JavaScript Iteration

Faster accessing of Arrays

- The upside of arrays is that they can store a lot of data
- The downside of arrays is that they can store a lot of data
- What do you do if you want to access all of it?

Iteration / Looping

- The best way to access all the data in an array is with iteration, also called “looping”
- When you loop through an array you look at each element, usually starting at 0 and ending at the last element

Finding the Average

80	87	94	82	62	98	81	81	74	91
0	1	2	3	4	5	6	7	8	9

- What would you do if you wanted to find the average of all the grades?
- Sum up all of the elements and then divide by the number of elements

for loop

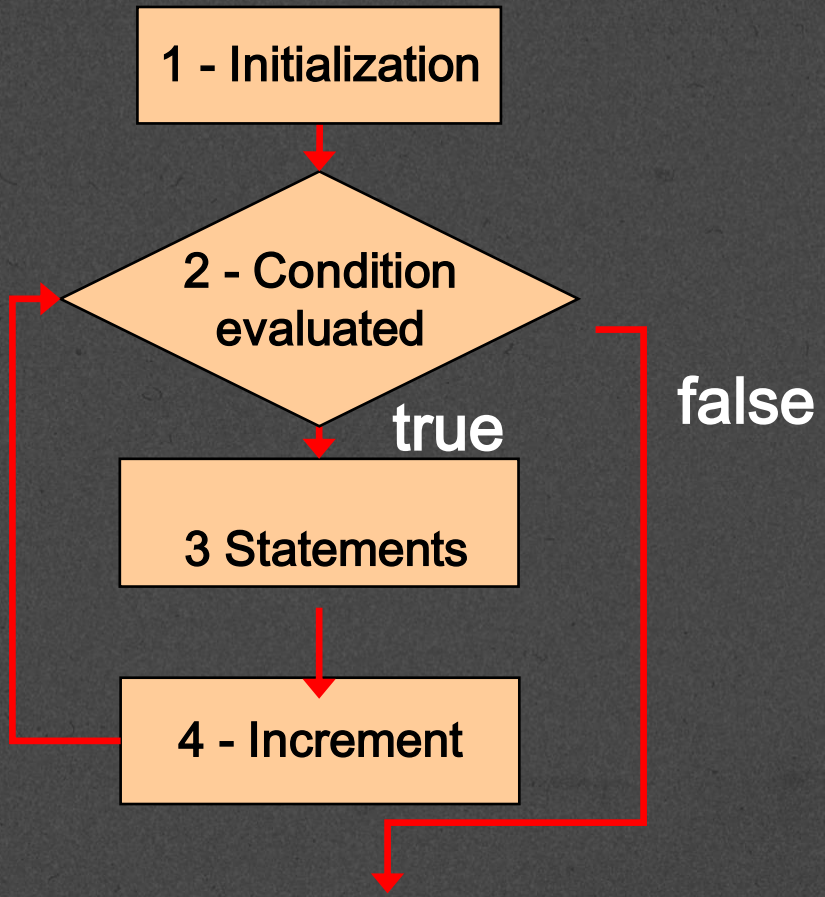
- We will use a for loop
- The syntax is:

```
for (j = 0; j < array.length; j++){
    //The steps in here are repeated
}
```

Breaking Down the for Loop

- Start with the keyword for

1. Set a variable to the initial value
   - (usually index =0, counter = 0, or i = 0)
2. Run a boolean test case (true/false)
3. Run the code
4. Update your variable, and go back to 2.


1 - Initialization
2 - Condition evaluated
true
false
3 Statements
4 - Increment

```
for (index = 0; index < array.length; index++){
    document.write(array[index]);
}
```

- If the array has 10 elements, the for loop will run 10 times and stop as soon as index = 10

Finding the Average

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```
var sum = 0;
for (index = 0; index < grades.length; index++){
        sum += grades[index];
}
document.write(sum/grades.length);
```

Loop breakdown

- Why use grades.length instead of “10”?
- What would happen if you subtracted 1 instead of adding 1?
- What would happen if the condition was set to index <= grades.length?

Review

- Looping is used for much more than arrays!
- You can loop from low number to high number, high number to low number, or even just a subset
- Once again, practice, practice, practice

Acknowledgements/Contributions

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