**COMP 3710 Applied Artificial Intelligence**

**Seminar/Lab 1.**

**Introduction to JavaScript**

1. **Objectives**

* How to use structured programing with JavaScript

1. **Reference**

* JavaScript Tutorial <https://www.w3schools.com/js/default.asp>

1. **Program files**

* .html

<!DOCTYPE html>

<html>

<head>

<!-- support for user interface -->

</head>

<body>

<!-- User interface -->

</body>

</html>

<script>

/\*

\* JavaScript code

\*/

</script>

* Run time environment
  + Web browsers

1. **Comparison to Java**

|  |  |
| --- | --- |
| **JavaScript** | **Java** |
| Script language that does not require compilation | Compilation is required. |
| **No** data type declaration for variables and functions | Data type declaration is required. |
| **No** class (at least in this course) | Classes |
| Functions | Methods |
| Global variables and local variables | Instance variables and local variables |
| **No** main() function |  |
| Keyword **var** is required for variable declaration |  |
| Operators are similar.  ., +, –, /, \*, + (string concatenation), …  Note. JavaScript does not support “integer division”. | |
| Control structures are similar.  if, if-else, for, while, do-while | |

1. **Exercises**

<script>

var x, y;

x = prompt("Please enter a number");

y = prompt("Please enter another number");

document.write(x + y); // + -> string concatenation

document.write("<br>");

document.write(Number(x) + y); // + -> ???

document.write("<br>");

document.write(Number(x) + Number(y)); // + -> ???

document.write("<br>");

var data;

data = **[]**; // empty array; after this you can add elements

var count = prompt("Please enter the number of data to enter");

for (var i = 0; i < count; i++) {

data**[i]** = prompt(i + "th number");

}

var total = sum(data);

document.write("Total = " + total);

document.write("<br>");

document.write(data);

document.write("<br>");

// sort the elements in data, using the new function

// and print data

function sum(data) {

var sum = 0;

for (var i = 0; i < data**.length**; i++)

sum += data[i]; // Is it number addition or string concatenation? Fix it.

return sum;

}

// function to sort the elements in an array, data

</script>

1. **What to do**

* Add the followings into the above program.
  + When read data in the for-loop, and save only positive numbers in the array.
  + A new function that sorts the data in an array. Bubble sorting?
  + Code that sorts data in an array using the above function, and writes the sorted result.
* You can use “Notepad++” for editing.
* How to execute the program? Double clicking.

1. **Submission**
2. You will be given roughly 1 assignment or 2 assignments every week to help you understand all the topics in the lectures. You will submit all the assignments by email. The title of the mail should include your name, id, and COMP 3710.
3. Submission

* Submit the program in 6).
  + - Due
    - 6:00 PM, January 9, 2019 – full marks
    - 6:00 PM, January 10, 2019 – 10% penalty
    - 6:00 PM, January 11, 2019 – 20% penalty
    - Total marks – 5
    - Any further late submission will NOT be accepted.