **index**. The index is an item's order or position in the array, and it will always start at 0 (instead of 1).



Array Example: Grocery List

My grocery list:

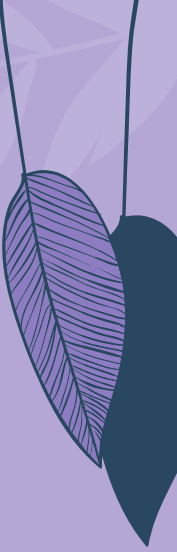
- Apple
- Mango
- Banana
- Grape
- Blueberry
- Kiwi
- Papaya

Because “apple” is first on my grocery list, its position will be **0**.

Array Example: Grocery List

Accessing an item at an array's index looks a lot like this: **fruits[2]**.

fruits[2] - the word “fruits” is the name of our array variable



Array Example: Grocery List

Accessing an item at an array's index looks a lot like this: **fruits[2]**.

fruits[2] - the opening and closing brackets tell our code that we want the index (number inside)


Array Example: Grocery List

Accessing an item at an array's index looks a lot like this: **fruits[2]**.

fruits[2] - 2 is the actual index



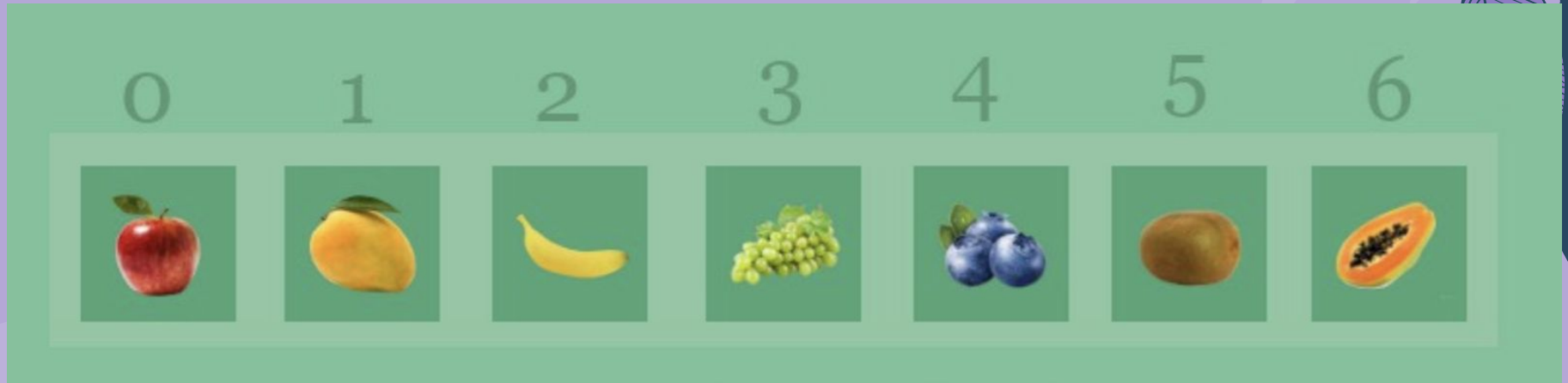
Array Example: Grocery List

0	1	2	3	4	5	6
						

Given the example, what is **fruits[2]**?

What index holds the **blueberries**?

Exercise: Grocery List (THREE VOLUNTEERS)



How would I get the **apple**?

The array is called **fruits**

Exercise: Colors (THREE VOLUNTEERS)



