CMPS 350 Web Development Fundamentals
Lab 9 – Web Pages using Next.js and React

Objective

The objective of this lab is to practice implementing Web Pages and calling Web API using Next.js, including:

- Next.js routing
- Implement components, pages, and layouts
- Compose smaller components to build larger UI components
- Use useState react hooks in client-side components
- Pass data between components using props
- Handle events in client-side components

This lab has 2 parts:

- **Part A**: Extend the **BankApp** to make the app functionality accessible via HTML pages placed under the `public` folder.

  Then enhance the **BankApp** to make more modular and simpler using React Components and Next.js Web pages.

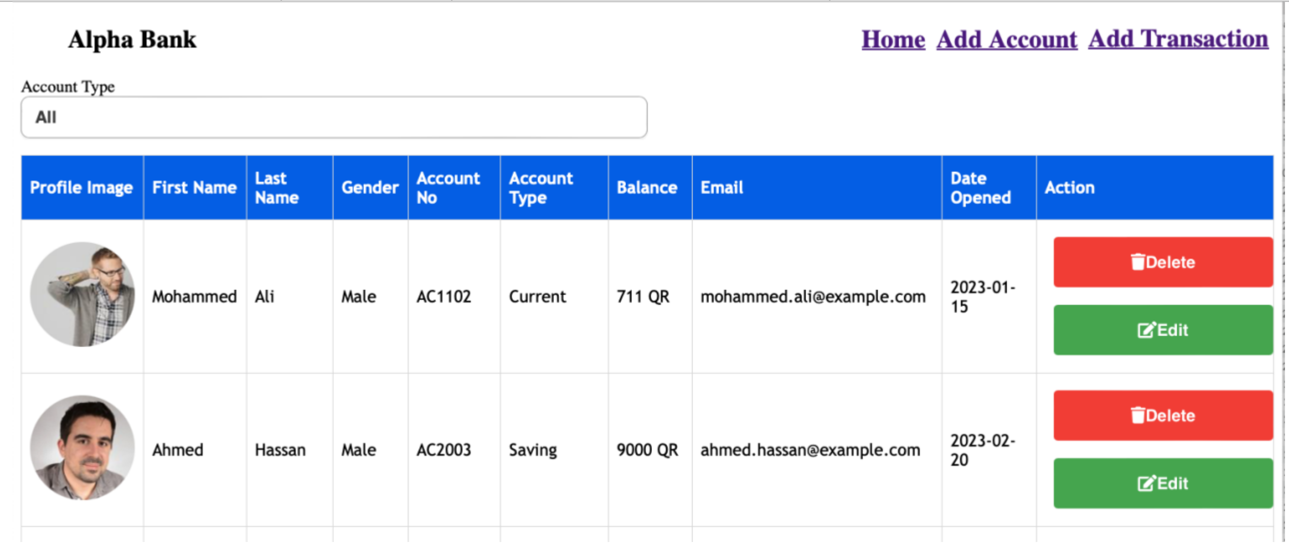
- **Part B**: Extend the **TodoApp** to make the app functionality accessible via Web pages using Next.js

Part A - Bank App

1. Copy **`lab9-web-pages`** folder from the lab repo to your repository.
2. Open the **bank-app** subfolder in VS Code. Then run **`npm install`** to install the packages. Finally, run the application using **`npm run dev`** to test if everything works properly.
3. Modify the html pages available under the **`public`** folder to make them dynamic by using the bank API developed in the previous Lab.
4. Develop React Components and Next.js Web Pages to make the app UI more modular.

Components	Web API HTTP Verb	Web API to use	UI functionality
`AccountList`	GET	/api/accounts/:acctType	`AccountList` displays a list of accounts. The accounts pages should get the list of accounts and pass them to the `AccountList` to display them. This page should also provide a dropdown to enable filtering the

			accounts by Type (i.e., ‘Saving Account’, ‘Current Account’ or ‘All’). Note that the accounts page should be the main app page (i.e., the first page to be shown when the user visits the app).



