

# ARRAYS, LOOPS, AND CONDITIONALS

### QUESTIONS FROM LAST TIME

- ▶ How do you choose between a for-loop and a forEach loop?
- ▶ I don't understand the syntax of the loops. :(
- ▶ How will the homework be submitted?
- ▶ How can I get practice with loops?
- ▶ Is there an easy way to replace large numbers of items in an array?
- ▶ How do I know if I'm keeping up with the material?

### LEARNING OBJECTIVES

- ▶ Better understand arrays and iteration
- ▶ Use and understand conditional statements
- ▶ Use for-loops for purposes other than array iteration
- ▶ Know how to solve FizzBuzz

# ARRAY PRACTICE

# COMPARISON OPERATORS

## ARRAYS, LOOPS, AND CONDITIONALS

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==

Equality

===

Type strict equality

!=

Inequality

!==

Type strict inequality

>

Greater than

>=

Greater than or equal to

<

Less than

<=

Less than or equal to

# CONDITIONAL STATEMENTS

# IF STATEMENTS

An if-statement in Javascript is a code construct that allows code to be conditionally executed. For example, if a number is greater than 60 you can print "You pass!" to the console, otherwise print "You failed" to the console.



## ARRAYS, LOOPS, AND CONDITIONALS

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```
if (cardBalance <= 0) {  
    console.log("You are debt free!")  
}
```

```
if (cardBalance <= 0) {  
    console.log("You are debt free!")  
} else {  
    console.log("You owe some money")  
}
```

```
if (cardBalance === 0) {  
    console.log("You are debt free!")  
} else if (cardBalance > 0) {  
    console.log("You owe some money")  
} else {  
    console.log("The bank owes you money!")  
}
```

### INDEPENDENT PRACTICE

- ▶ If you're under 16, you can't do much but go to school
- ▶ If you're 16 or older you can drive
- ▶ If you're 18 or older you can vote
- ▶ If you're 21 or older you can drink
- ▶ If you're 25 or older you can rent a car
- ▶ If you're 35 or older you can run for president
- ▶ If you're 62 or older you can retire

# SWITCH STATEMENT

The switch statement in Javascript executes labeled code based on a value. So if a number is equal to 3, the switch-statement will execute the code you labeled for the value 3. If the number is 10 it will execute the code you labeled for the value 10. Etc.

## ARRAYS, LOOPS, AND CONDITIONALS

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```
var food = 'banana'

switch(food) {

  case 'pear':

    console.log('I like pears')

    break;

  case 'apple':

    console.log('I like apples')

    break;

  default:

    console.log('No favorite')

    break;

}
```

# INDEPENDENT PRACTICE

- ▶ A: Great job!
- ▶ B: Good job
- ▶ C: You could do better
- ▶ D: You're not doing so well
- ▶ F: You've failed
- ▶ Other: We don't know what your grade is

# BOOLEAN LOGIC



# BOOLEAN AND

The boolean AND operator is denoted by `&&` and decides if both expressions are true. If both expressions are true, the whole expression is true. If one of them is false, the whole expression is false.

## ARRAYS, LOOPS, AND CONDITIONALS

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```
if (age >= 15 && age <= 18) {  
    console.log("You're in high school")  
}
```

# AND TRUTH TABLE

Left side	Right side	Result
TRUE	TRUE	TRUE
TRUE	FALSE	FALSE
FALSE	TRUE	FALSE
FALSE	FALSE	FALSE

# BOOLEAN OR

The boolean OR operator is denoted by `||` and decides if one of two expressions is true. If at least one of the expressions is true, the whole expression is true. If they're both false, the whole expression is false.

## ARRAYS, LOOPS, AND CONDITIONALS

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```
if (age < 18 || age >= 62) {  
    console.log("You don't have to work")  
}
```

# OR TRUTH TABLE

Left side	Right side	Result
TRUE	TRUE	TRUE
TRUE	FALSE	TRUE
FALSE	TRUE	TRUE
FALSE	FALSE	FALSE

# BOOLEAN NOT

The boolean NOT operator is denoted by ! and gives you the opposite value of the expression. If you have true expression, prefixing it with ! will return false, and vice-versa.

```
var eighteenOrOlder = (age >= 18)
var underEighteen = !eighteenOrOlder
```



# FOR LOOPS

This is run once, before the loop starts. In this case, the initial value of `i` is 1.

This is executed every time the loop reaches the end of your code. If the condition is true, the loop repeats. If it's false, the loop exits.

```
for (var i = 1; i <= 100; i = i + 1) {  
  console.log(i);  
}
```

This is your code. It is executed one time each time the loop repeats. In our case, it's executed 100 times, with the value of `i` starting at 1 and ending at 100.

This is run once at the very end of your code, just before the condition is checked. In this case, it ensures that `i` is incremented every time we run the loop.

# FIZZBUZZ

- ▶ Print all of the numbers from 1 to 100 (inclusive)
- ▶ If a number is divisible by 3, print 'fizz' instead of the number
- ▶ If a number is divisible by 5, print 'buzz' instead of the number
- ▶ If a number is divisible by both 3 and 5, print 'fizzbuzz' instead of the number

**EXIT TICKETS**