

Lesson:

Values and Datatypes



Topics Covered

1. Introduction to Data Types.
2. Datatypes in Javascript.

Introduction to Data Types.

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 identified during execution. The programmer need not to explicitly declare the data type in code.

Following are the data types of JavaScript:

1. String – Primitive
2. Number – Primitive
3. Bigint – Primitive
4. Boolean – Primitive
5. Undefined – Primitive
6. Null – Primitive
7. Symbol – Primitive
8. Object – **Non Primitive**
9. Array – Non Primitive

Datatypes in Javascript

1. String

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

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

2. Number

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

```
Javascript  
1  
2  
90  
102.5
```

Other possible number values are **infinity** and **Nan**.

```
Javascript  
NaN  
Infinity
```

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

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

3. BigInt

In JavaScript, there is a maximum safe value, which is approximately **2⁵³ - 1**. Similarly, there is also a minimum safe value, which is approximate **-(2⁵³ - 1)**.

This means that integers less than min safe value or greater than max safe value, may lose precision when represented as a JavaScript number. So, for such numbers, we use **BigInt** data type.

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

Javascript

902345874n

4. Boolean

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

Javascript

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 boolean operators in further lectures.

5. Undefined

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

Javascript

undefined

We will look into variables in the next lecture.

6. Null

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

Javascript

null

We will look into variables in the next lecture.

7. Object

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

Objects are non-primitive data because they are mutable (can be changed).

Object is a collection of properties, where each property has a key and a value, where

- keys could be strings or symbols
- values could be of any datatype.

Objects are usually created by curly brackets {} called object literal syntax.

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

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

8. Symbol

A Symbol is a data type that can be used as an object property key. Symbols as object keys, avoids potential conflicts with keys that other code may add to the object, and every Symbol() call is guaranteed to return a unique Symbol.

```
Javascript
Symbol("name")
```

9. Array - Non Primitive

Array is a data type containing data in sequential order. An array can contain multiple values with multiple data types also.

Example:-

```
Javascript
[1, 2, 3, 4, 5]
["prabir", 23, "developer"]
```