JAVASCRIPT | DAY 1 | CLASSWORK

Warm-up questions

Discuss with your partner the following questions. Try to be as comprehensive as possible, while providing your opinions for the following questions:

1. Where does Javascript fit in today's web development world?

2. In which industries is it implemented ?

3. What is the main role of JavaScript in the Front-End?

4. Is JavaScript a programming or scripting language?

5. Which tags do you use to enclose JavaScript code?

6. How can you include JavaScript code from another source into your documents? And where do you place it in the HTML?

7. How can you create a comment in JavaScript? On both a single line and multiple lines.

8. What is the JavaScript string concatenation operator?

9. What characters are used to define a JavaScript variable name?

10. What types of data does JavaScript support?

11. What is the difference between variable and array?

Basic Exercises

Exercise 1

Create an internal JavaScript program within an HTML file that accomplishes two things:

- Prints "Hello from the Console" in the browser's console.
- Displays "Hello from the Browser" on the web page.

Exercise 2

Create an HTML document and link it to an external JavaScript file. It has to print the following message in the console "Hi my name is Martin". Modify your JavaScript code by creating a variable named name and assign your own name to it.
Update the console log statement to use this name variable, so it now displays "Hi, my name is [Your Name]".
Create another variable named age and set it to your age.
Modify the console log statement that uses both the name and age variables to display the message "Hi, my name is [Your Name] and I am [Your Age] years old."

Exercise 3

Create an array called players. Add the following names as values to it:

Martin, Thomas, Peter, Mathias and Niki.

Output only the third player in the console. The text should be: "The most valuable player of the match is <third_player_name>".

Intermediate Exercises

Exercise 1

Write a JavaScript program that will sort the following values alphabetically: Tesla, Audi, Renault, Volvo, Mazda, Fiat and Ferrari.

(Use an array to contain these values)

Exercise 2

Create a program where:

1. The first array contains the following fruits:

'apple', 'banana', 'kiwi', 'mango', and 'pear'.

Using different methods, the output should be as follows:

- 'apple', 'banana', 'kiwi', 'mango', 'pear', 'orange'
- 'banana', 'kiwi', 'mango', 'pear', 'orange'
- 'apple', 'banana', 'kiwi', 'mango', 'pear'
- strawberry, 'banana', 'kiwi', 'mango', 'pear'

(Each statement should be outputted on a separate line.)

2. The second array contains the following values:

'monkey', 'horse', 'dog', 'elephant', and 'giraffe'

Using different methods, the output should be as follows:

- 'horse', 'dog', 'elephant', 'giraffe'.
- 'cat', 'horse', 'dog', 'elephant', 'giraffe'
- 'cat', 'horse', 'dog', 'elephant'
- 'cat', 'horse', 'dog', 'elephant', 'tiger'

Sort this array in reverse alphabetical order and display the sorted array in the console

Exercise 3

Create a variable containing the following string:

"mango/cherries/kiwi/grapes/pear/peach/orange/lemon"

Write a program that splits this string into individual fruits and then displays each fruit on a separate line in the web browser:

mango

cherries

kiwi

grapes

pear

peach

orange

Lemon

Advanced Exercise

Exercise 1

Declare five variables:

```
let a = 7;

let b = 14;

let c = "21";

let d = '36';

let e = 42;
```

Sum these variables and store the total in a new variable.

Declare another set of variables:

```
let f = '1';

let g = 15;

let h = 8;

let i = "1";
```

Multiply these variables and store the product in a different variable.

Finally, divide the two results (the sum by the product) that you got from the arithmetic operations and print the result in the web browser.

Exercise 2

Start by declaring an array of people containing these names: “Greg”, “Mary”, “Devon”, and “James”.

let people = [“Greg”, “Mary”, “Devon”,”James”];

Perform the following operations on this array:

1. Remove "Greg" from the array.
2. Add "Matt" to the front of the array.
3. Remove “James” from the array.
4. Add your name to the end of the array.
5. Make a copy of the array using slice. The copy should NOT include "Mary" or "Matt".
6. Using the indexOf method, find the index of where "Mary" is located.
7. Using the indexOf method, find the index of where "Foo" is located (this should return -1).
8. Redefine the people variable with the values you started with.

9. Using the splice command, remove "Devon" from the array and add "Elizabeth" and "Anna". Your array should look like this when you are done ["Greg", "Mary", "Elizabeth", "Anna", "James"].

Exercise 3

From the following multidimensional Array:

[[1, 2, 1, 24], [8, 11, 9, 4], [7, 0, 7, 27], [7, 4, 28, 14], [3, 10, 25, 7], [21, 4, 6, 17], [3, 5, 26, 3]]

Write a program to find and display the numbers 11, 25, 17, 27, and 0 in the console.

Challenge

Exercise 1 | String Manipulation

Structure the following sentence:

"Properties,$a$setofimmutable$values,$are$passed$to$a$component's $renderer$as$properties$in$its $HTML$tag.Acomponent$cannot$directly$modify$any$properties$passedtoit,butcanbepassed$ callback$functions$thatdomodify$values.$This$mechanism's$promiseisexpressedasproperties $flow$down;$actions$flow$up".

The result should be:

"Properties, a set of immutable values, are passed to a component's renderer as properties in its HTML tag. A component cannot directly modify any properties passed to it, but can be passed callback functions that modify values. This mechanism's promise is expressed as properties flow down; actions flow up"

(Commas are also accepted as a division between the words.)