The array is called **colors**

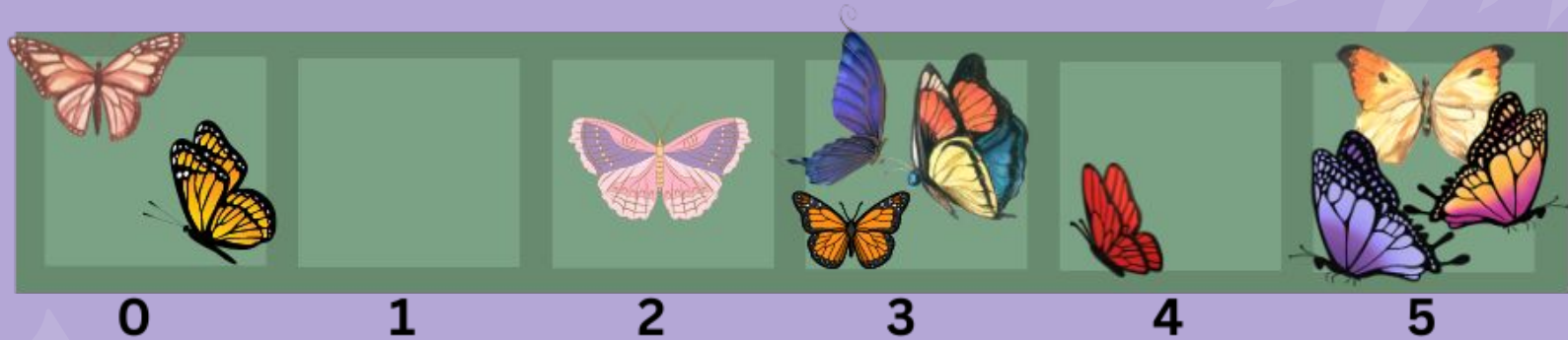
```
red = colors[0]
```

```
orange = colors[1]
```

Group #1: How would I get the **yellow**?

Group #2: How would I get the **purple**?

Exercise: Colors (THREE VOLUNTEERS)



The array is called **butterflies**

```
butterflies[0] = 2
```

Group #1: What is **butterflies**[1]?

Group #2: How do I get 3 butterflies?

