**JavaScript Notes**

**What is JavaScript?**

* JavaScript is the Programming Language in used in web development.
* JavaScript is a client-side scripting language, which means the source code is processed by the client's web browser rather than on the web server.
* This means JavaScript functions can run after a webpage has loaded without communicating with the server. For example, a JavaScript function may check a web form before it is submitted to make sure all the required fields have been filled out. The JavaScript code can produce an error message before any information is actually transmitted to the server.
* Like server-side scripting languages, such as PHP, JavaScript code can be inserted anywhere within the HTML of a webpage. However, only the output of server-side code is displayed in the HTML, while JavaScript code remains fully visible in the source of the webpage.
* The programs in this language are called scripts. They can be written right in a web page’s HTML and run automatically as the page loads.
* JavaScript functions can be called within <script> tags or when specific events take place. Examples include onClick, onMouseDown, onMouseUp, onKeyDown, onKeyUp, onFocus, onBlur, onSubmit, and many others.
* JavaScript is able react to user actions, run on mouse clicks, pointer movements, key presses.

**What makes JavaScript unique?**

There are at least three great things about JavaScript:

* Full integration with HTML/CSS.
* Simple things are done simply.
* Support by all major browsers and enabled by default.

**Interaction: alert, prompt, confirm**

The <script> tag contains JavaScript code which is automatically executed when the browser processes the tag.

1. **Arlet**

alert("Hello");

The mini-window with the message is called a modal window. The word “modal” means that the visitor can’t interact with the rest of the page, press other buttons, etc, until they have dealt with the window. In this case – until they press “OK”.

1. **Prompt**

* The function prompt accepts two arguments

result = prompt(title, [default]);

* It shows a modal window with a text message, an input field for the visitor, and the buttons OK/Cancel.
* Title : The text to show the visitor.
* Default : An optional second parameter, the initial value for the input field.

**Variables**

* A variable is a “named storage” for data. We can use variables to store goodies, visitors, and other data.
* To create a variable in JavaScript, use the let keyword.
* The statement below creates (in other words: declares) a variable with the name “message”:

let message;

* Now, we can put some data into it by using the assignment operator =:

let message;

message = 'Hello'; // store the string

* The string is now saved into the memory area associated with the variable. We can access it using the variable name:

**Functions**

* Quite often we need to perform a similar action in many places of the script.
* Functions are the main “building blocks” of the program. They allow the code to be called many times without repetition.
* We’ve already seen examples of built-in functions, like alert(message), prompt(message, default) and confirm(question). But we can create functions of our own as well.

**Function Declaration**

To create a function we can use a function declaration.

function showMessage() {

alert( 'Hello everyone!' );

}

* **Local variables :** A variable declared inside a function is only visible inside that function
* **Outer variables** : A function can access an outer variable as well
* The outer variable is only used if there’s no local one.
* If a same-named variable is declared inside the function then it shadows the outer one
* The main difference between let and var is that scope of a variable defined with let is limited to the block in which it is declared while variable declared with var has the global scope. So we can say that var is rather a keyword which defines a variable globally regardless of block scope