

FOR IN & FOR OF Loop:

56

- For loop: It is the most basic loop in every programming language. The for loop syntax takes three parameters; a variable declaration, an expression that will evaluate before each iteration, and the expression to be evaluated at the end of each iteration.

Syntax:

```
FOR ( INITIALIZATION; CONDITION; FINAL EXPRESSION ) {  
    // CODE TO BE EXECUTED  
}
```

- The FOR...IN Loop: The for...in loop is an iteration method for iterating over "enumerable" properties of an object. This loop applies to all objects that have these properties. Here enumerable means an array or object or strings. If we are using a for...in loop over an object, it will give us the value to each key in the object.

Syntax:

```
FOR ( VARIABLE IN ENUMERABLE ) {  
    // DO STUFF  
}
```

Ex:

```
const obj = {  
  first: 134,  
  second: 255,  
  third: 367,  
  fourth: 433  
};
```

```
for (const key in obj) {  
  console.log(obj[key])  
} // Result: 134, 255, 367, 433
```

→ The for...of Loop: To iterate over objects like arrays and strings, we can use the for...of statement. This statement is a newer feature of ECMAScript 6. The for...of loop doesn't work with objects because they are not "iterable". This iteration method is a more reliable way of looping through an array in sequence.

Example:

```
let students = ["Mark", "Harry", "Joe"];  
// Print out each type of shark  
for (let sid of students) {  
  console.log(sid);  
} // Result: Mark, Harry, Joe.
```

Comparison:

| | FOR..IN | FOR..OF |
|--------------|-----------------------|----------------------|
| → Applies to | Enumerable properties | Iterable collections |
| → Objects | Yes | No |
| → Arrays | Yes, but not advised | Yes |
| → Strings | Yes, but not advised | Yes |

→ Which loop should we use? and when?

Each type of loop is useful in a different scenario:

→ If indexes are needed while accessing an array of indexes related logical stuff are there, the for loop is a good choice.

→ If there is a need to access keys / properties regardless of the sequence, use a for-in loop.

→ If there is a need to iterate through items of an iterable, then the for-of loop is the right choice.