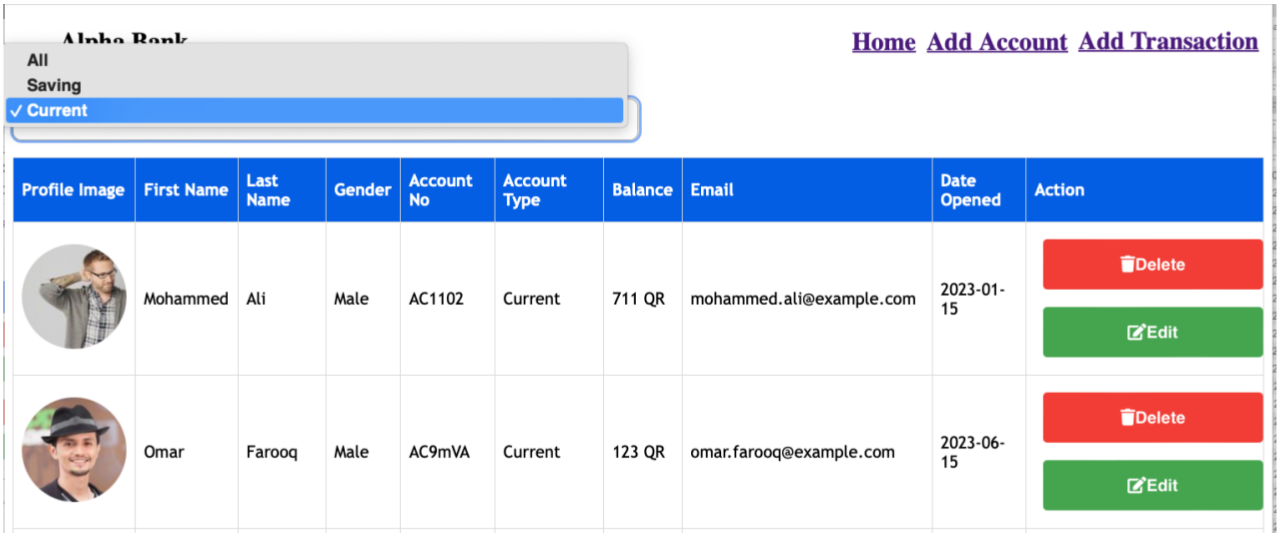
Alpha Bank

Home Add Account Add Transaction

Account Type

All

Profile Image	First Name	Last Name	Gender	Account No	Account Type	Balance	Email	Date Opened	Action
	Mohammed	Ali	Male	AC1102	Current	711 QR	mohammed.ali@example.com	2023-01-15	Delete Edit
	Ahmed	Hassan	Male	AC2003	Saving	9000 QR	ahmed.hassan@example.com	2023-02-20	Delete Edit

