Discussion 5.1 JavaScript Generators

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1/30/23

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According to our book JavaScript the definitive guide, a generator is like an iterator when you iterate values that do not have “elements of a data structure, but the result of a computation.” (Flanagan, 2020). They can pause, resume, and give more than one value. (Rascia, 2021) In order to use a generator function, the function must start with function\* name(){}. Notice the star\* at the end of function.

Why are JavaScript Generators used? It is common to use them to create iterators. (Flanagan, 2020). However the original way to use generators so they can “pause a computations, yield intermediate results, and then resume the computation later.” (Flanagan, 2020). They can also be used to work like async or await. (Rascia, 2021)

A generator is used with a generator function. Which is similar to regular function in JavaScript except it has a keyword with function\* instead of function. An example from our book:

function\* fibonacciSequence() {

let x = 0, y = 1;

for (; ;) {

yield y;

[x, y] = [y, x + y];

}

}; //yield, yields a single value, if it were yield\* it will “iterates an iterable object and yields each of the resulting values” (Flanagan, 2020)

The difference between a generator and an iterator are: An iterator is “an object which defines a sequence and potentially a return value upon its termination” (*Iterators and Generators - JavaScript | MDN*, 2022). Whereas a generator is different way they make it so you can create an “iterative algorithm” with one function that is not going to continue. (*Iterators and Generators - JavaScript | MDN*, 2022)

References:

Flanagan, D. (2020). *JavaScript: The Definitive Guide: Master the World’s Most-Used Programming Language* (7th ed.). O’Reilly Media.

*Iterators and generators - JavaScript | MDN*. (2022, December 13). MDN Docs. Retrieved January 30, 2023, from https://developer.mozilla.org/en-US/docs/Web/JavaScript/Guide/Iterators\_and\_Generators

Rascia, T. (2021, August 27). *Understanding Generators in JavaScript*. DigitalOcean Community. Retrieved January 30, 2023, from https://www.digitalocean.com/community/tutorials/understanding-generators-in-javascript