Speed Test Project Session 2

In the speed challenge you will prove various skills in a range of small independent tasks.

This is the second session of two. You have exactly 60 minutes to complete as many tasks as possible. The points you score in the speed challenge sessions will be added to your total points of the whole competition.

Your solutions will be automatically marked on a central server in real-time.

> All tasks can be tested by automated tests. To run them, change into their folder (e.g. cd `c3-module-f-speed-challenge-2/task*/`) and execute the command stated in each task under *Expected Result*.

> You can only change existing files in the `c3-module-f-speed-challenge-2/task*/src/` folders (where * is a number). All other files will be reverted for the review process.

Tasks

The tasks do not have to be completed in the given order. Please note that the points awarded per task are relative to their difficulty, meaning hard tasks will give more points than easy tasks.

Task	Difficulty
Task 1 - Javascript: Array Unique	easy
Task 2 - CSS Selectors	easy
Task 3 - PHP: Validation	easy
Task 4 - Accessibility	medium
Task 5 - PHP: Image Thumbnail	medium
Task 6 - Regex	medium
Task 7 - HTML / CSS	hard

Task 1 - JavaScript: Array Unique

Given some array, only return elements in an array that are unique by a given property name.

The order of the elements returned is the same as the given input. The uniqueness should be checked with strict equality (no type coercion).

Working directory:

Implement the empty function in: `c3-module-f-speed-challenge-2/task1/src/uniqueBy.js` . You are not allowed to change any other file.

Expected result:

`npm test` runs successfully in the `c3-module-f-speed-challenge-2/task1/` folder.

Task 2 - CSS Selectors

Select the rainbow marbles. Use the file `c3-module-f-speed-challenge-2/task2/src/task.css` to write your selectors. In `src/task.html` you will see the actual marbles as HTML elements.

`#task-0` is provided to you as an example.

You are only allowed to use **1 selector per task:**

- Allowed: `#task-1 .marble {...}`
- Not Allowed: `#task-1 .blue, #task-1 .red {...}`

Rules:

- The selector must begin with the task ID e.g. `#task-1`
- You are not allowed to edit the HTML.
- You are not allowed to use the data-target attribute for your selector.
- You are not allowed to use any of the following selectors:
    - `:nth-child`
    - `:nth-last-child`
    - `:nth-of-type`
    - `:nth-last-of-type`
    - any use of `+` or `~`

Working directory:

Write the missing CSS selectors in: `c3-module-f-speed-challenge-2/task2/src/task.css`. You are not allowed to change any other files.

To see the CSS selector targets visually, you can open `task.html` in your browser.

Expected result:

`npm test` runs successfully in the `c3-module-f-speed-challenge-2/task2/` folder.

Task 3 - PHP: Validation

Implement the validation methods in the provided validator class. The following validation rules have to be implemented:

- `startsWith`
- `between`
- `dateAfter`

Working directory:

Implement the methods in: `c3-module-f-speed-challenge-2/task3/src/Validator.php`. You are not allowed to change any other files.

Expected result:

`composer test` runs successfully in the `c3-module-f-speed-challenge-2/task3/` folder.

Task 4 - Accessibility

You are provided with a web page that contains some accessibility problems. It is your task to fix them. You are allowed to change the HTML and CSS of the page. Your changes should not alter the visual appearance in any way.

Working directory:

Fix the violations in: `c3-module-f-speed-challenge-2/task4/src/` . You are only allowed to change the `index.html` and `style.css` files.
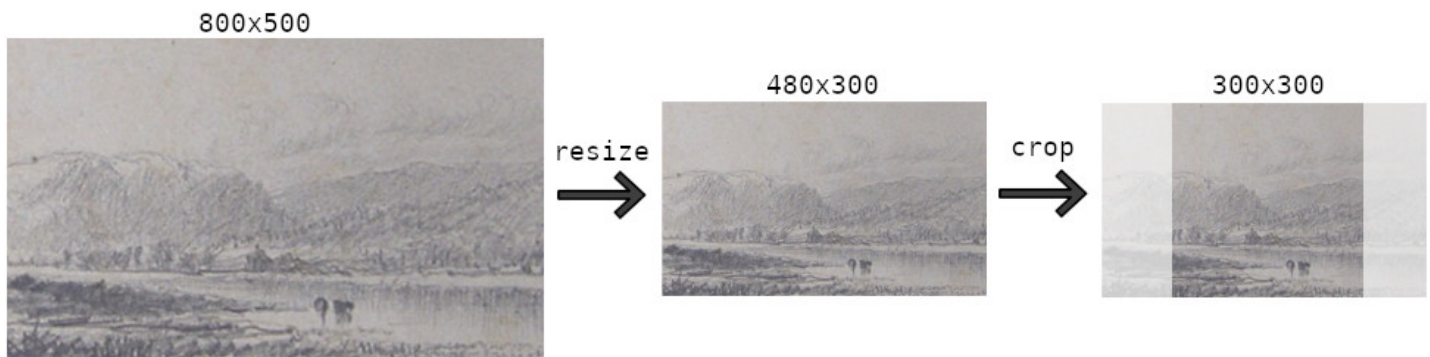
Expected result:

The Cypress tests started with `npm start` are fulfilled.

Task 5 - PHP: Image Thumbnail

Your task is to create a thumbnail for a given image. This includes resizing, cropping and adding a watermark.

The following illustration shows how an image should be resized and cropped into a 300x300 thumbnail.

To run the task locally, execute `php -S localhost:8080` within the task folder and open `http://localhost:8080/src/demo.html` . On this page, you see the expected images and the ones your implementation generates as a comparison.

Working directory:

Implement the method in: `c3-module-f-speed-challenge-2/task5/src/ImageThumbnail.php` . You are not allowed to change any other files.

Expected result:

`composer test` runs successfully in the `c3-module-f-speed-challenge-2/task5/` folder.

Thumbnails generated by tests are stored within the `tests/images/test-results/` directory.

Task 6 - Regex

Write regular expressions (Regex) that match a set of strings and skip a set of string. Your regex must not be longer than the given limit.

Working directory:

Write the expressions in: `c3-module-f-speed-challenge-2/task6/src/regex.js` . You are not allowed to change anything in the file except the Regex itself or any other file.

Expected result:

`npm test` runs successfully in the `c3-module-f-speed-challenge-2/task6/` folder.

Task 7 - HTML / CSS

Your task is to finish writing the CSS for a news site.

Within the task folder you will find:

- `index.html` Do not edit this file
- `style.css` Modify this file until it passes the tests

Your task is to modify the CSS to make the page have the following layout:

Additional requirements:

- The webpage always uses exactly the **full window height & width** (scrollbars are never visible)
- All margins/spacings are exactly `12px`

Working directory:

Write the missing CSS declarations in: `c3-module-f-speed-challenge-2/task7/src/style.css` . You are not allowed to change any other files.

Expected result:

The Cypress tests started with `npm start` are fulfilled.