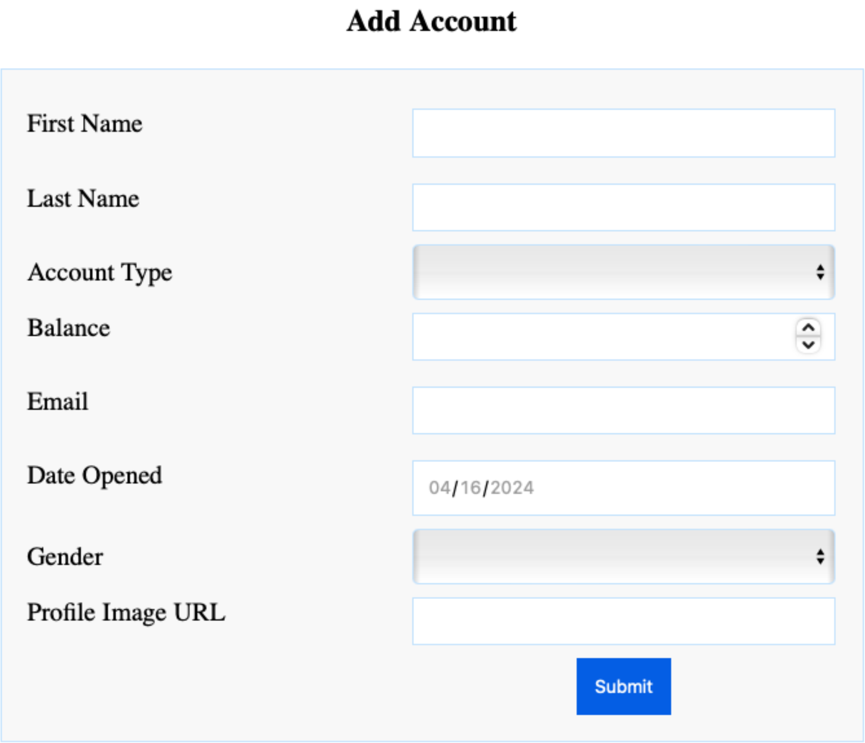


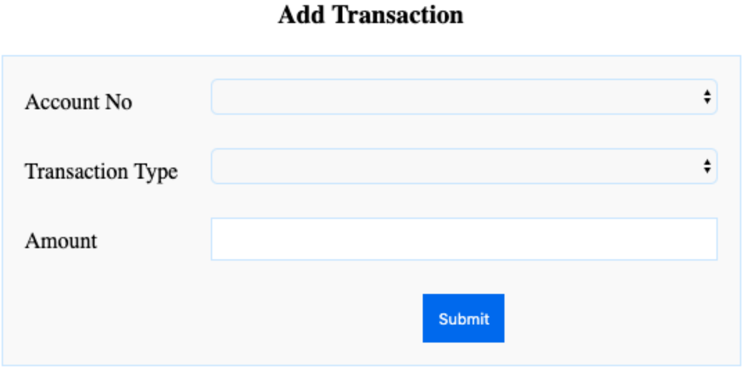
Alpha Bank

Home Add Account Add Transaction

Profile Image	First Name	Last Name	Gender	Account No	Account Type	Balance	Email	Date Opened	Action
	Mohammed	Ali	Male	AC1102	Current	711 QR	mohammed.ali@example.com	2023-01-15	Delete Edit
	Omar	Farooq	Male	AC9mVA	Current	123 QR	omar.farooq@example.com	2023-06-15	Delete Edit

`AccountEditor` Component	POST	/api/accounts	Allows creating a new account.

 **Add Account** First Name Last Name Account Type Balance Email Date Opened 04/16/2024 Gender Profile Image URL Submit			
In **`AccountList`** component, provide a **Delete** button besides every account with balance=0	DELETE	/api/accounts/:id	Allows deleting an account by id from both the server-side and the accounts html table
In **`AccountList`** component, provide **Edit** Button next to every account	PUT	/api/accounts/:id	Allows updating the account owner details in both the server-side and the accounts html table. The update form should reuse the Account Editor component but the account number, type and balance should not be editable.

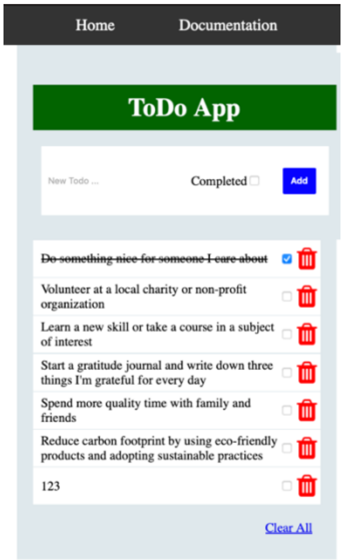
`Account Transaction` Component	POST	/api/accounts/:id/trans	Allows creating account transaction by selecting a particular account from a dropdown then submitting a deposit or withdrawal transaction. This form should display the new account balance after successfully adding the transaction. Otherwise, it should display any error returned from the Web API (e.g., insufficient balance).
 **Add Transaction**			
In **`AccountList`** component, provide **Trans** Button next to every account	GET	/api/accounts/:id/trans	Gets and displays the transactions for a particular account.
Create **`Header`** component to display the bank Logo and a Welcome message as well as the Navigation menu. Create a **Footer** component to display a copyright message an link to facebook page. Add a layout file to ensure the Header and Footer are displayed on every page.			

All the app pages should be accessible from the index.html page.

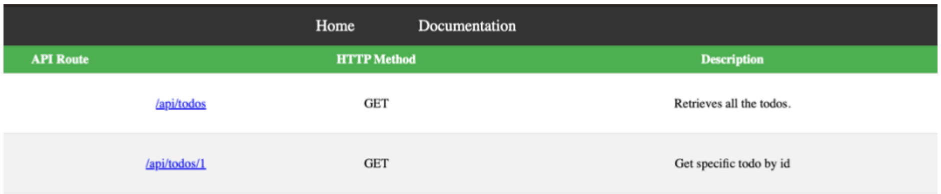
5. Test the Bank App Web UI and provide screenshots as evidence in the testing document.

Part B - TodoApp

1. Open the **`todo-app`** folder in VS Code. This folder contains the app that you created in Lab 7 using plain JavaScript.
2. Install the necessary packages by running **`npm install`**, then start the development server by running **`npm run dev`**. Test the provided backend Web API using Postman.
3. Develop React Components and Next.js Web Pages to allow users to access the application functionalities, including:
   - View a list of all the todos
   - Add, update, delete todos
4. Add a navigation bar that allows the user to navigate to a **`documentation`** page that lists all the available Web API of the current application.



- ~~Do something nice for someone I care about~~ ☑
- Volunteer at a local charity or non-profit organization □
- Learn a new skill or take a course in a subject of interest □
- Start a gratitude journal and write down three things I'm grateful for every day □
- Spend more quality time with family and friends □
- Reduce carbon footprint by using eco-friendly products and adopting sustainable practices □
- 123 □



API Route	HTTP Method	Description
/api/todos	GET	Retrieves all the todos.
/api/todos/1	GET	Get specific todo by id

5. Test the **TodoApp** Web UI

After you complete the lab, push it to your Github repo.