

CSE1500 – Web Technology

Assignment Two: Javascript

Learning Activities and Goals

In this assignment, you will be tested on the basic javascript skills you have already learned. This assignment will let you plan and design scripts to enable your application to perform client-side form validation and behavioral tracking.

You need to work on the same project you are currently working on. Changing the project at this stage is not allowed!

PART I: Client-side validation

Upon visiting any well-known website with a registration or login form, you may have noticed that they provide feedback if you need to submit information correctly. For example, the web form will notify you when you leave any field empty or provide an incorrect format for the telephone number, email ID, or password. For example, while setting a new password, you have often come across the following message: "Your password must have one uppercase letter, one symbol, and one number, and it must be between 8 and 30 characters long." These are all examples of form validation.

There are two types of validation: client-side and server-side validation. Validation done in the browser is called client-side validation, while validation done on the server is called server-side validation. In this assignment, we will only focus on client-side validation.

In this assignment, you will write a code to validate form data on the signup page (and other pages) that require user input.

Requirements

Sign up form

- Your sign-up page should include the following information:
- User ID: required and must be of length 5 to 12, must start with a capital letter and end with a number or special character).
- Password: required and at least 12 characters long, but 14 or more is better. A combination of uppercase letters, lowercase letters, numbers, and symbols. Not a word that can be found in a dictionary or the name of a person)
- Name: required and must contain the alphabet only.

- Address: Optional
- Country: required
- ZIP code: for this assignment, your javascript code must validate the Netherlands' postal codes, which have a 6-digit structure, and consist of four numbers and two letters.
- Email: required and must be a valid email ID
- Sex: Required
- Language: required
- About/bio: it is an optional field.

When the user clicks the submit button, the javascript code needs to validate the information and must notify users if any rules are validated in an informative way. You need to display text underneath each field if they are filled correctly (looks good!) or incorrectly ("this is a required field OR user name must start with an uppercase letter etc."). For example, look at the following figure:

First name	Last name	Username
<input type="text" value="Mark"/> ✓	<input type="text" value="Otto"/> ✓	<input type="text" value="@"/> ⓘ
Looks good!	Looks good!	Please choose a username.
City	State	Zip
<input type="text"/> ⓘ	<input type="text" value="Choose..."/> ⓘ ▾	<input type="text"/> ⓘ
Please provide a valid city.	Please select a valid state.	Please provide a valid zip.
<input type="checkbox"/> Agree to terms and conditions You must agree before submitting.		
<input type="button" value="Submit form"/>		

If all rules are satisfied, you need to display the alert() box **with the values** that users have already submitted.

Part II: Behavioral Tracking

In this part of the assignment, you will track users' behavioral data and gather information on your **signup page** using the following measures:

- Track mouse clicks
- Total time spent on the page
- Total key presses for each field
- A total number of characters typed for each field.

The data should be displayed prominently on the page, using a hidden div that is populated and got displayed with the filled values once the user submits the form. Please do not redirect the users to a different page. For example, the data will be displayed at the top of the form as follows:

Number of mouse clicks: 11

Total time spent: 3 minutes and 3 seconds

Total key presses: 17

Total number of characters typed: 71

You are not required to gather behavioral data on other forms.

Deliverables

Signup form

You need to implement the client-side data validation using three methods:

1. Built-in form validation
2. Regular expression (I have not taught this due to time limitations, but they are easier to learn. Look at the w3schools documentation: https://www.w3schools.com/js/js_regexp.asp)
3. **Custom javascript code without built-in features** (Here, you must write pure Javascript code. **Do not copy and paste code from the internet; doing so will cause you to fail all your submitted assignments. Also, using Bootstrap validation classes is not allowed.**)

Please create a folder containing three subfolders containing the respective codes. Name the folders based on the deliverable name (e.g., builtin_form, regular_expression, and custom_JS).

Other forms

Implementing client-side validation for your other forms requiring users to input data would be best. However, you can use any data validation methods for other forms. We will check other forms for completeness purposes. For instance, the system must notify users if they have left any required field empty.

Behavioral tracking script

Please send your script that tracks user data along with a note indicating its location. Make an effort to make this code clear and comment-filled so that we can better understand it.

Assignment submission

1. Please submit your assignment in a **single ZIP** with the name of your project containing all the deliverables. Please create separate folders for each deliverable within the main folder.

2. Also, convert your code and deliverables into a **single PDF file** so that the teaching team can assess them using a software tool.

Good Luck!