



ADVANCED WEB APPLICATIONS FINAL PROJECT

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1.0 Introduction

This is the documentation of the final project of the course CT30A3204 Advanced Web Applications which was conducted by LUT University.

1.1 Overview

This is a project management system which uses Kanban board. The system is a web application built using React and Node.js

2.2 Technology Choices

1.2.1 Front End

Technology	Description
React with Vite	React is JavaScript framework and Vite is a tool that can be used for client-side applications.
Tailwind CSS	Tailwind CSS is a CSS framework.
TypeScript	Using TypeScript, you can apply types to JavaScript and thus enable you to create which has less errors.
daisyUI	daisyUI is the Tailwind CSS plugin.
Axios	Axios is a promise-based HTTP Client for node.js and the browser.
React Router	Does client-side routing in a React app
validator.js	Used to validate user input

2.2.2 Back End

Technology	Description
Node.js	Using Node.js you can run JavaScript on the server.
TypeScript	Using TypeScript, you can apply types to JavaScript and thus enable you to create which has less errors.
Express	Express is a Node.js framework
Mongoose	Mongoose is an ODM (Object Data Modeling) library for MongoDB and Node.js
express validator	Helps to validate and sanitize user inputs
Bcrypt	Bcrypt is used to hash passwords with a salt

3. Features

3.1 Registration

- Non-authenticated users can register
- Client-side and server-side validation is used
- Check user already exists.

3.2 Login

- Kanbanboard can be accessed only for authenticated users.
- Backend validation is used when authentication.

3.3 Authorization

- JWT (JSON Web Token) authorization is used.

3.4 Add/ Remove Columns

Authenticated users can Add/Remove columns of their own board.

3.5 Add Remove Cards

Authenticated users can Add/Remove cards of their own board.

3.6 Logout

4. Installation

1. Get the source from github (<https://github.com/nuwaninfo/kanban-board>) by cloning or downloading.
 2. Go to the root folder.
 3. Run “npm install”. This will download all the node modules inside root, client and server folders.
 4. Run “npm run dev”. This will start both the client and the server concurrently. Server will run on port 8000.
 5. Open a browser and type <http://localhost:3000/> in the address bar. The application will load on the browser. Client application will run on port 3000.
- Note: Mongo DB should be already installed in the same machine

5. User Manul

Follow the steps below to use the kanban board.

5.1 User Registration

1. Click Register Link at the top right corner of the page. It will direct you to the Registration form (Figure 1). In the registration form you should
 - Enter your email.
 - Provide a strong password.
 - Retype the password.

Note: Password should contain at least 8 characters. Should have minimum 2 lowercase characters, minimum 1 uppercase character, minimum 2 numbers, and minimum 2 symbols.

