

**Javascript Project 1**

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**Summary**

This is your first project in Javascript.

Make sure you submit each milestone to your github repo.

Teachers note: when using bootstrap, or any other library, it is highly recommended to read their documentation before trying to implement something alone.

**Milestone 1 - Fibonacci**

Features

* Create a simple website that presents the following text: “The Fibonacci of X is Y”, where X & Y are numbers declared in your JS code (should present numbers instead). Y is the fibonacci number at index X in the fibonacci sequence.
* X and Y should be declared as JS variables. Both X and Y should be added to the HTML with JavaScript (meaning, do not write the value of X and Y directly in your HTML code, use Javascript to do that)
* What is a [Fibonacci number](https://en.wikipedia.org/wiki/Fibonacci_number)

**Milestone 2**

Features

* Instead of hardcoding Y (the result of the Fibonacci of X), calculate it with a for loop
* The loop should create the Fibonaccci sequence and stop at the desired index (X), returning the desired Fibonacci number (Y)
* The calculation should be wrapped in a function, that gets X as an argument, and returns Y
* After writing the function, you should call the function, and assign the returned value in your HTML to present to the user

**Milestone 3**

Features

* Create an input element and a button next to it that calculates fibonacci.
* Follow this figma design (it is based on bootstrap, so use bootstrap): [ITC Fibonacci Project Design](https://www.figma.com/file/OrSN9pZ2DY6dDnLCowqUtT/ITC-Fibonacci-Project?node-id=0%3A1) (For this milestone, only the first row of screens is relevant)
* Add a click event listener to the button, that executes a function that takes the number value in the created input, calculates it’s Fibonacci value and presents it to the user
* Recommended googling: ‘HTML Input element’ and ‘get value in Javascript of an input element’

**Milestone 3.1 - Geekout**

Features

* Implement the Fibonacci function with recursion
* We know you can google it and copy the code, try doing it by yourself (go over the lectures/youtube if needed)

**Milestone 4**

Features

* Run the following local server: [fibonacci-server](https://github.com/israeltechchallenge/fibonacci-server) (read the readme!)
* The server should not be inside your project folder, it should be in a separate place by itself. Open your project folder and the server folder in separate VS Code windows.
* Create a function that calls this server on this address: [http://localhost:5050/fibonacci/](http://localhost/fibonacci/%7Bnumber):number, where :number is a parameter passed to the server to be calculated (make sure that the server is running)
* The response is the calculated fibonacci, present it to the user.
* Calling the server should replace your implementation of calculating fibonacci

**Milestone 5**

Features

* Present a loader to the user when a call is made to the server (indicating the server is calculating)
* Present an error to the user if the input number is more than 50, and do not send a server request
* Try passing the number 42 to the server. The server will send back an error, present this error to the user. (read fetch() docs to see how to identify if the server sent an error )
* Follow the second row of screens in the figma design

**Milestone 6**

Features

* Create a function that calls the server with this url: <http://localhost:5050/getFibonacciResults>
* Call this function when the screen loads. You will get a list of fibonacci calculations that you previously submitted to the server
* Present the list to the user under the calculator
* The list should be updated every time the user makes a new calculation (suggestion: create a function the takes the data from the server response, and creates the html list to present to the user, and call this function after the user makes a new calculation)
* Follow the third row of screens in the figma design

**Milestone 6.1 - Geekout**

Features

* Transform all you functions with promises in them to async/await

**Milestone 7**

Features

* Add a checkbox, under the calculator with “Save Calculation” text
* If it is checked, calculate the fibonacci through the server (so it will save it to be presented in the list)
* If it is not checked, calculate the fibonacci locally in your function (won’t send a request to the server). This time, allow 42 to be calculated. Still prevent the calculations for negative numbers and higher than 50.

Since the calculation happens locally, don’t add it to the results list. (Do show tough on the result)

* Follow the fourth row of screens in the figma design

**Milestone 7.1 - Geekout**

Features

* Add a select box with sort by date asc or desc / number asc or desc
* After the user is checking one of the items in the list, rearrange the list to match the sorting preferences
* Follow the fifth row of screens in the figma design