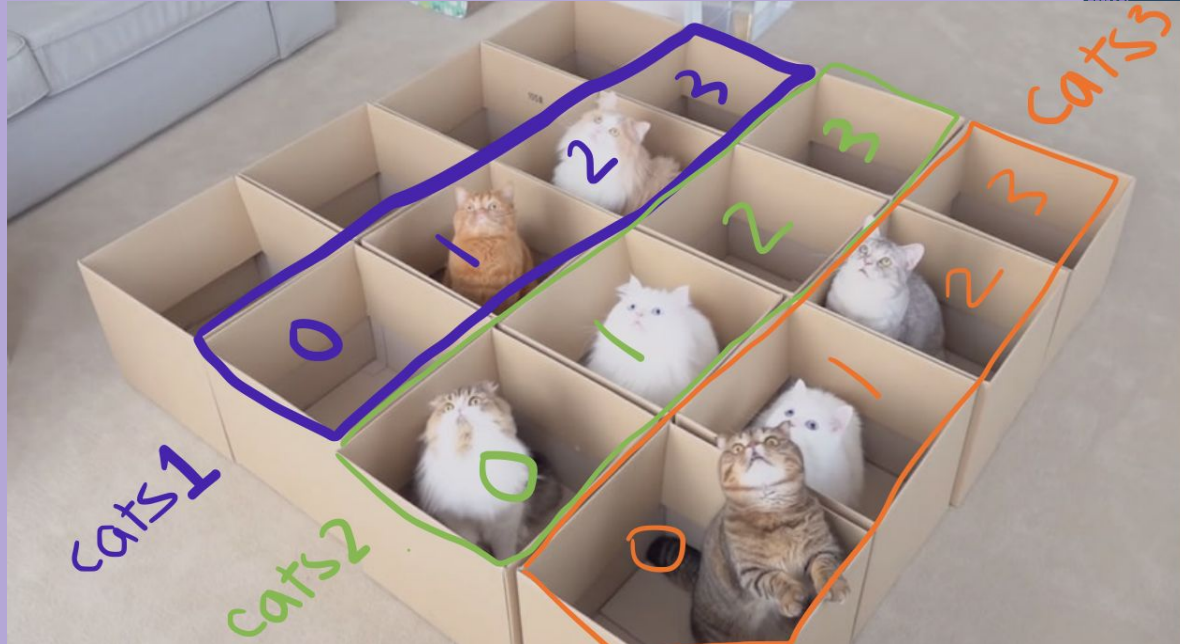
Data Types - Array

cats1 = the purple array

cats2 = the green array

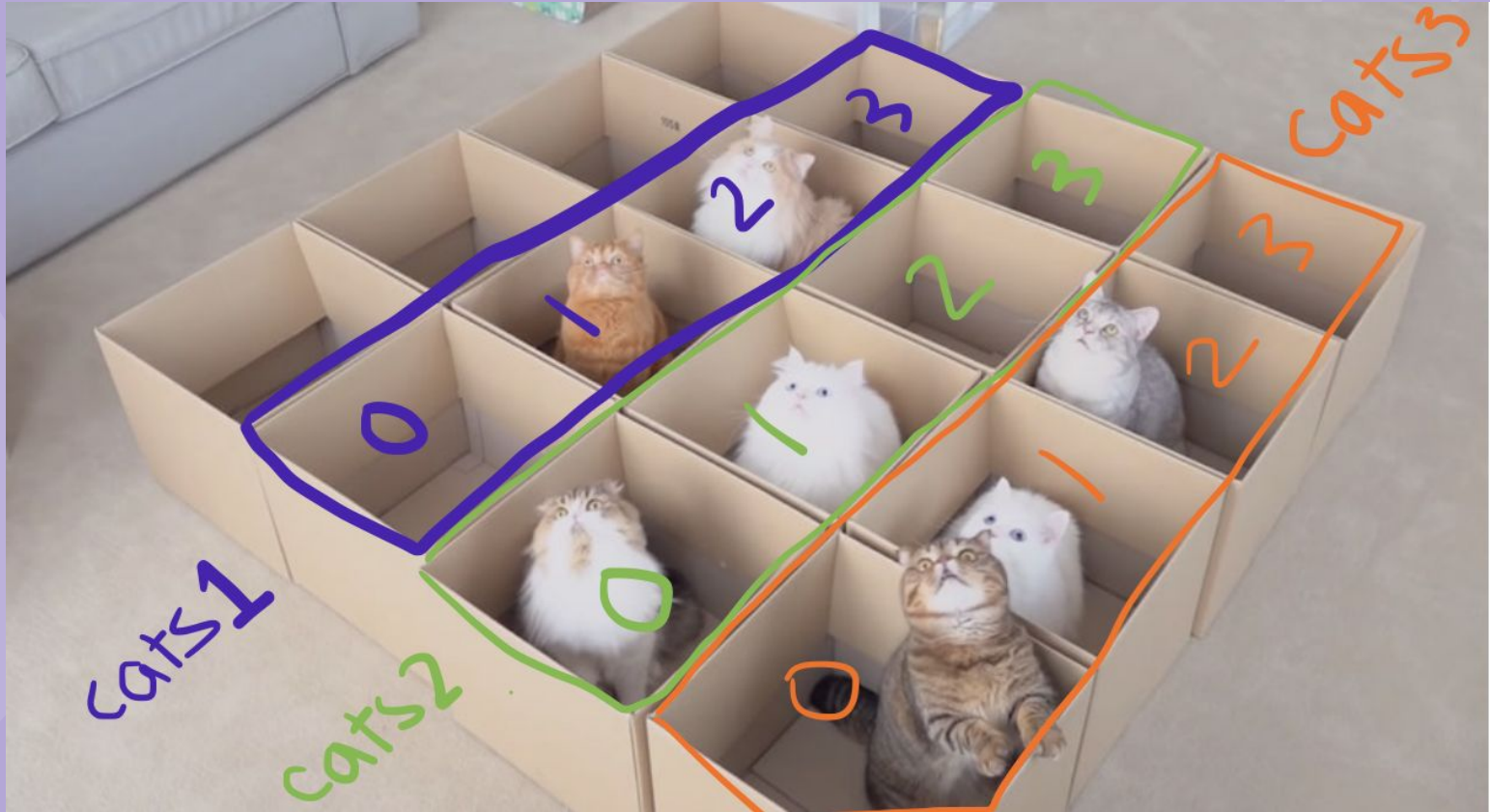
cats3 = the orange array

In order to pick up a cat and snuggle it, I have to select the correct array and index.