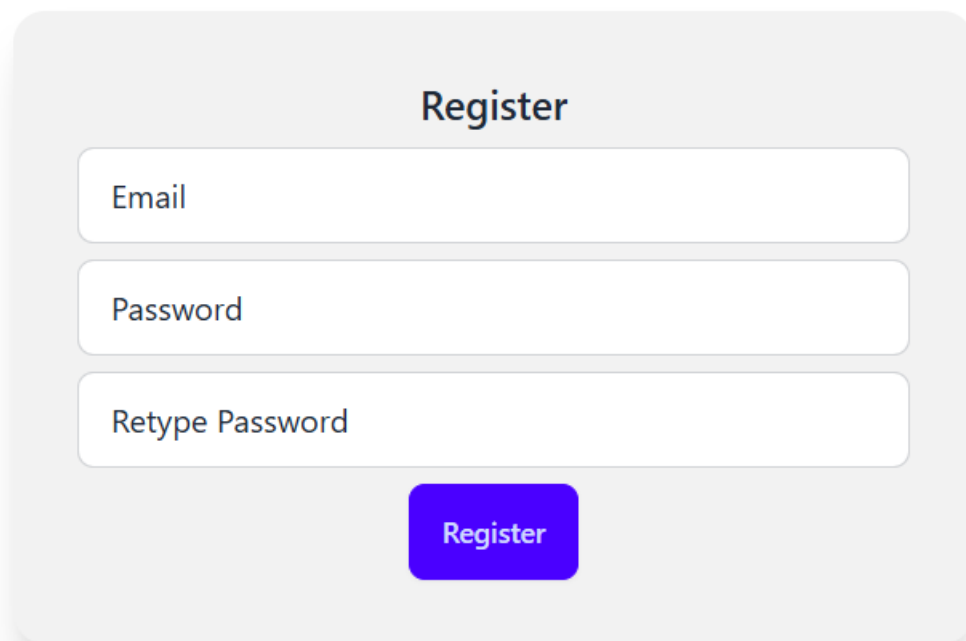
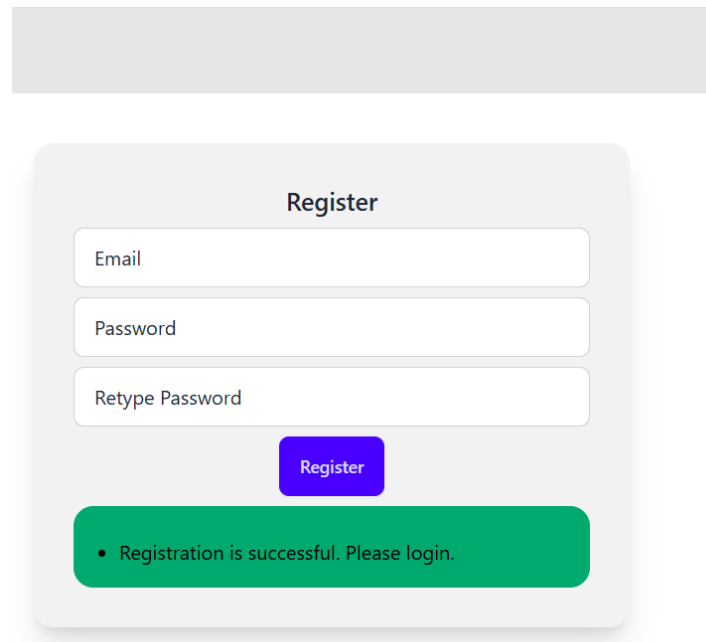
The image shows a registration form titled "Register" in a bold, dark font. Below the title are three input fields: "Email", "Password", and "Retype Password". Each field is a white rectangle with a light gray border. At the bottom of the form is a blue button with the word "Register" in white text. The entire form is set against a light gray background with rounded corners.

Figure 1: Registration Form

2. Successful Registration will ask you to log in (Figure 2).

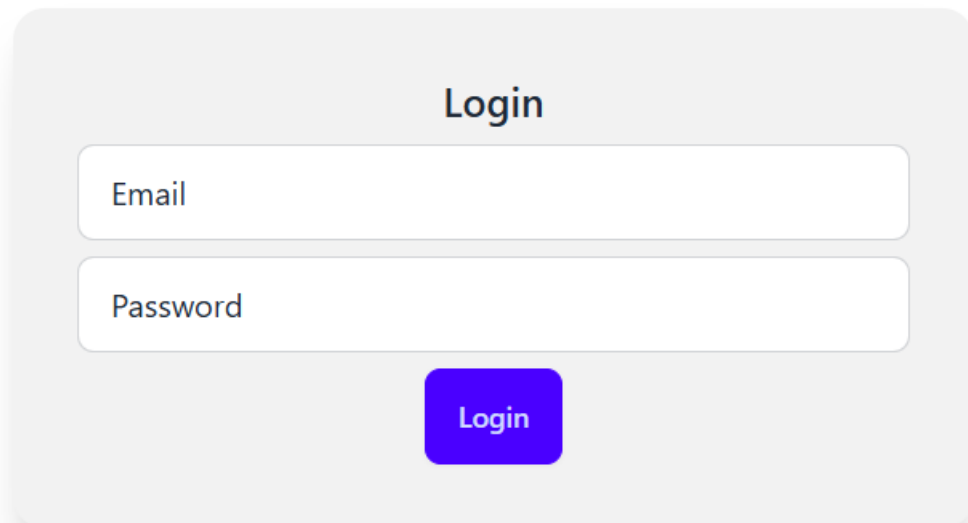


The image shows a 'Register' form within a light gray rounded rectangle. At the top, the word 'Register' is centered. Below it are three input fields: 'Email', 'Password', and 'Retype Password'. A blue 'Register' button is positioned below the input fields. At the bottom, a green rounded rectangle contains a success message: '• Registration is successful. Please login.'

