

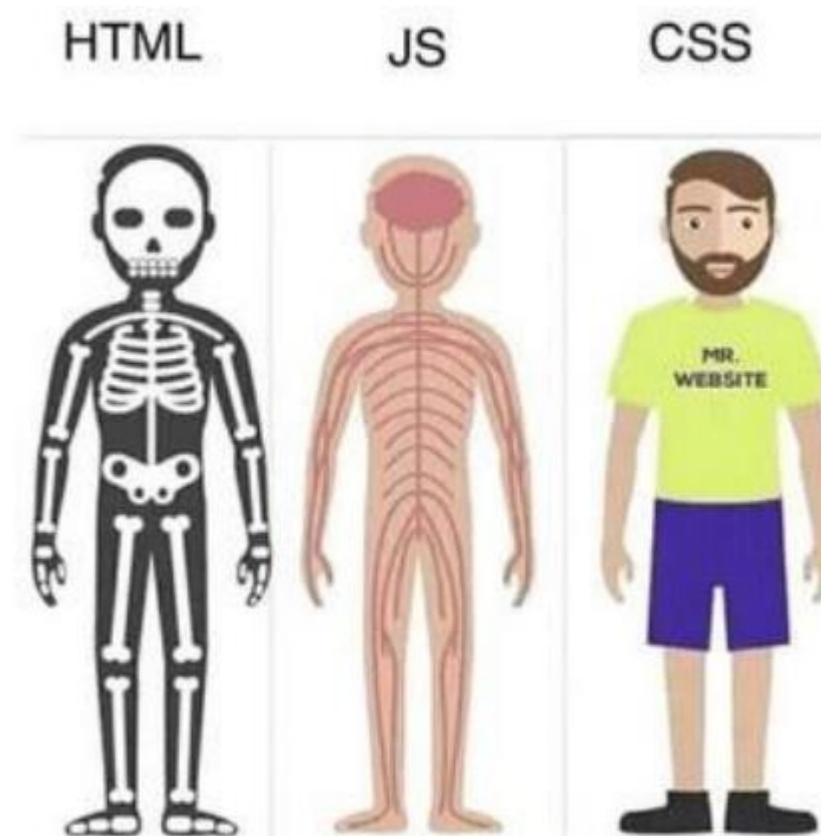
## *ICT-Start – Session 01*

# Module 3: Client-Side Scripting I Creating dynamic web pages

### **A) Getting started with JavaScript**

**December 2022**

# JavaScript



# Demo – JavaScript showcase

# JavaScript – Brief History

- 1995 first release under the name *LiveScript* (NetScape)
- Name was changed to JavaScript (JS) due to a corporation with *Sun Microsystems* (Java)
- Idea: Java for the Web.
- Problem: Too complex, JS should be easy to use for beginners
- JS was not based on Java after all. The name, however, remained.



# JavaScript runs on a Website

- Basic website structure (HTML):

```
<html>
<head>...</head>
<body>
    ...
</body>
</html>
```

