

## Week 4: Research Assignment

### 1. What are the differences between var, let, and const?

*Var* is an older method of declaring a variable. Using the *var* method, users need to understand variables are defined globally or within a function. The use of *var* in declaring a variable also means it can be used without initialization such as the other two newer options, *let* and *const*. “Let’s” discuss using *let* first. *Let* is another method of declaring a variable which is only used in a block scope, such as between `{}`. *Let* can also be updated or rather re-declared without initialization, but cannot be accessed without initialization or an error message would be the result. Lastly, *const* is a form of declaring a variable but cannot be changed nor re-declared at all throughout the code/program. This type of declaration, unlike with *let* and *var*, cannot be changed nor updated after it’s initial assignment. One other item which I discovered during this research is with the use of *const* although the properties of a *const* object cannot be changed nor updated but the *values* of the properties can be modified. Such as with declaring a function or other objects.

(shubhamvora05, 2023)

<https://www.geeksforgeeks.org/difference-between-var-let-and-const-keywords-in-javascript/>

### 2. What are the differences between callbacks and promises? / 4. How does a promise work?

I decided to use both of the questions/prompts, since it seems with answering the first prompt, the other is answered. From the research and readings, I gathered it seems that callbacks are used or called within the arguments of other functions for an immediate resolution or answer whereas a promise is yet to come and uses specific parameters such as *then* and *catch*. Callbacks are used sequentially and upon execution of the function and allows the program to continue to run, which provides more control of the code. Promises on the other hand, will hold the program idle *until* the line of code is executed and presents either a positive answer (*then*) or present an error or alternative answer (*catch*) or continue to stall.

(Azam, 2021)

<https://linuxhint.com/callback-promise-javascript-examples/>