



JavaScript: Arrays

Definitions

variable:

A location in the computer's memory to store information.

- Can be numbers, strings, booleans, and more
- We declare a variable with the var keyword
- We give variables a name
- We can give variables value or change their values with the assignment operator =

Definitions

array:

A variable that holds more than one value

Example:

```
var arr = ["have", "a", "great", "day",  
"pirates", "arrgh"];
```

- The variable `arr` is an array that holds 6 strings
- Each value in the array has an index, starting at 0
- The array has a length $\rightarrow 6$
- The last index is...
5 (you can use `arr.length - 1` to get last index)

Accessing Values

bracket notation:

```
var arr = ["have", "a", "great", "day",  
"pirates", "arrgh"];  
console.log(arr[3]);
```

What gets printed to the console?

day

We can change the value at an index with =

```
arr[arr.length - 1] = "arrrrrrrrrggggghhh";
```

Array Functions

push():

Adds a value to the end of an array

```
arr.push("yoooo");
```

pop():

removes the last value of an array and returns it

```
arr.pop();
```

Array Functions

shift():

Removes the first value of an array

```
arr.shift();
```

unshift():

adds an element to the front of an array

```
arr.unshift("yoyoyo");
```

Example

What is in the array after the following code runs?

```
var arr = [4, 19, 5, 6, 2, 8];  
arr.push(3);  
arr.pop();  
arr.push(12);  
arr.shift();  
arr.unshift(0);  
arr.push(3);
```

Example 2

Go to the following link and answer the following questions: bit.ly/ArrayExample

1. What is the name of the array that this app uses?
2. On what line of code does the array have information added to it?
3. On what lines of code does the app give access to the contents of the array?
4. On what line of code does the array remove elements?

Multi-Dimensional Arrays

We can make an array that holds other arrays:

```
var twoDArray = [ [2,3] , [4,5] , [1,7] ];
```

We often write them vertically:

```
var twoDArrayV = [  
    [0,3] ,  
    [3,5] ,  
    [11,7]  
];
```

Example

Go to the following link and do the following:

bit.ly/MDArray

1. Change the code on lines 13 - 18 in the Javascript box in order to access the elements at the correct indexes so that their messages are correct.