

# JavaScript Arrays

Program Name

Class Date

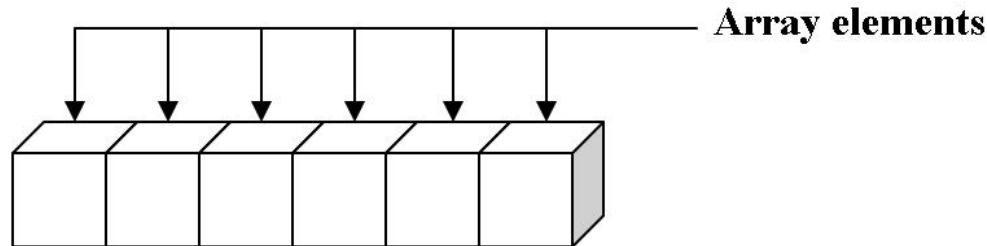
# Today's Goals

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- Indexing
- Push, pop, unshift, shift
- Join
- Using split to create arrays

# Arrays

- An array can hold many values under single a variable.
- Values can accessed by referring to an index number.
- The index is the position that the value is ordered in.



# Indices

- 0. Eggs
- 1. Milk
- 2. Juice
- 3. Cheese

Take a look at the above list, notice anything peculiar?

# Indices

Javascript, like many computer programming languages is zero based.  
Meaning that the first number is 0 not 1.

Which means that the first element's assigned index is 0.

# Why use Arrays

- If you have a list of car names, storing the cars in single variables could look like the example below
- However, what if you want to loop through the cars and find a specific one? And what if you had not 3 cars, but 300?

```
let car1 = "Honda";  
let car2 = "BMW";  
let car3 = "Ford";
```

# Arrays Syntax

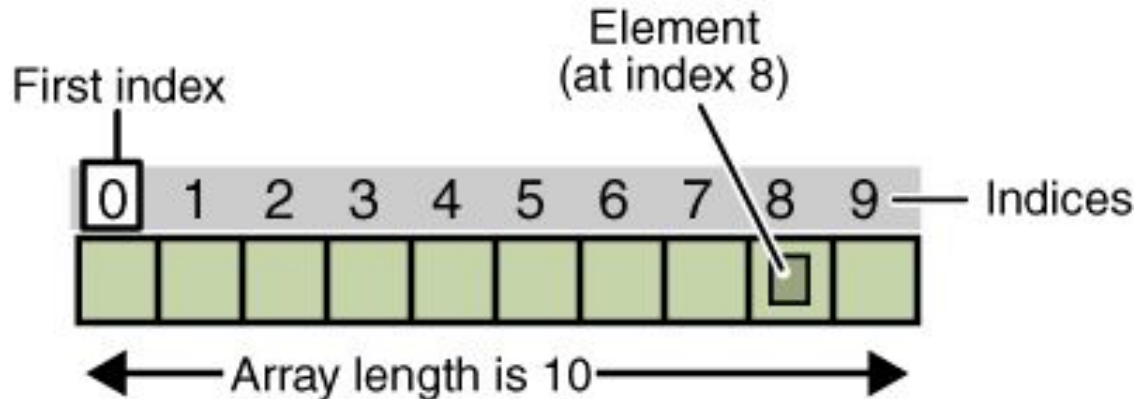
- Arrays to the rescue!
- Array values are surrounded by square brackets and separated by commas.

```
let cars = ["Honda", "BMW", "Ford"];
```

# Accessing Array Elements

- Access elements with square brackets and an index within them.
- Note the first element's position is 0, not 1.

```
let cars = ["Honda", "BMW", "Ford"];  
cars[1]; // => "BMW"
```





# Modifying Array Elements

- Elements can be modified while accessing them.

```
let cars = ["Honda", "BMW", "Ford"];  
cars[1] = "Nissan";  
// "Nissan" replaced "BMW"  
// => ["Honda", "Nissan", "Ford"]
```

# Array Methods

- length
  - Returns amount of elements in array
- push(element)
  - Add element to end of array and returns new length
- pop()
  - remove last element of array and returns element that was removed

# Array Methods

- `unshift(element)`
  - Add element to front of array and returns new length
- `shift()`
  - remove first element of array and returns element that was removed
- `sort()`
  - Alphabetically sorts array

# Array Methods

```
let cars = ["Honda", "BMW", "Ford"];

cars[cars.length-1] = "Nissan";
// => ["Honda", "BMW", "Nissan"]
cars.push("Toyota");
// => ["Honda", "BMW", "Nissan", "Toyota"]
cars.unshift("Porsche");
// => ["Porsche", "Honda", "BMW", "Nissan", "Toyota"]
cars.pop();
// => ["Porsche", "Honda", "BMW", "Nissan"]
cars.shift();
// => ["Honda", "BMW", "Nissan"]
cars.sort();
// => ["BMW", "Honda", "Nissan"]
```

# Array Methods

- splice(index, numElementsToRemove, element)
  - Add elements at specified index and removes specified elements.
  - Returns array of elements removed

```
let cars = ["Honda", "BMW", "Ford"];
let removedCars = cars.splice(1, 0, "Nissan");
// => ["Honda", "Nissan", "BMW", "Ford"]
//nothing was removed so removedCars is []

removedCars = cars.splice(2, 1, "Porsche", "Toyota");
// => ["Honda", "Nissan", "Porsche", "Toyota", "Ford"]
//removedCars is now ["BMW"]
```

# Arrays and Strings

- join(str)
  - Returns string of elements separated by specified string.

```
let cars = ["Honda", "BMW", "Ford"];  
console.log("I have a " + cars.join(" and a "));  
//Prints: I have a Honda and a BMW and a Ford
```

- split(str)
  - Creates an array by separating a string into substrings, using a specified separator string

```
let str = "Have a good day!";  
let arr = str.split(" ");  
//arr would be ["Have", "a", "good", "day!"]
```

## Problem of the Day

Let's create a contacts array; "Steve Smith", "Matt Davis", and "Amy Linn"

- Create a father variable and assign it "Matt davis" the second element in the array.
- Update the first element in the array to "Mark Williams".
- Use pop() to remove the last element from the array.
- Use the push() method to add "Michelle Johnson" to the end of the array.
- Assign the value of the length of the contacts array to a numberOfContacts Variable.

## Task: Arrays and DOM

- [known brand] is making a juice bar where you can use whatever fruit you like
- Consider the following array:
  - `let fruits = ["apple", "orange", "kiwi"];`
- Create a button that when clicked
  - Prompts user for new fruit and adds it to the array
  - Sort the array
  - Display elements separated by " with " on the web page



# Checklist

## Skills Learned

Competency: Programming  
Fundamentals

- ☐ Arrays

## Homework

- ☐ Arrays and DOM