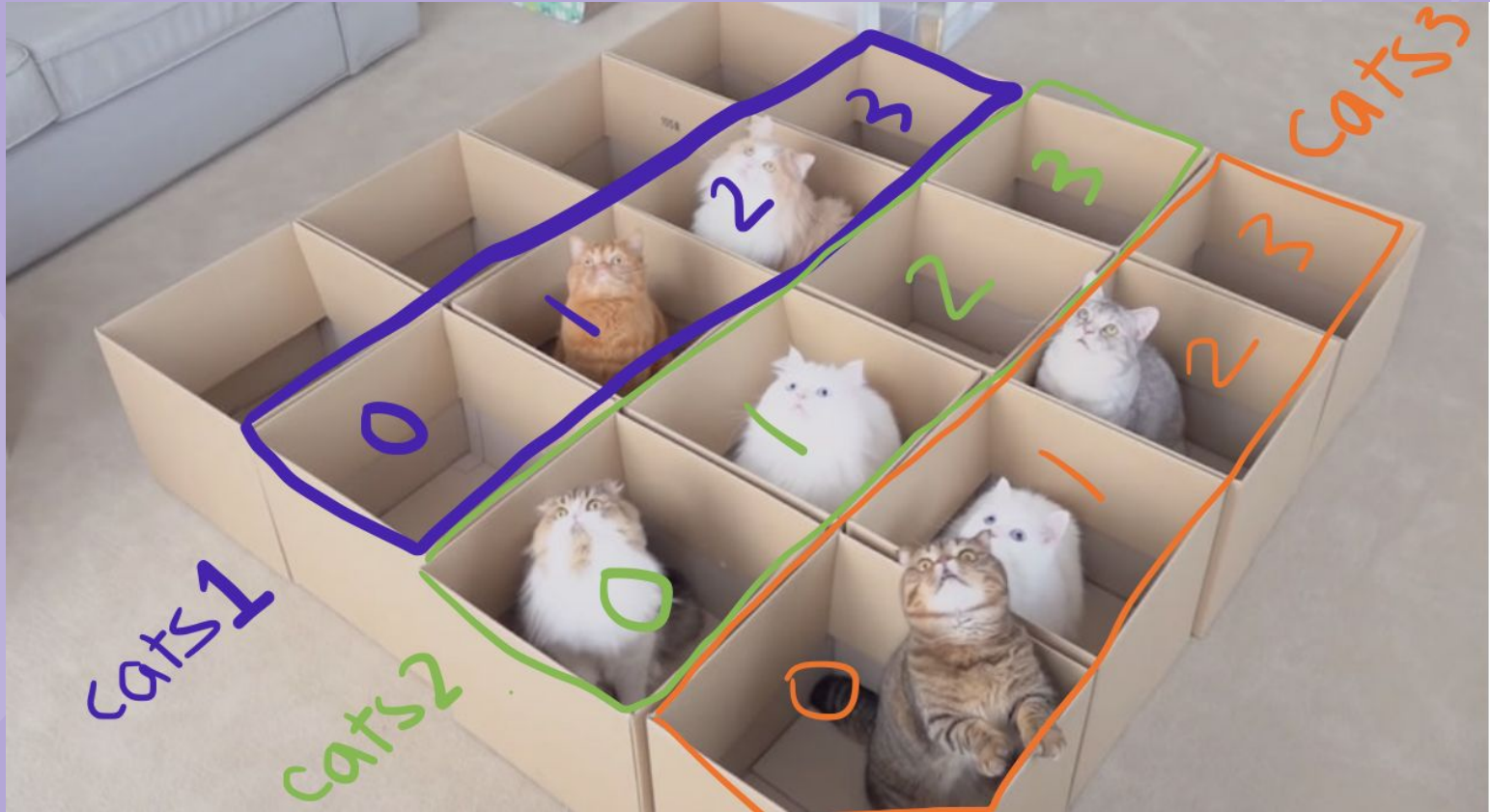
Data Types - Array

`cats2[2]`



