Arrays and Objects

Collections

Arrays and objects are both collections

They can store **multiple** pieces of data

What is an array?

An array is like a list

It's an **ordered** list

We access values stored in the list using **indexes** (just numbers)

Arrays can store any type of data

Arrays use square brackets [ ]

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Creating arrays

```
const names = ["sam", "vasile"]

names.length === 2

names[0] === "sam"

Names[10] === undefined
```

Adding elements to an array

```
const names = ["sam", "vasile"]


names.length === 2


names.push("mimi") // Adds to the end of the array


names.length === 3;


But we're using const!
```

Removing elements from an array

```
const names = ["sam", "vasile"]


names.length === 2


names.shift() // Removes the first element from the
array


names.length === 1;


names.pop() // Removes the last element from the array
```

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Other things we can do with arrays

```
const names = ["sam", "vasile", "mimi", "archibald"]

names.indexOf("vasile") // 1

names.splice(1, 2) // Removes 2 elements, starting at index 1

names.slice(1, 2) // Returns a portion of the array
```

Arrays

To the code editor

Arrays

Any questions on arrays?

Objects

Objects are collections which are not ordered

Values are accessed using **keys**

An object stores a **value** at a **key**. This is a **key-value pair**

Objects use curly brackets { } and square brackets [ ]

Creating objects

```
const cat = {
    name: "Jasper",
    age: 2,
    breed: "Exotic shorthair",
    favouriteFoods: [
        "Sardines",
        "Tuna"
    ]
}
```

```
const cat = {
        name: "Jasper",
        age: 2,
        breed: "Exotic shorthair",
        favouriteFoods: [
                "Sardines",
                "Tuna"
        ]
}
```

Accessing object properties

cat.name === "Jasper"

cat.age === 2

cat["age"] === 2

typeof cat["breed"] === "string"

```
const cat = {
        name: "Jasper",
        age: 2,
        breed: "Exotic shorthair",
        favouriteFoods: [
                "Sardines",
                "Tuna"
        ]
}
```

Setting new object properties

```
cat.colour = "grey"


cat["BFF"] = "Archibald"
```

```
const cat = {
        name: "Jasper",
        age: 2,
        breed: "Exotic shorthair",
        favouriteFoods: [
                "Sardines",
                "Tuna"
        ]
}
```

Object properties

```
// cat.favouriteFoods is an array

cat.favouriteFoods.push("Salmon") // still works

cat.favouriteFoods.length === 3

cat.age++
```

Objects

To the code editor

Objects

Any questions on objects?

Arrays and Objects

Notice any similarities?

Arrays and Objects

Notice any similarities?

```
typeof names === "object"
```

In JS, arrays are *actually* objects, with some extra functionality like push and shift, and where all the keys are numbers

Arrays and Objects

Thanks

We'll deploy exercises on these

Any questions?