CMPS 350 · Web Development Fundamentals

Lab 10 · Forms and Client-side Components

Objective

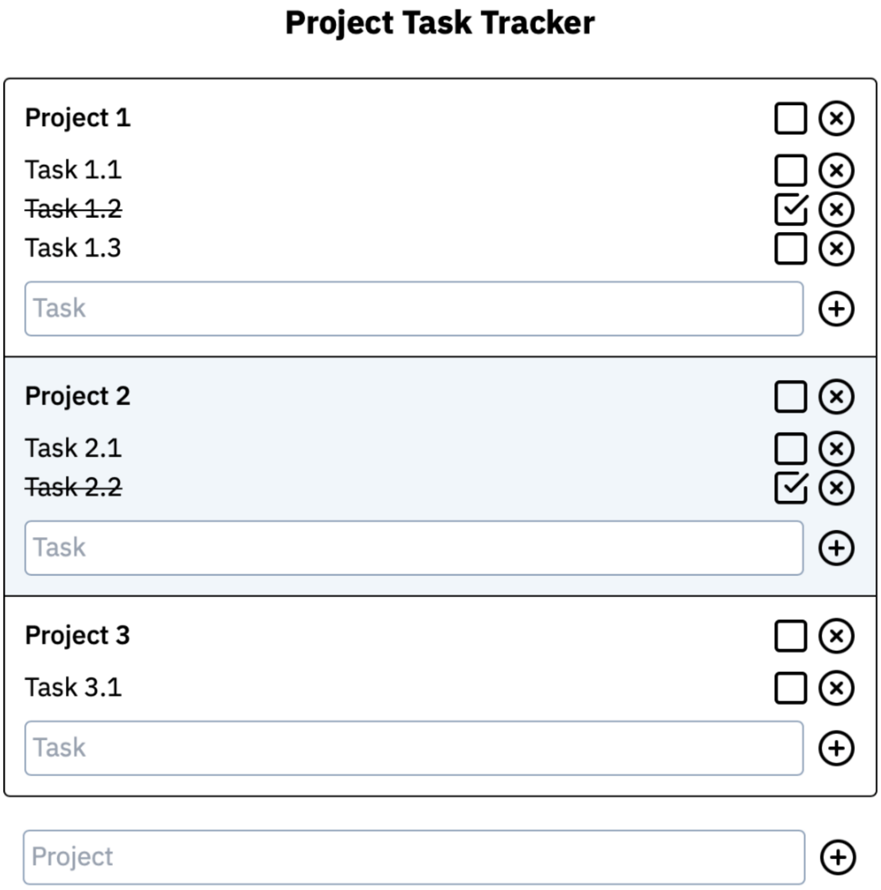
- Using hooks and handling client-side events.
- Using forms including one-to-many scenarios.
- Uploading one or multiple files.
- Conditional rendering.
- Site generation: SSR, SSG, and ISR.

Resources

- Learn React: https://react.dev/learn
- React docs: https://react.dev/reference/react
- Next docs: https://beta.nextjs.org/docs/getting-started
- Tailwind CSS docs: https://tailwindcss.com/doc

> We will be using Tailwind CSS to quickly style our user interfaces. It can be automatically included and configured when creating your Next applications.

