Introduction to Programming JavaScript

Part 3

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Objects

Objects

Objects are variables too, but they can contain many values.
Objects are written as **name:value** pairs, with the names and the values separated by **colons**

```
let person = {
 name: "John",
 age: 31,
 favColor: "green",
 height: 183
};
```

Object Properties

You can access object **properties** in two ways.

```
objectName.propertyName
//or
objectName['propertyName']
```

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Classes

Creating a Class

A class uses the keyword class and contains a constructor method for initializing.

```
class Rectangle {
 constructor(height, width) {
   this.height = height;
   this.width = width;
 }
}
```

Instantiating a Class

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A declared class can then be used to create multiple objects using the keyword **new**.

```
const square = new Rectangle(10, 7);
const poster = new Rectangle(3, 8);
```

Class Methods

```javascript
class Rectangle {
  constructor(height, width) {
    this.height = height;
    this.width = width;
  }
  calcArea() {
    return this.height * this.width;
  }
}
const square = new Rectangle(5, 5);
console.log(square.area); // 25
```

Class Inheritance

The **extends** keyword is used in class declarations or class expressions to create a child of a class.

The child inherits the *properties* and *methods* of the parent.

```javascript
class Animal {
  constructor(name) {
    this.name = name;
  }
  speak() {
    console.log(this.name + ' makes a noise.');
  }
}
```

Class Inheritance

```
class Animal {
  constructor(name) {
    this.name = name;
  }
  speak() {
    console.log(this.name + '
makes a noise.');
  }
}
```

```
Class Dog extends Animal {
  speak() {
    console.log(this.name +
'barks');
  }
}


let dog = new Dog('Tiger');
dog.speak();
```

Now let's practise some JavaScript!

EXERCISE 1: INSTRUCTIONS

1. Create a new file in your text editor and save it as *objects.html* (make sure it's saved in the js-practice folder you created)
2. Let's start with the script tag
3. Create an object with your name, email and age
4. Create 2 more objects of your choice
5. Console.log the objects you've created

EXERCISE 2: INSTRUCTIONS

1. Create a new file in your text editor and save it as *objects.js* (make sure it's saved in the js-practice folder you created)
2. Link your JS file to the HTML file you created in EXERCISE 1
3. In *objects.js* file, create a class for Human
4. Add a **constructor** to your human class. The constructor should accept name and age as arguments.
5. Add a **talk** method to your class.
6. The **talk** method should console.log the name argument + "speaks"
7. Create a **Man** class that **extends** the **Human** class
8. Create a **new** instance of the **Man** class
9. Call the **talk** method on the **new** Man instance

Thanks!

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