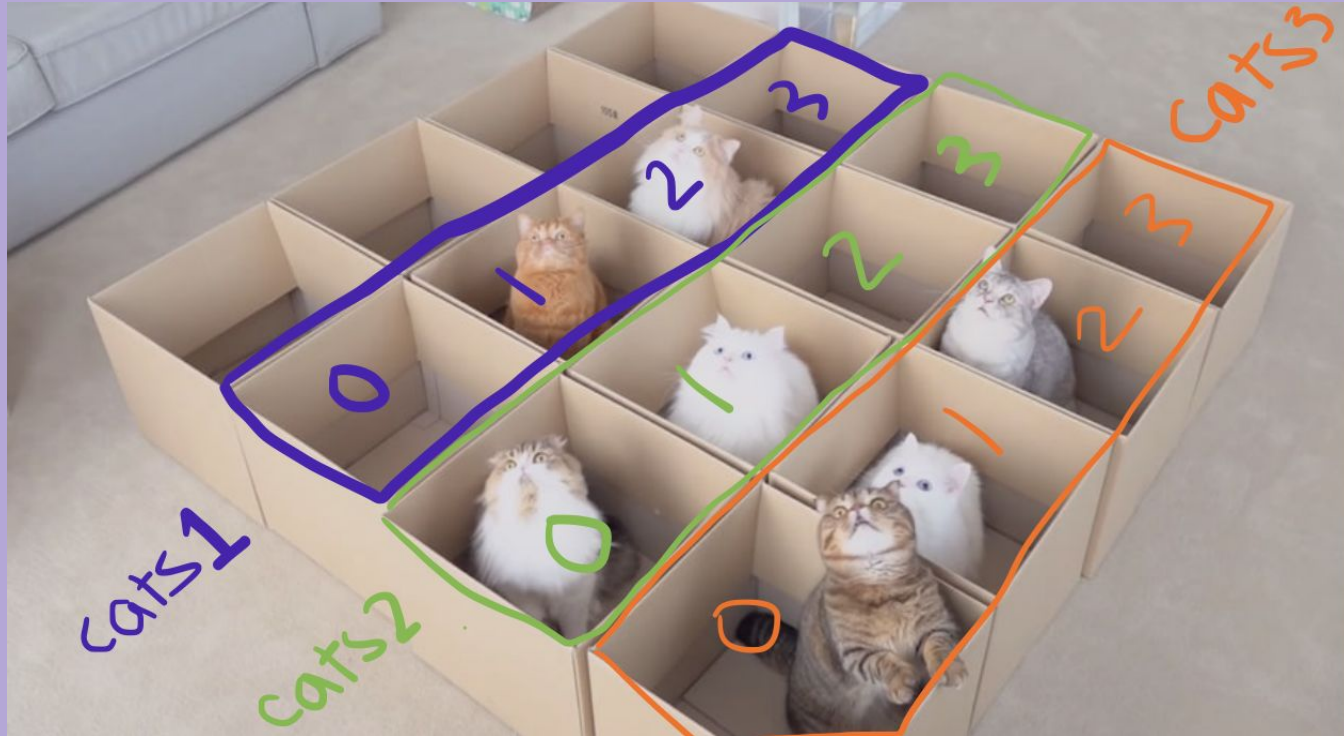
Data Types - Array

cats3[0]



