# Tutorial 3: Amateur JavaScript

# **Objectives**

- Practice JavaScript techniques, including:
  - o variables, conditional,
  - o array and loop,
  - o create and invoke function,
  - o manipulate with DOM elements,
  - 0 ...

## **Tutorial Exercises**

## **Exercise 1: Equation Solver (60 mins)**

Create folder tut03/equations/, with 2 files:

- equations.js: contains js functions to solve linear & quadratic equations
- index.html: the entry point for testing with reference to equations.js

#### **Task 1: Linear Equation**

- Create a function named linear Equation, to solve the linear equation:

$$ax + b = 0$$

- o Input: numbers a, b
- o Output: return roots of the equation as a String
- Test your solver:
  - Open index.html in your browser → "Inspect Element" → in tab Console, run linearEquation (a, b); with a, b are any numbers that you choose & observe the result.

#### **Task 2: Quadratic Equation**

- Create a function named quadratic Equation, to solve the linear equation:

$$ax^2 + bx + c = 0$$

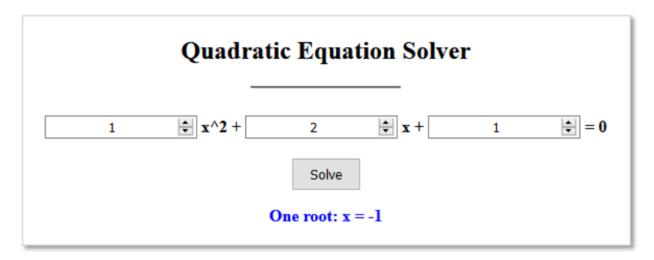
- o Input: numbers a, b, c
- o Output: return roots of the equation as a String

- Test your solver:
  - Open index.html in your browser → "Inspect Element" → in tab Console, run quadraticEquation (a, b, c); with a, b, c are any numbers that you choose & observe the result.

#### Task 3: Quadratic Equation GUI

Create HTML form to get user inputs for **Quadratic Equation**.

- Input fields with ids: **a, b, c** respectively.
- When user click button "**Solve**", get values a, b, c from inputs then invoke function quadraticEquation (created in *Task 2*). Append result string to result view & display.



## **Exercise 2: Browser Extension (15 mins)**

Browser extension:

- Add-on that extends the functionality of the browser
- A piece of JavaScript that is injected into the webpage before or after it has loaded

Read the instruction to develop extension for:

FireFox:

https://developer.mozilla.org/en-US/docs/Mozilla/Add-ons/WebExtensions/Your first WebExtension

OR

- Chrome: https://developer.chrome.com/extensions/getstarted

For example, auto like Youtube video:

document.query Selector('ytd-toggle-button-renderer.ytd-menu-renderer:nth-child(1) > a:nth-child(1)').click();

# **Exercise 3: JavaScript Quiz (15 mins)**

Try the following test to solidify your theory:

Here is the test path: <a href="https://www.w3schools.com/js/js\_quiz.asp">https://www.w3schools.com/js/js\_quiz.asp</a>

Just follow it to challenge yourself individually as fast as possible (You can freely use the internet or any kind of material to find answers).

Remember to capture your score for submission.