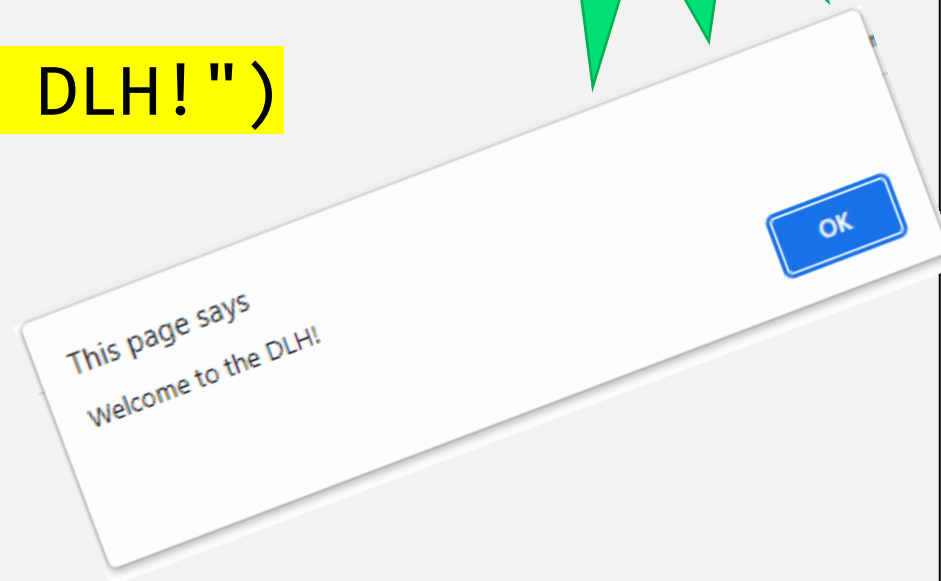
# JavaScript runs on a special place

```
<html>
<head>
    <script>...</script>
</head>
<body>
    ...
</body>
</html>
```

# Basic Output: Alert window

```
<html>
<head>
  <script>
    alert("Welcome to the DLH!")
  </script>
</head>
<body></body>
</html>
```

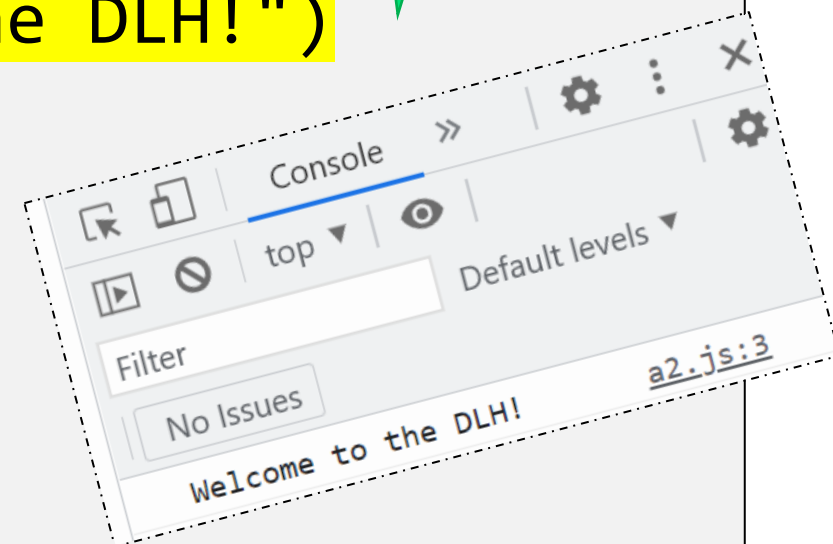
Try it  
yourself!



# Basic Output: developer console

```
<html>
<head>
  <script>
    console.log("Welcome to the DLH!")
  </script>
</head>
<body></body>
</html>
```


Try it  
yourself!





# Basic Input: prompt window

```
<html>
<head>
  <script>
    prompt("Please enter your name:")
  </script>
</head>
<body></body>
</html>
```



Try it  
yourself!