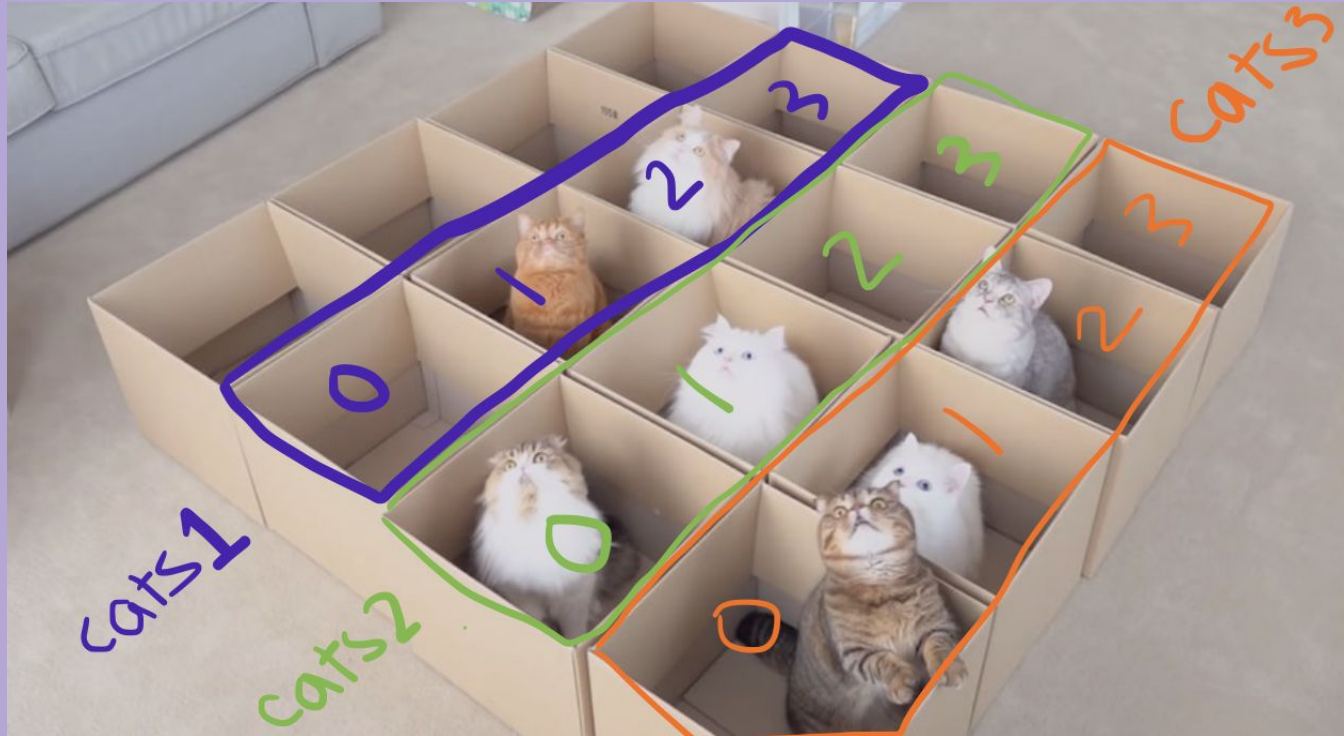
Exercise: Cats in Boxes (THREE VOLUNTEERS)

Tell me how to pick up an **orange** cat.



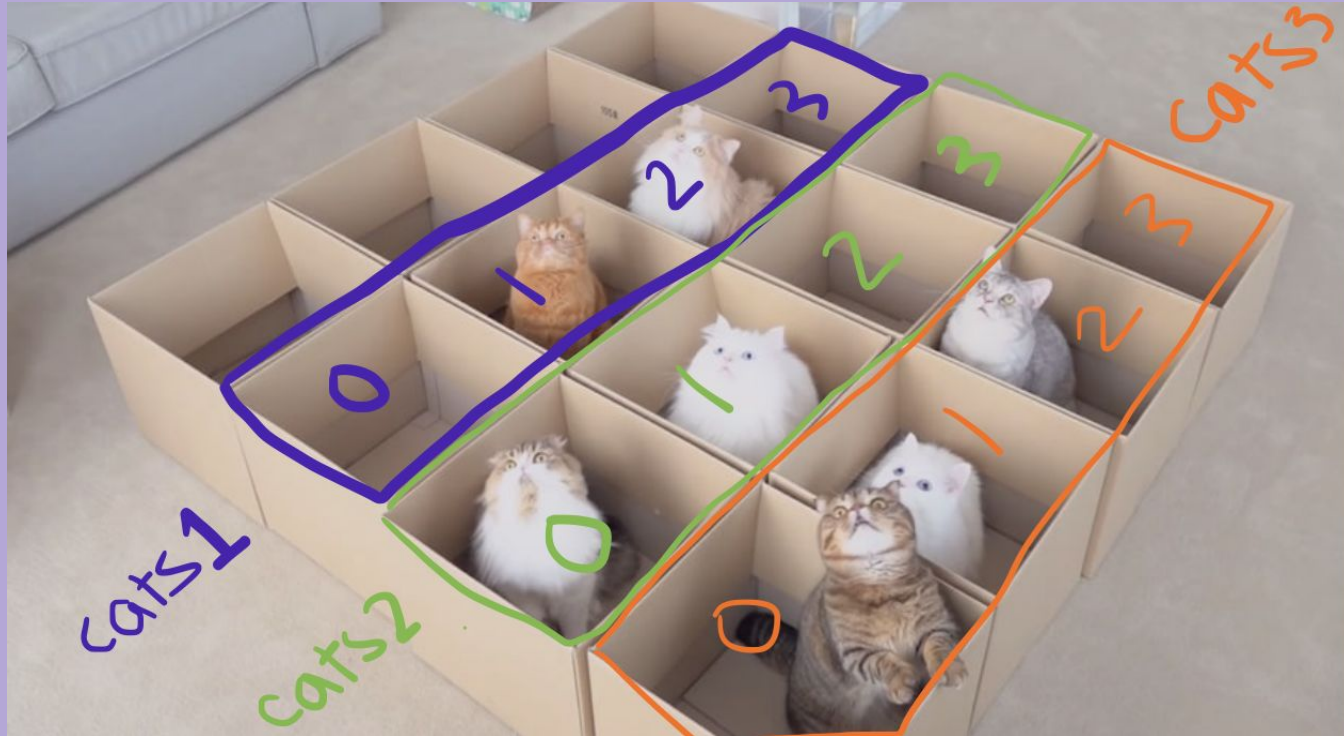
Exercise: Cats in Boxes (THREE VOLUNTEERS)

