

JAVASCRIPT FUNDAMENTALS

Lecture 5, Week 5

LAST WEEK

- ❑ How JavaScript can change and update both HTML and CSS
- ❑ How JavaScript can calculate, manipulate and update data
- ❑ HTML DOM (Document Object Model)

TODAY

- ❑ JavaScript Syntax
- ❑ JavaScript Variables
- ❑ JavaScript Operators
- ❑ JavaScript Expressions
- ❑ JavaScript Keywords
- ❑ JavaScript Comments

JAVASCRIPT SYNTAX

JavaScript syntax is the set of rules, how JavaScript programs are constructed.

JavaScript Variables

In a programming language, variables are used to store data values.

JavaScript uses the keywords `var`, `let` and `const` to declare variables.

An equal sign is used to assign values to variables.

In this example, `x` is defined as a variable. Then, `x` is assigned (given) the value 6:

```
let x;  
x = 6;
```

JavaScript Operators

JavaScript uses arithmetic operators (`+` `-` `*` `/`) to compute values:

```
(5 + 6) * 10
```

JavaScript uses an assignment operator (`=`) to assign values to variables:

```
let x, y;  
x = 5;  
y = 6;
```

JavaScript Expressions

An expression is a combination of values, variables, and operators, which computes to a value.

The computation is called an evaluation.

For example, `5 * 10` evaluates to 50:

```
5 * 10
```

```
x * 10
```

The values can be of various types, such as numbers and strings.

For example, `"John" + " " + "Doe"`, evaluates to "John Doe"

JavaScript Keywords

JavaScript keywords are used to identify actions to be performed.

The `let` keyword tells the browser to create variables:

```
let x, y;  
x = 5 + 6;  
y = x * 10;
```

The `var` keyword also tells the browser to create variables:

```
x = 5 + 6;  
y = x * 10;
```

JavaScript Comments

Not all JavaScript statements are "executed".

Code after double slashes `//` or between `/*` and `*/` is treated as a comment.

Comments are ignored, and will not be executed:

```
let x = 5;    // I will be executed

// x = 6;    I will NOT be executed
```

Classwork.

Instructions

Create an HTML document, add an heading that reads "A simple calculator" and also, the following to the body:

1. An input element with the following attributes
 `id = "first",`
 `type = "number"`
2. A span element with the content = "+"
3. Another input element with the following attributes
 `id = "second"`
 `type= "number"`
4. A button with the following attribute:
 `id = "equals"`
5. An input element with the following attributes:
 `id ="answer"`
 `readonly = "true"`

Create a JavaScript file and do the following:

1. Create a function called addNumbers.

2. Inside the function,

(i) create a variable called "first".

Set it's value to be equal to the number that is entered in the first input field.

Hint:

Use the document.getElementById method to get the number that is entered in the first input field.

e.g

let xyz = document.getElementById("xyz").value;

(ii) create a variable called "second".

Set it's value to be equal to the number that is entered in the second input field.

(iii) create a variable called "answerBox".

Set it's value to be equal to the answer input field.

(iv) create a variable called sum. See below:

```
let sum = parseInt(first) + parseInt(second);
```

(v) set the answerBox "value" attribute to be equal to the variable "sum".

See below:

```
answerBox.value = sum;
```

(vi) outside the function, add an onclick event listener to the Equals button, bind the addNumbers function to it.

Hint:

```
document.getElementById("buttonId").onclick =  
functionName;
```

3. Inside your html file, add a reference to your javascript file.

ASSIGNMENT 1

Add subtraction, division and multiplication to the simple calculator you created in class today.

ASSIGNMENT 2

1. Create a simple kilogram to pounds converter
2. Create a dollar to naira converter

