Class 3 Recap

We learned what a **list/array** is which is just a collection of items (I.e. list of strings, list of numbers)

// Array: list of items in JS

var listOfNumbers = [1,4,5,7,0];

We learned that we can do 4 things to a list

1. Add to a list

// Add to the list

listOfNumbers.push(10);

1. Update an item in the list, reminder JS uses **0-based indexing** which means we count items starting from 0 **not** 1 like you do in real life.

// Update an element in the list

// JS uses 0-based indexing, when counting up, we start from 0 not 1

listOfNumbers[0] = 99;

console.log(listOfNumbers)

// i want to update the third element in the list to 100, we use index 2

listOfNumbers[2] = 100;

1. Delete an item in the list, use the pop() function

// Delete from the list

listOfNumbers.pop()

1. Check how many items in the list

var listLength = listOfNumbers.length;

We learned what a **for-loop** is which is a framework in Javascript we use to **iterate** (or “go through”) each item in the list, and do something every time we loop through the list

// Iterating through the list

// Go through each element in the list

let listOfWords = ["hello", "my", "name", "is", "Ansel"] // list of string

// for-loop

let i; // i is a counter

// i++ means increase the value of i by +1 each time the for-loop run

// i < listOfWords.length is a guard condition to make sure the for loop only runs listOfWords.length times

for(i = 0; i < listOfWords.length; i++) {

  console.log(listOfWords[i])

}

We also started on a calculator project, we create a function that takes in a string input like “3x4” and want the function to output the result based on basic arithmetic calculations.

// x is mulitplication, / is division, + is addition, - is substraction

function calculator(stringInput){

  // Step 1: iterate through the string, make the string into a list

  let listOfCalculatorItems = stringInput.split("")

  console.log(listOfCalculatorItems)

  // Step 2: figure out what is the operator being inputted

  let operator = listOfCalculatorItems[1];

  console.log(operator)

  // Step 3: to "parse" the numbers into actual numbers

  let firstNumber = parseInt(listOfCalculatorItems[0]);

  let secondNumber = parseInt(listOfCalculatorItems[2])

  // Step4: bunch of if stateements depending on what the operator is:

  let result;

  if (operator == "x") {

    result = firstNumber \* secondNumber;

  } else if (operator == "/") {

    result = firstNumber / secondNumber;

  } else if (operator == "+") { // addition

    result = firstNumber + secondNumber;

  } else if (operator == "-") { // substration

    result = firstNumber - secondNumber;

  }

  return result;

}

We make **test cases** using console log and calling the function to ensure we get the right results when running the function:

// Calculator

let testCase1 = "3x5" // Data type? : string (text)

let testCase2 = "5+9"

let testCase3 = "7-3"

// Test cases

console.log(calculator(testCase1) == 15) // == checks if the value are the same

console.log(calculator(testCase2) == 14)

console.log(calculator(testCase3) == 4)

**CHALLENGE TASKS:**

Improve the calculator function so that it does not accept invalid inputs like “hello” or “3xx5”, and return a result like “Invalid input” message. Right now if you input things like “hello” the function just blows up and errors out, find a way to handle it.