Tell me how to pick up a **gray and white** cat.



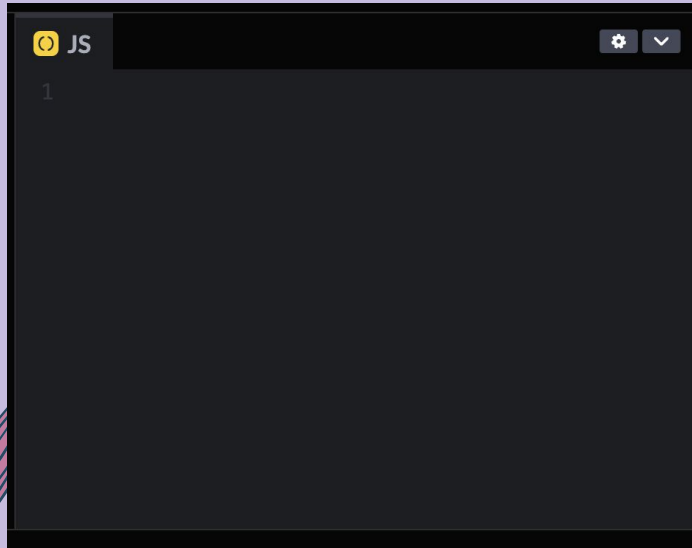
Exercise: Cats in Boxes (THREE VOLUNTEERS)

Tell me how to pick up a **cat with long hair**.



Let's Practice!

A CodePen is already open for you. You are logged into the Girls Code Club account! **Please name your CodePen using the username you made last session.** Raise your hand if you need help.



Remember that **console.log()** let's you print things out in the console at the bottom of the page. Please let us know if you can't find your console.

Coding Exercise #1

Write the following code in JavaScript (also in your packet):



JS

```
1 var colors = ["red", "pink", "green", "yellow", "purple", "orange", "blue"];
2 console.log(colors[0]);
3 console.log(colors[5]);
4 console.log(colors[3]);
5 // log the rest of the rainbow below this line!
```

rainbow (ROYGBIV). For example, if you typed `console.log(colors[0])`, what would you get?

Coding Exercise #2

Console

```
"To start making my sanwich, lay out two slices of bread"
```

Use the console to print instructions, telling me how to make your favorite sandwich. Example:



JS

```
1 var sandwich = ["bread", "peanut butter", "jelly", "more bread"];
2 console.log("To start making my sanwich, lay out two slices of " + sandwich[0]);
3 // log the rest of the instructions below this line!
4
```


Coding Exercise #3

Create an array that tells us about your morning routine:

```
JS 42 unsaved changes X
1 var routine = ["feed the cats", "medicate the cats", "get dressed", "brush my teeth",
2   "rub my eyes", "make coffee"]
3 console.log("The first thing I do every morning is " + routine[0])
4 // log the rest of the instructions below!
5
```