Figure 2: Login Successful

5.2 User Login

1. Upon Successful registration, User can log in to the system using the “Login” Link at the top right corner of the page. It will Open the Login Form (Figure 3)



The image shows a 'Login' form within a light gray rounded rectangle. At the top, the word 'Login' is centered. Below it are two input fields: 'Email' and 'Password'. A blue 'Login' button is positioned below the input fields.

Figure 3: Login Form

2. Type the registered email and password in step 5.2 and click the “Login” button.
Home page will be displayed (Figure 4).

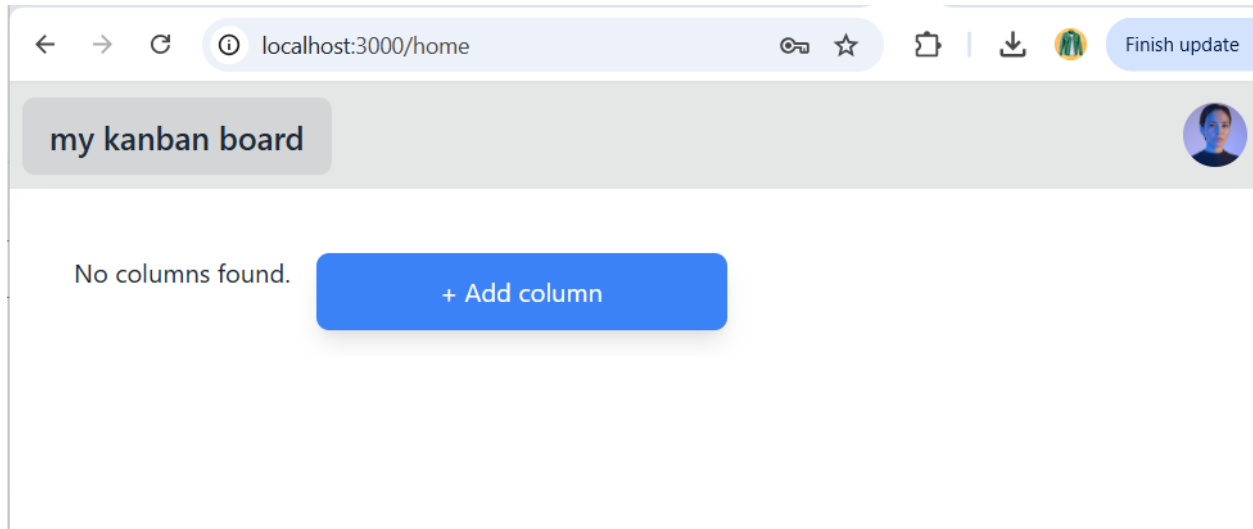


Figure 4: Home Page

5.3 Add Column

Initially the necessary Columns should be added to the board. It can be done with Add Column button on the home page.

