Discussion Board 2.1 – Variables

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Web231-339A Enterprise JavaScript I

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October 27, 2022

This week we look at variables. “A variable is a container for a value” (w3schools, 2022). A variable can hold different types of values (Flanagan, 2020):

- primitive types – numbers, strings, and booleans (true or false)
- object types – a collection of properties with names and values (primitive or objects)

When declaring a variable, there are three Keywords we can use:

- var
- let
- const

** The var keyword is used in web browsers before 2015, and is not used so much anymore. A var can be redeclared to a new value later, regardless of scope. This can make for confusion and cause errors.

To ‘declare’ a variable, use one of the keywords, and give it an identifier. For instance:

let hours;

To ‘initialize’ a variable, first declare it with a keyword, give it an identifier, then use the assignment operator, and give it a value – or literal. For instance:

let hours = 40;

We can use ‘hours’ throughout the program if it is declared globally. That is, at the beginning of a program, or outside of any functions, methods, or other blocks of code. If we declare ‘hours’ in a function or block of code, it can only be used locally in that block of code. This is called the scope of the variable.

A constant is also a variable, although it is not intended to vary. That is, it is constant. When declaring a constant, use the keyword ‘const’, give it an identifier in all-caps (for easy identification), use the assignment operator, and give it a value. For instance:

const PAYRATE = 12.50;

When we speak of variable types, we are talking about primitive types or object types. Primitive types are:

- numbers (integer or floating-point)
- strings
- booleans
- symbols
- null
- undefined

All other types will be objects, such as an array, for example (2020).

The data types null and unidentified are unique in that they represent a lack of a value and are each the sole member of their own value type. That is to say, they are similar yet different.

Null represents ‘no value’ for numbers, strings, and objects. For instance, a string initialized with empty quotes “” will return null; no value.

Undefined is similar in that it represents ‘no value’ for numbers, strings, and objects, the difference being that it not only has no value, but that the ‘empty value’ is also ‘undefined.’ For instance, if we declare a variable but do not initialize it with a value and then query the variable, we will get undefined. The interpreter cannot discern whether the variable is a number, string, or object. Therefore, it is undefined.

References

Flanagan, D., 2020. *"JavaScript – The Definitive Guide Seventh Edition."* O'Reilly Media, Inc. 1005 Gravenstein Hwy North, Sebastopol, CA 95472.

W3Schools, 2022. *JavaScript Tutorial – Variables."* Refsnes Data, 1999-2022. https://www.w3schools.com/js/js_variables.asp