

For loop

A for loop is a block of statements that will be executed repeatedly a number of times until the condition is satisfied. For loop is one of the variations in the loops in which the initialization expression, test condition, and increment or decrement expression are written in a single line. The different variation in For loops are:

- For
- For/in
- For/of

For :

Syntax:

```
for (initialization; condition; increment/decrement) {  
  
    // code to be executed  
  
}
```

Initialization: to set the initial value for the loop counter.

Condition: specifies the condition that must be true, for which the loop will be executed repeatedly until the condition becomes false.

increment/decrement: used to update the loop counter variable value.

Example:

```
for (let i = 0; i < 5; i++) {  
  
    console.log(i); // Output: 0, 1, 2, 3, 4  
  
}
```

For/in:

For in is used to iterate over the properties of an object.

Syntax:

```
for (let key in object) {  
  
    // code to be executed for each key-value pair  
  
}
```

Key: The variable takes the name of properties from the object in iteration.

Object: The object that needs to be iterated.

Example:

```
const person = { name: "Alice", age: 30, city: "New York" };
```

```
for (let prop in person) {  
  
    console.log(`${prop}: ${person[prop]}`);  
  
}
```

```
// Output:
```

```
// name: Alice
```

```
// age: 30
```

```
// city: New York
```

For /of :

For of is used to iterate over the elements of an iterable object.

Syntax:

```
for (let item of iterable) {  
  
    // code to be executed for each item  
  
}
```

Item: it takes the value of the element in an iterable object.

Iterable : The iterable object that you need to iterate.

Example:

```
const numbers = [1, 2, 3, 4, 5];
```

```
for (let number of numbers) {  
  
    console.log(number);  
  
}
```

```
// Output: 1, 2, 3, 4, 5
```