Black & White Series

Loop

JavaScript for C or Java Programmers

while **Loop**

```
while (<condition>)
    <block>
```

Tests <condition> in the cycle beginning

```
do
    <block>
while (<condition>)
```

Tests <condition> in the cycle ending

Example 1

```javascript
let week = 0
const limit = Math.trunc(Math.random() * 8)
console.log('limit: ' + limit)
while (week < limit) {
  week++
  console.log('weekday: ' + week)
}
```

```
limit: 0
```

```
limit: 2
weekday: 1
weekday: 2
```

Example 2

```javascript
let week = 0
const limit = Math.trunc(Math.random() * 8)
console.log('limit: ' + limit)
do {
  week++
  console.log('weekday: ' + week)
} while (week < limit)
```

```
limit: 0
weekday: 1
```

```
limit: 2
weekday: 1
weekday: 2
```

for Loop

```
for (<initialization>; <condition>; <increment>)
  <block>
```

- `<initialization>`
  - executed before entering
  - usually initializes a control variable
- `<condition>`
  - tested on entry and every complete cycle
- `<increment>`
  - executed every complete cycle
  - usually increments the control variable

Example

```
const limit = Math.trunc(Math.random() * 8)
console.log('limit: ' + limit)
for (let day = 1; day <= limit; day++)
  console.log('weekday: ' + day)
```

```
limit: 0
```

```
limit: 2
weekday: 1
weekday: 2
```

`for...in` Loop

```
for (<variable> in <enumerable>)
    <block>
```

- Iterates for all elements of an `<enumerable>`
  - all items of an array
  - all fields of an object
- `<variable>` receives each enumeration value
  - index of an array
  - field of an object

Example 1

```javascript
const daysOfWeek = ['Mon', 'Tue', 'Wed', 'Thu', 'Fri', 'Sat', 'Sun']
for (const day in daysOfWeek)
  console.log(`weekday: ${day} - ${daysOfWeek[day]}`)
```

```
weekday: 0 - Mon
weekday: 1 - Tue
weekday: 2 - Wed
weekday: 3 - Thu
weekday: 4 - Fri
weekday: 5 - Sat
weekday: 6 - Sun
```

Example 2

```javascript
const author = {
    'First Name': 'Asdrubal',
    'Last Name': 'Montequio',
    'Age': 25
}
for (const a in author)
    console.log(`${a} - ${author[a]}`)
```

```
First Name - Asdrubal
Last Name - Montequio
Age - 25
```

for...of Loop

```
for (<variable> of <iterable>)
    <block>
```

- Iterates for all elements of an `<iterable>`
  - all items of an array
- `<variable>` receives each element
  - element of an array (not its index)
- Objects are not iterable

Example

```javascript
const daysOfWeek = ['Mon', 'Tue', 'Wed', 'Thu', 'Fri', 'Sat', 'Sun']
for (const dw of daysOfWeek)
  console.log(`weekday: ${dw}`)
```

```
weekday: Mon
weekday: Tue
weekday: Wed
weekday: Thu
weekday: Fri
weekday: Sat
weekday: Sun
```

Comparing

```
const daysOfWeek = ['Mon', 'Tue', 'Wed', 'Thu', 'Fri', 'Sat', 'Sun']
for (const day in daysOfWeek)
  console.log(`weekday: ${day} - ${daysOfWeek[day]}`)
```

```
const daysOfWeek = ['Mon', 'Tue', 'Wed', 'Thu', 'Fri', 'Sat', 'Sun']
for (const dw of daysOfWeek)
  console.log(`weekday: ${dw}`)
```

References

- Mozilla MDN - https://developer.mozilla.org

- Eloquent JavaScript - https://eloquentjavascript.net/

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Web2Learn

santanche.github.io/web2learn/