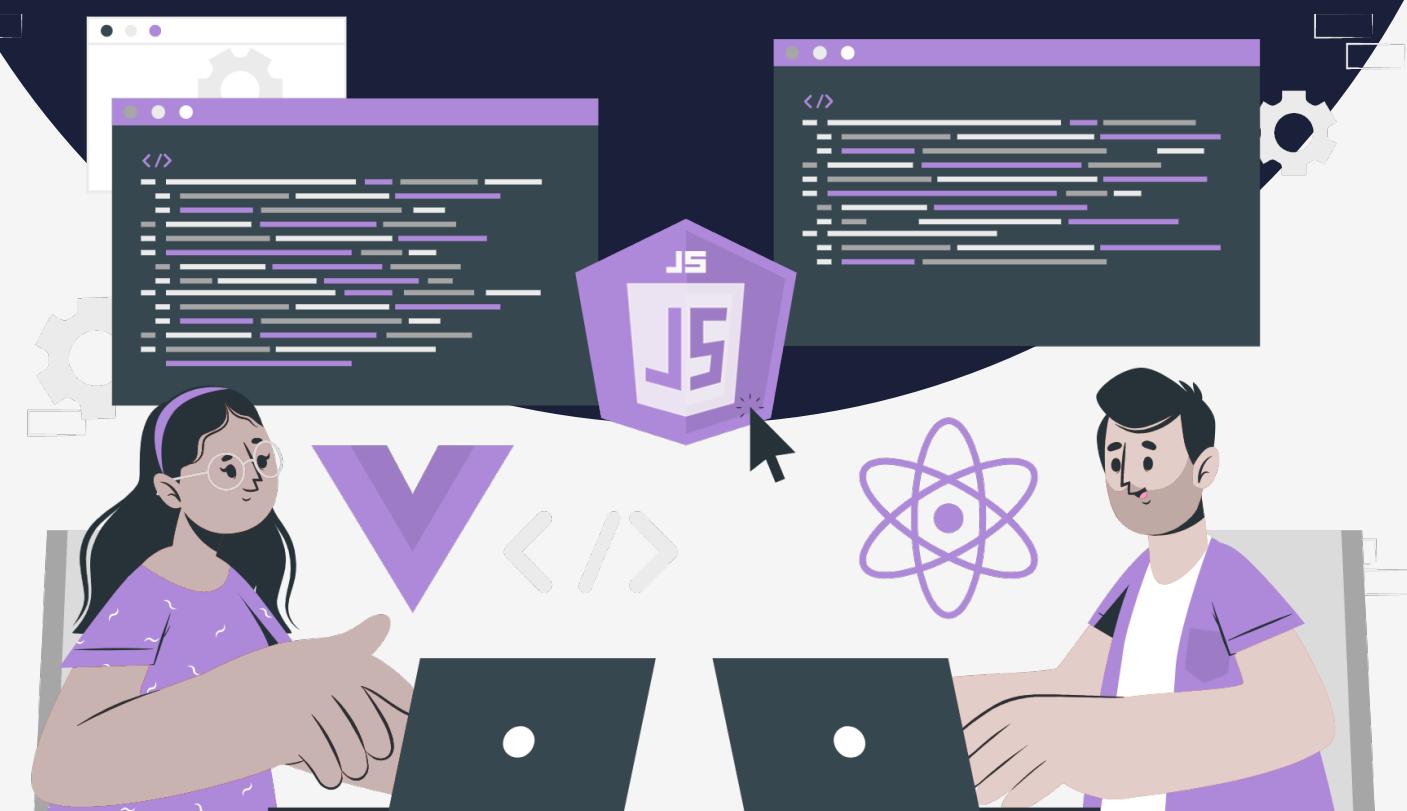


Lesson:

Values and Datatypes



Topics Covered :

1. Introduction to datatypes.
2. Datatypes in Javascript.

Data types are used to define the way the data is stored in memory. Storing data is an essential part of programming as it enables the manipulation, processing, and sharing of information within a program.

The data type is a classification of data according to the type of value that we want to operate on.

JavaScript is a dynamically typed language, which means the data type is defined by the engine itself during execution, the programmer need not explicitly declare the data type during defining. JavaScript engine is powerful enough to determine the type of data that we declare.

Following are the data types of JavaScript:

1. String
2. Number
3. Bigint
4. Boolean
5. Undefined
6. Null
7. Symbol
8. Object

String:

Strings are a data type used for representing text. A string is a sequence of characters, enclosed in single or double quotes.

```
"I am learning JavaScript"  
"I am happy to learn from PW Skills"
```

Number:

Numbers are a data type used for representing numeric values. Numbers can be an integer, whole numbers, or decimal values [floating point values].

```
90  
102.5
```

Other possible number values are infinity and NaN.

Infinity is a special value that is greater than any number.

Number.POSITIVE_INFINITY is Infinity and
Number.NEGATIVE_INFINITY is -Infinity.

```
Number.POSITIVE_INFINITY;  
Number.NEGATIVE_INFINITY;
```

NaN stands for "Not a Number" and is a special value that represents the result of an undefined or unrepresentable mathematical operation.

NaN

Infinity

Bigint

In JavaScript, there is a maximum safe number that can be represented by the Number data type, is approximately $2^{53} - 1$. This means that integers larger than this value may lose precision when represented as a JavaScript number.

Similarly, there is also a minimum safe number that can be represented by the Number data type, which is approximate $-(2^{53} - 1)$. This means that integers smaller than this value may lose precision when represented as a JavaScript number.

For numbers greater than the maximum safe number or lesser than the minimum safe number, the BigInt data type can be used.

The BigInt data type number can also be treated as a regular number by adding n to it at the end.

902345874n

Boolean

Boolean is a logical type that is either true or false.

true

false

Booleans are often used to represent the outcome of a logical comparison or the result of a logical operation.

We will look into operators in further lectures.

Undefined

undefined is a special value that indicates that a variable or property has been declared but has not been assigned a value.

We will look into variables in the next lecture.

Null

Null means nothing or empty value. It is often used to indicate that a variable or property has no value.

We will look into variables in the next lecture.

Symbol

A Symbol is a datatype that can be used as an object property key.

We will be exploring objects in depth in further lectures. One thing to note is that Symbols are unique and are often used as an object property keys.

Object

In javascript, numbers, strings, booleans, undefined, null are called as primitive data types.

Objects are non-primitive data because they can hold multiple primitive data types within them.

The object data type can contain:

1. Array
2. Object.

An array is a special type of object that is used to store a collection of elements. Each element can be of any data type and can be accessed by an index, which is a zero-based number starting from 0.

Arrays are created by using the [] brackets. We will be looking at Arrays in depth in further lectures.

```
[1, 2, "Javascript", true, null];
```

Object is a collection of properties, where each property has a name and a value. Objects are usually created by curly brackets { }. Each property of an object can be accessed using the dot notation or the bracket notation.

We will be looking at objects in depth in further lectures.

```
{  
  name: "Mithun",  
  company: "PW Skills"  
}
```