1. Click “Add Column” button in Home Page (Figure 4)
2. Pop-up will display to enter the column name (Figure 5).

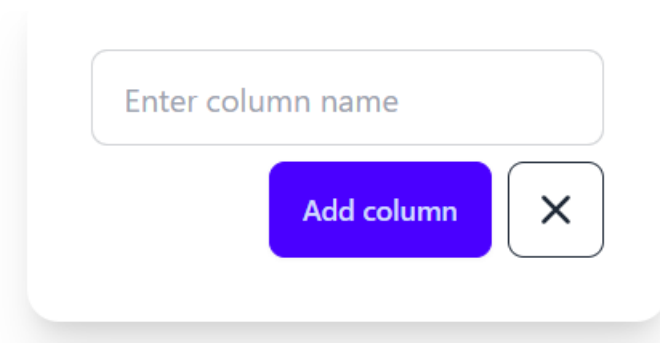


Figure 5: Add Column

3. Type a name for the column and click “Add Column” button.
4. The added columns will display on the board.

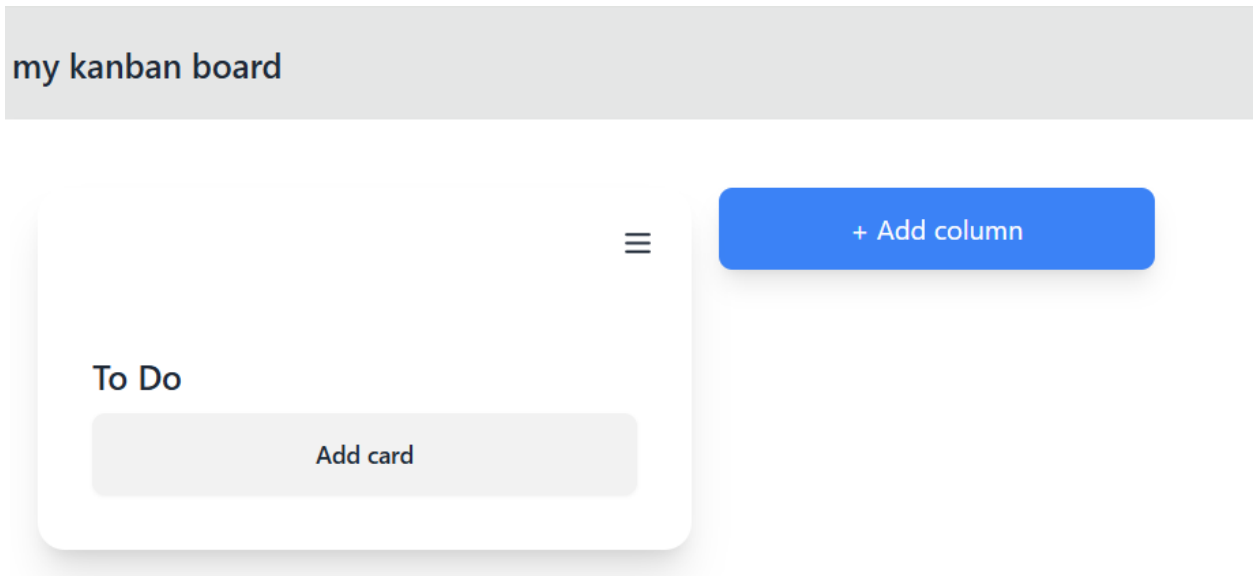


Figure 6: One Column

5. Repeat steps 1 to 3 to add enough columns to the board. A sample board with the columns will be displayed in Figure 7.

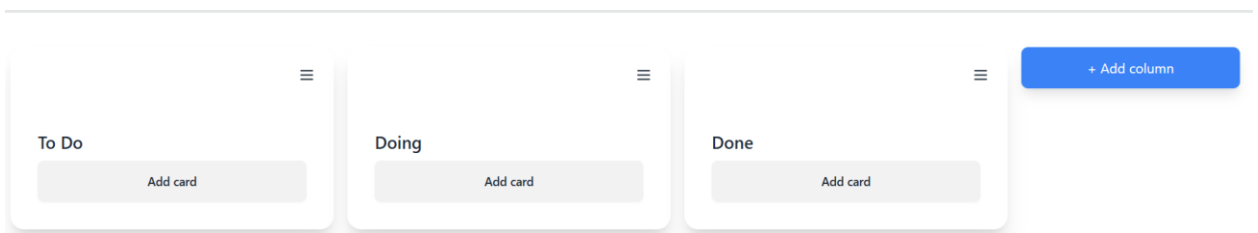


Figure 7: Multiple Columns Board

5.4 Delete Column

1. Click the three lines at the top right corner of the column you want to delete (Figure 8). The “Delete” link will be displayed.