1. Project Task Tracker Application



Project Task Tracker

Project 1 □ ⊗

Task 1.1 □ ⊗

~~Task 1.2~~ ☑ ⊗

Task 1.3 □ ⊗

Task ⊕

Project 2 □ ⊗

Task 2.1 □ ⊗

~~Task 2.2~~ ☑ ⊗

Task ⊕

Project 3 □ ⊗

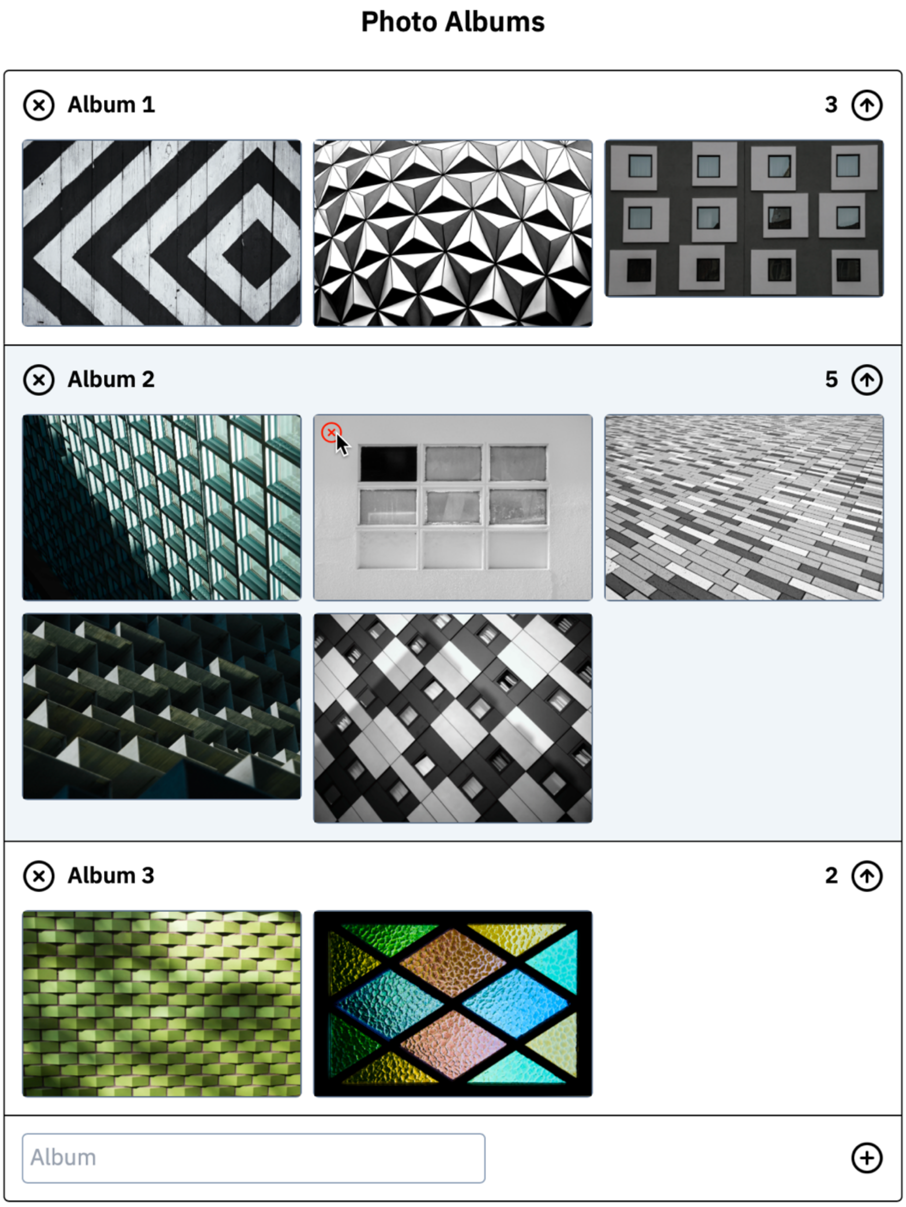
Task 3.1 □ ⊗

Task ⊕

Project ⊕

1. Extend the Task Tracker application to manage multiple projects with each project having multiple tasks. The base code is provided.
2. The user can add, complete, and delete tasks per project. They can also add, complete, and delete projects.
3. Projects have unique titles and tasks have unique titles within a project.
4. Handle creating new projects and tasks by pressing the `Enter` key.
5. A project should be marked as completed when all its tasks have been marked as completed.
6. Marking a project as un/completed should mark all its tasks as un/completed.
7. An interactive demo of this exercise is available at https://cmps350-project-task-tracker.vercel.app.

2. Photo Albums Application



Design and implement an application that allows the user to create albums and upload photos for each album. The user can also view the list of albums and their associated photos.

1. Design, implement, and test a web API for reading, creating, updating, and deleting albums and their associated photos. Each album has a non-empty title. An example album object is shown below. You may start by using public photo URLs from https://www.pexels.com or https://unsplash.com.

   ```
   {
     id: "V1StGXR8_Z5jdHi6B-myT",
     title: "Summer Vacation",
     createdAt: "2023-02-25T00:00:00.000Z",
     photos: [
       "https://images.pexels.com/photos/712395/pexels-photo-
       712395.jpeg?auto=compress&cs=tinysrgb&w=1260&h=750&dpr=2",
       "https://images.pexels.com/photos/914929/pexels-photo-
       914929.jpeg?auto=compress&cs=tinysrgb&w=1260&h=750&dpr=2",
     ],
   }
   ```

2. Design, implement, and test a web page for viewing, creating, updating, and deleting albums and their associated photos. Display the number of photos per album and use a RAM layout for displaying the photos.
3. Design, implement, and test a web API for uploading one or many photos, as well as deleting one or many photos.
4. Extend the albums page to allow uploading and deleting photos from an album.
5. An interactive demo of this exercise is available at https://cmps350-photo-albums.vercel.app.

3. Country Facts Explorer using SSR, SSG, and ISR

1. Reimplement the Country Facts Explorer application using React and Next. The base code is provided.
2. Use a dynamic route with a slug, `[[...slug]]`, to handle routing and navigation.
3. Implement the `generateStaticParams` function to generate paths for all countries.
4. Apply different rendering methods, SSR, SSG, and ISR, to render the facts for every country.
5. Build your application using '`npm run build`' then start it using '`npm run start`'. Take note of the observed differences.
6. An interactive demo of this exercise is available at https://cmps350-country-facts.vercel.app.

Africa Americas Antarctic Asia Europe Oceania

Central Asia Eastern Asia South-Eastern Asia Southern Asia Western Asia

Armenia Azerbaijan Bahrain Georgia Iraq Israel Jordan Kuwait Lebanon Oman Palestine Qatar Saudi Arabia Syria Turkey United Arab Emirates Yemen

Facts about Qatar

Official Name	State of Qatar (دولة قطر)
Capital City	Doha
Population	2,881,060
Area	11,586km²
Languages	Arabic
Currencies	QAR
TLD	.qa, قطر.