

Basic Frontend Development | JavaScript

ReDI School of Digital Integration

Welcome Back to week three of the BFD Course!

How Is everyone today?

Lesson Goals

1. Check Attendance and Introduction (~10 Minutes)
2. Check Homework (~10 minutes)
3. Repeat Arrays (~20 minutes)
4. Repeat & Exercise Conditionals (~40 minutes)
5. Repeat & Exercise Objects (~30 minutes)

Attendance Tracking

Quick & Short Introduction

Please say a few words about yourself 😊

What is your coding project? How is it moving forward?

Homework Task from Last Week

Write a program that shows the current day in the body.

Example: "Today is a Thursday"

If you can, use switch!

- > **Did anyone bring chips & cola?** 😊

How many solutions are there?

Repetition: Arrays

Who would like to give a quick repetition?

-> What are arrays?

-> When do you use arrays?

Repetition: Arrays

JavaScript arrays are used to store multiple values in a single variable.

Example:

```
let cars = ['Tesla', 'Volkswagen', 'Audi'];
```

```
let cities = ['Berlin', 'London', 'Paris'];
```

```
let brand = cars[0];
```

Repetition: Working with arrays

```
toString()
```

```
join(' + ')
```

```
pop()
```

```
push('x')
```

```
slice(x, y)
```

```
length
```

1. Removes the last element from an array & returns the value that was removed
2. Adds a new element to an array (at the end) and returns the new array length
3. Returns the amount of elements in an array.
4. Combines all array elements into a string and allows to specify separator.
5. Combines all array elements into a string.
6. Singles out a piece of an array into a new array.
(Question: Are the elements removed from the old array?)

Exercise: Working with arrays

```
toString()
```

```
join(' + ')
```

```
pop()
```

```
push('x')
```

```
slice(x, y)
```

```
length
```

Create an Array of your 5 favorite meals and print them to the body. They should be separated by semicolons. “;”

Repetition: Conditionals – If/else/else if

Who would like to try to give a quick summary?

Repetition: Conditionals – If/else/else if

Who would like to try to give a quick summary?

Repetition: Conditionals – If/else/else if

Who would like to try to give a quick summary?

Theory:

==	
&&	if([...]){ [...] }
===	else{ [...] }
<	
>	else if([...]){ [...] }
<=	
>=	
!	

Example:

```
let a = 5;
let b = 10;
if(a >= b) {
  alert('Sometheing went wrong!');
} else {
  alert('Maths is great!');
}
```

Exercise: Conditionals – If/else/else if

Create a Website, where the users are confronted with a quiz question. (window.prompt) Afterwards let them know whether they were right or wrong. (Either with an alert or in the body)

Repetition: Conditionals – switch

Who would like to try to give a quick summary?

Repetition: Conditionals – switch

Theory:

```
switch( [...] ) {  
    case n:  
        [...]  
        break;  
    case n:  
        [...]  
        break;  
    default:  
        [...]  
}
```

Example:

```
switch (new Date().getDay()) {  
    case 0:  
        day = "Sunday";  
        break;  
    case 1:  
        day = "Monday";  
        break;  
    case 2:  
        day = "Tuesday";  
        break;  
    case 3:  
        day = "Wednesday";  
        break;  
    case 4:  
        day = "Thursday";  
        break;  
    case 5:  
        day = "Friday";  
        break;  
    case 6:  
        day = "Saturday";  
    default:  
        text = "What javascript version are you using?";  
}
```

Exercise: Conditionals – switch

Repeat the Homework Task with Months!

New Conditional Loop: “for – loop”

What could this be? What is a Conditional Loop?

New Conditional Loop: “for - loop”

- Loops can execute a block of code a number of times.
- Loops are handy, if you want to run the same code over and over again, each time with a different value.
- Often this is the case when working with arrays.

Theory:

```
for (statement 1; statement 2; statement 3) {  
    code block to be executed  
}
```

Example: (Question: What is happening?)

```
for (i = 0; i < 5; i++) {  
    text += "The number is " + i + "<br>";  
}
```

Exercise: “for - loop”

Write a for loop that will iterate from 0 to 20. For each iteration, it will check if the current number is even or odd, and report that to the screen (e.g. "2 is even").

Notice: You can check whether a number is even with the following statement
“..if(i % 2 == 0)...

New Conditional Loop: “while - loop”

What could this be?

New Conditional Loop: “while - loop”

What could this be?

- The while loop loops through a block of code as long as a specified condition is true.

Theory:

```
while (condition) {  
    code block to be executed  
}
```

Exercise:

```
var cars = ["BMW", "Volvo", "Saab", "Ford"];  
var i = 0;  
var text = "";  
  
while (cars[i]) {  
    text += cars[i] + "<br>";  
    i++;  
}
```

Exercise: “While - loop”

Remember the IF/ELSE exercise? Can we adjust the question to be asked again, as long as it has not been answered correctly?

Repetition: Objects

What are Objects? What do we use them for?

Repetition: Objects

Objects are Variables Containing many different Variables?

Example:

```
let car = {type:"Tesla", model:"Model S", color:"black"};
```

```
let type = car.type;
```

```
let model = car['model'];
```


New: Objects & Functions

Objects are Variables Containing variables and functions?

```
let car = {type:"Tesla", model:"Model S", color:"black"};
```

```
car.startDriving = function (speed) {  
  window.alert("Your " + this.model + " is now driving with the speed: " + speed)  
};
```



In JavaScript, the thing called **this**, is the object that "owns" the JavaScript code. The value of **this**, when used in a function, is the object that "owns" the function. The value of **this**, when used in an object, is the object itself. Note that **this** is not a variable. It is a keyword. You cannot change the value of **this**.

New: Objects & Functions

Can we turn the quiz question from the for and while exercise into an object? (Use the properties “content, correctAnswer” and the function “checkAnswer”!)

HOMEWORK

Can we add more Quiz Questions into our exercise from earlier?

What would be the best way to do that?

(If you want you can take a look at “Object Constructors” and the “new” Keyword on the internet!)