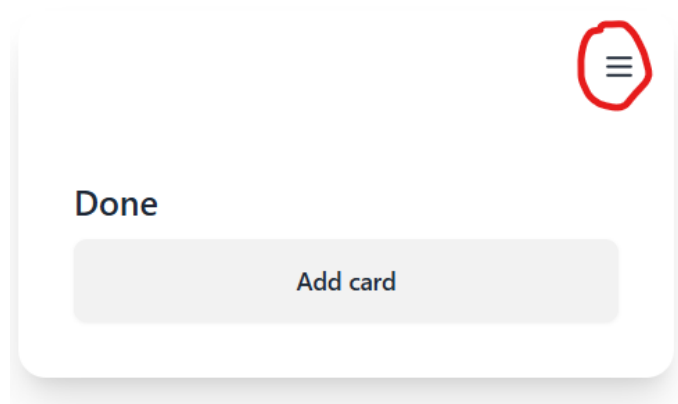


Figure 8: Delete

2. Click “Delete” Button to remove a column from the board.

5.5 Add Card

The tasks of the Kanban board should be added as cards. Any number of cards can be added to any of the columns available in the board.

1. Click the “Add Card” button in the column you want to add tasks (Figure 9).

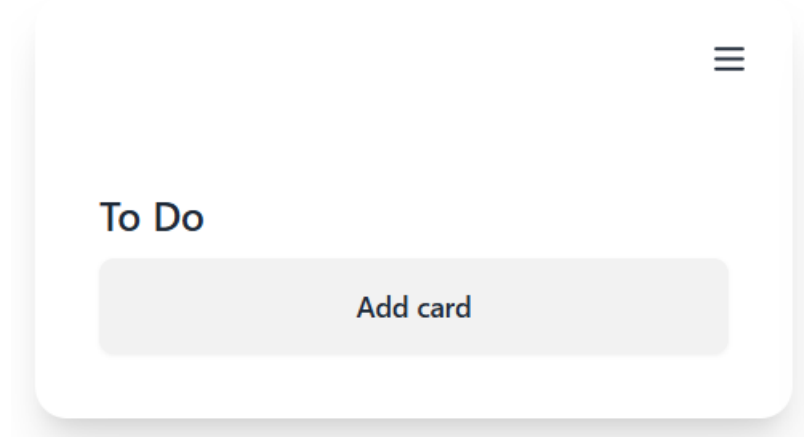


Figure 9: Add Card

2. Pop-up will display to add the Card Name (Figure 10). Type the Card name on the text box and click “Add Card” Button.

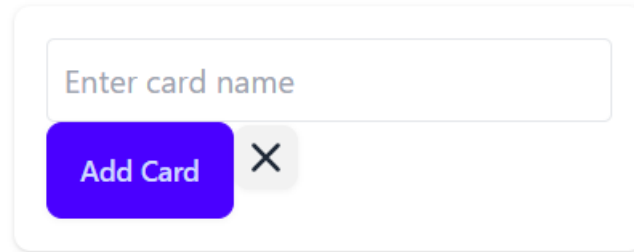
A pop-up form with a white background and rounded corners. It contains a text input field with the placeholder text "Enter card name". Below the input field, there is a blue button with the text "Add Card" and a grey button with a close icon (X).

