

CMPS 350 - Web Development Fundamentals

Lab 07 - Client-side JavaScript

Objective

- DOM access, traversal, and update.
- Event handler/listener definition and usage.
- Fetch API usage.

Resources

- [Introduction to the DOM](#)
- [Introduction to events](#)
- [Using the Fetch API](#)

Create a sub-directory named `lab7-client-js` in your repository to organize the code produced for this lab.

1. Tasks Tracker app

The goal of this exercise is to develop a Tasks Tracker web app that manages a list of tasks. The user can add, complete, and delete tasks. The user interface design is shown in [Figure 1](#).

1. Create a new folder named `tasks-tracker-app` under `lab7-client-js` and open it in Code.
2. Use an array to keep track of the list of tasks and render them whenever it is updated.
3. Handle adding, completing, and deleting a task.
 - 3.1. Tasks should have unique non-empty titles, i.e., a duplicate task or a task lacking a title should not be added.

2. Country Explorer app

This goal of this exercise is to develop a Country Explorer web app that allows the user to select a given country and displays the corresponding facts. The user interface design is shown in [Figure 2](#).

1. Create a new folder named `country-explorer-app` under `lab7-client-js` and open it in Code.
2. Use countries Web API to fetch all countries and their facts data from <https://restcountries.com/v3.1/all>.
 - 2.1. Extract the regions and use them to populate the corresponding `select` element.
 - 2.2. Use an object to keep track of the hierarchy of regions, subregions, countries, and facts.

```
const hierarchy = {
  "Africa": {
    "Eastern Africa": {
      "British Indian Ocean Territory": {
        ...
      }
    }
  }
}
```

```

    },
    "Burundi": {
        ...
    },
    ...
},
...
},
...
};

```

Note that some countries do not have a subregion defined.

3. Add event listeners to handle end-user selection updates.
 - 3.1. When changing the region, the list of subregions should be updated.
 - 3.2. When changing the subregion, the list of countries should be updated.
 - 3.3. When changing the country, the table of facts should be updated.

3. Photo Gallery app

The goal of this exercise is to develop a Photo Gallery application that fetches several random photos on demand and displays them in a gallery. The user interface design is shown in [Figure 3](#).



1. Create a new folder named `photo-gallery-app` under `lab7-client-js` and open it in Code.
2. Add a button that fetches random photos from Lorem Picsum API <https://picsum.photos/v2/list> and adds them to an array of photos.
3. Use the RAM pattern to render the photos in a grid.
4. Allow the user to remove a photo by clicking on it.

Additional Resources

- The modern JavaScript tutorial: <https://javascript.info>
- Eloquent JavaScript: <https://eloquentjavascript.net>
- MDN JavaScript: <https://developer.mozilla.org/en-US/docs/Web/JavaScript>

Task Tracker



Task 1	<input type="checkbox"/>	
Task 2	<input checked="" type="checkbox"/>	
Task 3	<input type="checkbox"/>	
Task 4	<input checked="" type="checkbox"/>	
Task 5	<input type="checkbox"/>	




Figure 1: Tasks Tracker

Country Facts Explorer

Region

Subregion

Country

Facts about British Indian Ocean Territory



Official Name	British Indian Ocean Territory (إقليم المحيط الهندي البريطاني)
Capital City	Diego Garcia
Population	3,000
Languages	English
Currencies	USD
TLD	.io

Figure 2: Country Facts Explorer

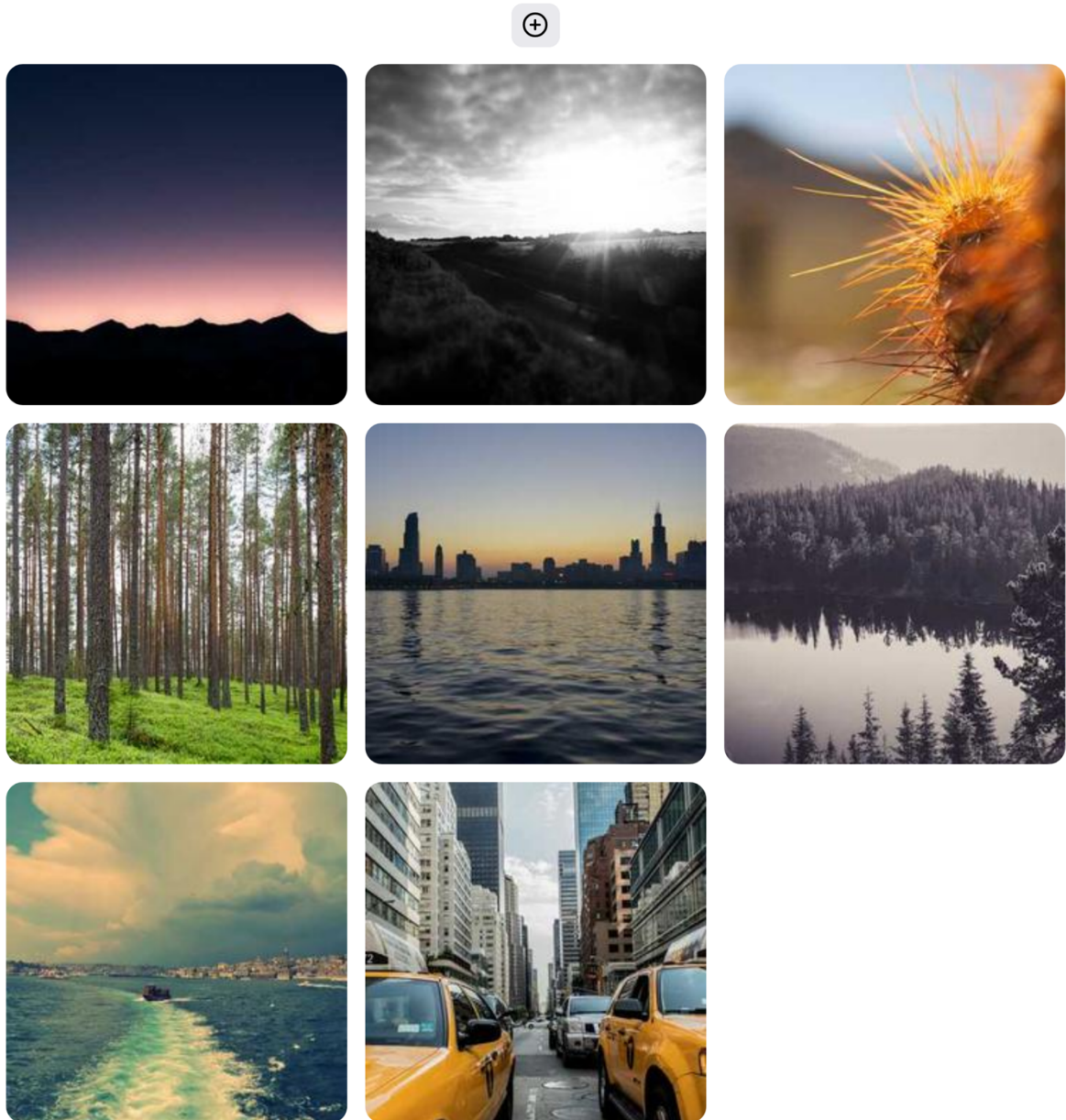


Figure 3: Photo Gallery