In this essay I want to discuss JavaScript Generators. I will define what JavaScript Generators are and will discuss why they are used. As well, I will explain the difference between a JavaScript Generator and an Iterator. So, what is a JavaScript Generator?

A JavaScript Generator is “a process that can be paused and resumed and can yield multiple values. A generator in JavaScript consists of a [generator function](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Statements/function*), which returns an iterable generator object.” (Rascia, 2021). Generators are used to control the iterator, meaning they can be suspended and then resumed at a later time. Generators can be used to act like an infinite loop. For example, consider the code below:

Text, letter

Description automatically generated

Generators can also be used for throttling. Consider the example code below:

Graphical user interface, text, application

Description automatically generated

(Taher, 2021)

The differences between Generators and Iterators can be found below:

|  |  |
| --- | --- |
| **Generators** | **Iterator** |
| Every Generator is an iterator. | Every iterator is not a generator. |
| Generator uses yield keyword. | Iterator uses iter() and next functions. |
| Generators are mostly used in loops to generate an iterator by returning all the values in the loop without affecting the iteration of the loop. | Iterators are used mostly to iterate or convert other objects to an iterator using iter() function. |
| All local variables before the yield function are stored. | Local variables are not used here. |
| Function is used to implement a generator | Class is used to implement an iterator. |

(GeeksforGeeks, 2021).

References:

Rascia, T. (2021b, August 27). *Understanding Generators in JavaScript*. DigitalOcean Community. Retrieved September 6, 2022, from <https://www.digitalocean.com/community/tutorials/understanding-generators-in-javascript>

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