Figure 10: Card Name

3. Repeat steps 1-2 to Add more items. Board with multiple cards will display as in Figure 11

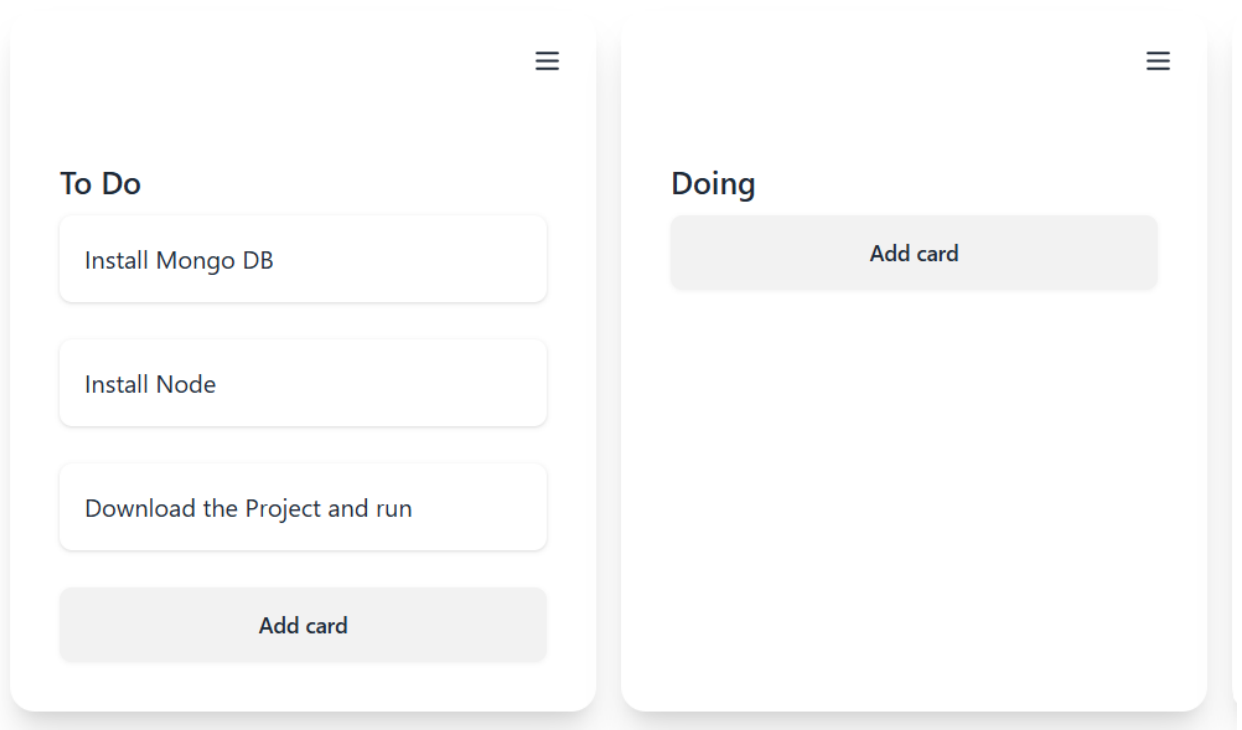
A screenshot of a Kanban board with two columns. The left column is titled "To Do" and contains three cards: "Install Mongo DB", "Install Node", and "Download the Project and run". At the bottom of this column is a grey button labeled "Add card". The right column is titled "Doing" and contains a single grey button labeled "Add card". Both columns have a hamburger menu icon in the top right corner.

Figure 11: Final Board

5.6 Log Out

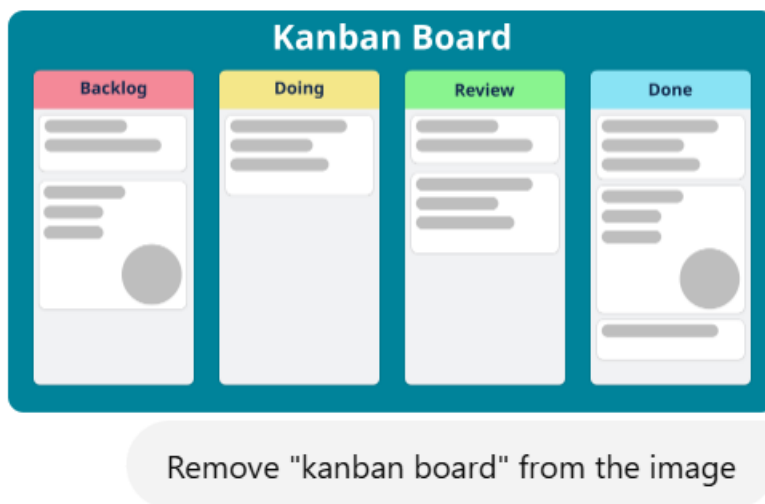
Log out the system after the use.

Click the profile image of the top right corner of the page. The “Log Out” button will be displayed. Click the button to safely log out of the system.

6. AI Usage

- ChatGPT is used to remove the “kanban board” text form the image which is on the home page

Prompt:



Result:

I'll process the image to remove the "Kanban Board" text. Let me handle that now.

I will now edit the image to remove the "Kanban Board" text and provide you with the updated version.

I have removed the "Kanban Board" text from the image. You can download the edited version here:

[Download Edited Image](#) [-]



- AI was not used for the documentation.