

Arrays

Web Technologies



Lecture by
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```
<!doctype html>
<html>
  <head>
    <title>
      Web Technologies
    </title>
    <style>
      p {
        color: ■blue;
      }
    </style>
    <script>
      console.log("client-side");
    </script>
  </head>
  <body>
    <p>
      Welcome!
    </p>
  </body>
</html>
```


What we will cover

- **Arrays**
- **For-in loop**
- **Test Store application**

Arrays

Syntax for the Array () constructor

- **Const arrayName = new Array (items);**
- **Example**

Const fruit = new Array ("apple", "banana", "orange");

Syntax for an Array literal

- **Const arrayName = [item 1, item 2, item 3, item n];**
- **Example**

Const fruit = ["apple", "banana", "orange"];

The Items in an Array

- Example

`const sum = [141, 212, 500];`

To refer to the first item the array is

`sum [0] = 141`

To refer to the second item the array is

`sum [1] = 212`

To refer to the third item the array is

`sum [2] = 500`

Item
Index

141	212	500
0	1	2

The Length Property

`arrayName.length`

- To get the total of an array

`const count = sum.length;`

- To add a value to the end of the array

`sum[sum.length] = 135`

For-in Loop

- Syntax

for (indexInitialization in array) {statements}

- Example

let sum = 0;

Const totals = [141.95, 212.25, 411, 135.75];

**for (let i in totals) { // i holds the current index
 sum += totals[i];}**

alert(sum); // displays 900.95

For Loops with Arrays

```
const numbers = [];  
for (let i = 0; i < 10; i++) {  
    numbers[i] = i + 1;  
}  
let displayString = "";  
for (let i = 0; i < numbers.length; i++) {  
    displayString += numbers[i] + " ";  
}  
alert (displayString); // displays 1 2 3 4 5 6 7 8 9 10
```


Test Score Application

This page says

Enter a test score, or enter -1 to end scores.

The Test Scores App

Score 1: 89

Score 2: 99

Score 3: 78

Score 4: 91

Average score is 89

The HTML Code

```
<head>
  <link rel="stylesheet" href="test_scores.css">
</head>
<body>
  <main>
    <h1>The Test Scores App</h1>
    <script src="test_scores.js"></script>
  </main>
</body>
```

The JavaScript Code

```
"use strict";
const scores = [];
let score = 0;
do {
    score = parseInt(
        prompt("Enter a test score, or enter -1 to end scores", -1));
    if (score >= 0 && score <= 100) { ...
    }
    else if (score != -1){ ...
    }
}
while(score != -1);
if (scores.length > 0) { ...
}
```

The Do-While Loop

```
do {  
    score = parseInt(  
        prompt("Enter a test score, or enter -1 to end scores", -1));  
  
    if (score >= 0 && score <= 100) {  
        scores[scores.length] = score;  
    }  
    else if (score != -1){  
        alert("Score must be a valid number from 0 through 100");  
    }  
}  
while(score != -1);
```

The For Loop

```
if (scores.length > 0) {  
  let total = 0;  
  for (let i in scores) {  
    total = total + scores[i];  
    document.write(`

Score ${parseInt(i) + 1}: ${scores[i]}

`);  
  }  
  const average = parseInt(total/scores.length);  
  document.write(`

Average score is ${average}

`);  
}
```

Try It Yourself

In this activity, you can practice using an array and for-in loop in the Test Score web application. So,

1. Use the HTML code inside slide 10 and the JavaScript code inside slides 11-13 to create the web application.