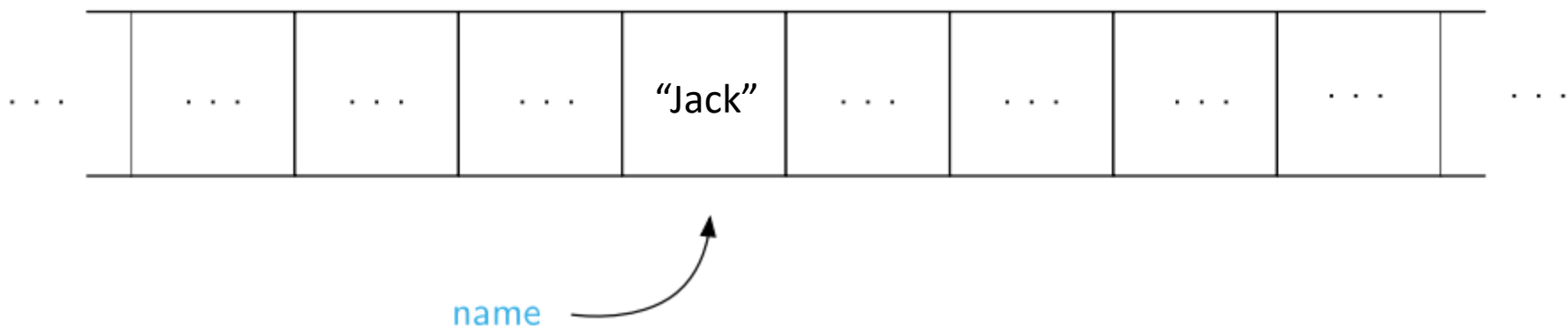


# Exercices


- Solve the first 3 exercises from the Worksheet 1.

# Variables

- Input from the prompt command is lost
- We need to tell the computer to store that information
- This principle is called **Variable**



# Store the input in a variable



Try it yourself!

```
<html>
<head>
  <script>
    var name = prompt("Please enter your name:")
    alert(name)
  </script>
</head>
<body></body>
</html>
```

# Variable datatypes

- Every variable has a datatype
- JavaScript supports many datatypes
- The most common ones are:
  - **Integer:** `var age = 18`
  - **Float:** `var pi = 3.14`
  - **String:** `var name = "Noah"`

# Variable naming rules

- The following rules must be respected:
  - variable names may only begin with a letter, a dollar (\$) or an underscore (\_).
  - the name must not correspond to one of the keywords of JavaScript .
  - the name of a variable must not contain any spaces or special characters except dollar and underscore.
- Which variable declarations are violating the naming rule?

1. `var 1grade = 40`

2. `var "école" = "LCE"`

3. `var var = 42;`

# Variable conventions

- The following two conventions should be respected:
  - The name of a variable should say something about its content. If, for example, a surname is to be stored, the variable should also be named surname.
  - Longer names for variables should be self-explanatory. The so-called **lowerCamelCase** notation: the name begins with a lowercase letter, and each new word begins with an uppercase letter.
  - Examples:
    1. `var speedInKmh = 130`
    2. `var selectedUsername = "Tiger24"`
    3. `var gradeInMath = 14.5`

# Worksheet: *B. Variables*

- Solve the exercises 4-6 from the Session 1 Worksheet.
- Download at <https://dlh.gashi.lu/js1/worksheets/>



# Arithmetics

- If there is one thing a computer can do, then it is...?
- Well, ... **computing with numbers!**
- The following operators are supported for calculations:
  - + for addition
  - - for subtraction
  - \* for multiplication
  - / for division
  - % for modulo division
  - \*\* for exponentiation

# Arithmetics

- Examples

```
> 5+10
```

```
< 15
```

```
> 1234-1000
```

```
< 234
```

```
> 33/3
```

```
< 11
```

```
> 6*55
```

```
< 330
```

```
> 3**4
```

```
< 81
```

```
>
```

# Exercices

- Solve the exercise 7 from the Worksheet 1.


# Arithmetics

- Calculations only work with numbers
- Performing for example the addition operator on strings, then they will be concatenated!

```
> "5"+"3"
< '53'
```

- The command prompt always stores a string, even if we type in a number!
- **Q:** What could we do?

# String to Integer conversion



Try it  
yourself!

```
<html>
<head>
  <script>
    var age = parseInt(prompt("Please enter your age:"))
  </script>
</head>
<body></body>
</html>
```

# String to Float conversion



```
<html>
<head>
  <script>
    var grade=parseFloat(prompt("Please enter your grade:"))
  </script>
</head>
<body></body>
</html>
```

# Exercices

- Solve the rest of the exercises (8-10) from the Worksheet 1.