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Day 5: Arrow Functions 🔖

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Arrow Functions in JavaScript

Arrow Functions

These expressions lexically bind the `this` value while using less syntax than a typical function expression. Arrow functions are always anonymous.

Here are some basic examples of arrow function syntax:

```
(parameter) => {statements}
parameter => {statements}
parameter => expression
parameter => {return expression}

(param1, param2, ..., paramN) => {statements}
(param1, param2, ..., paramN) => expression
(param1, param2, ..., paramN) => {return expression}
```

| – | EXAMPLE |

Let's look at some simple ways to apply this syntax:

```
 1  'use strict';
 2
 3  const makeArray = (...values) => { return values };
 4  console.log('Array:', makeArray(1, 2, 3, 4));
 5  console.log('Array:', makeArray(1, 2, 3, 4, 5, 6));
 6
 7  const getSum = (a, b) => { return a + b };
 8  console.log('1 + 2 =', getSum(1, 2));
 9
10  const greeting = 'Hello, World.';
11  const capitalize = (myString) => { return myString.toUpperCase() };
12  console.log(greeting, '=>', capitalize(greeting));
```
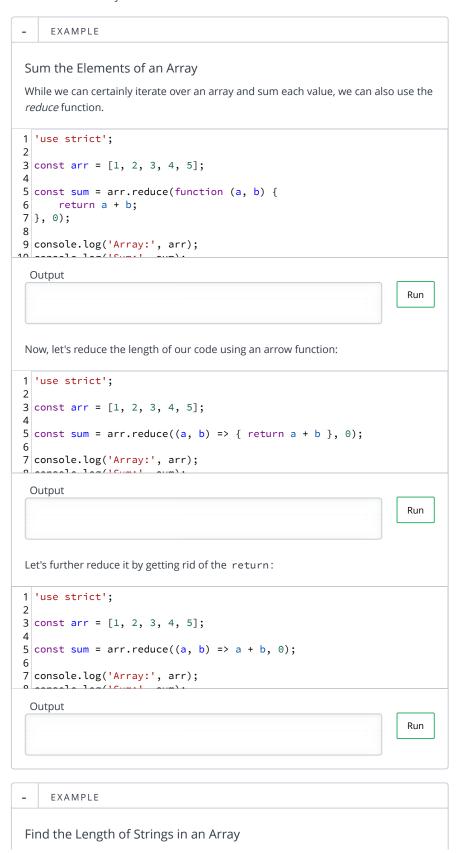
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Using Arrow Functions

Let's look at some ways we can use arrow functions to make our code shorter.

-   EXAMPLE

Sum the Elements of an Array

While we can certainly iterate over an array and sum each value, we can also use the *reduce* function.

```
1  'use strict';
2
3  const arr = [1, 2, 3, 4, 5];
4
5  const sum = arr.reduce(function (a, b) {
6      return a + b;
7  }, 0);
8
9  console.log('Array:', arr);
10 console.log('Sum:', sum);
```

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Now, let's reduce the length of our code using an arrow function:

```
1  'use strict';
2
3  const arr = [1, 2, 3, 4, 5];
4
5  const sum = arr.reduce((a, b) => { return a + b }, 0);
6
7  console.log('Array:', arr);
8  console.log('Sum:', sum);
```

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Let's further reduce it by getting rid of the `return`:

```
1  'use strict';
2
3  const arr = [1, 2, 3, 4, 5];
4
5  const sum = arr.reduce((a, b) => a + b, 0);
6
7  console.log('Array:', arr);
8  console.log('Sum:', sum);
```

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-   EXAMPLE

Find the Length of Strings in an Array

Let's take an array of strings and use it to create a new array containing the respective lengths of its elements.

```
1  'use strict';
2
3  const arr = ['first', 'second', 'third', 'fourth', 'fifth'];
4
5  const len = arr.map(function(s) { return s.length });
6
7  console.log('Array:', arr);
```

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Now, let's reduce the length of our code using an arrow function:

```
1  'use strict';
2
3  const arr = ['first', 'second', 'third', 'fourth', 'fifth'];
4
5  const len = arr.map(s => s.length);
6
7  console.log('Array:', arr);
```

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-	EXAMPLE

Find Array Elements Greater Than a Value

Let's find all the elements in an array that are greater than **3** and add them to a new array.

```
1  'use strict';
2
3  const arr = [1, 2, 3, 4, 5];
4
5  const greaterThan3 = arr.filter(function(a) {
6      return a > 3;
7  });
8
9  console.log('Array:', arr);
10 
```

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Now, let's reduce the length of our code using an arrow function:

```
'use strict';

const arr = [1, 2, 3, 4, 5];

const greaterThan3 = arr.filter(a => a > 3);

console.log('Array:', arr);
console.log('Elements Greater Than 3:', greaterThan3);
```

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