

EE/CprE/SE 491 WEEKLY REPORT 6

Start Date – End Date: 10/28/2025-11/4/2025

Group number: sdmay26-16

Project title: AI Home Design Moodboard

Client &/Advisor: Md Maruf Ahamed

Team Members & Roles:

- **Prakeerth Regunath: Frontend & Scheduler/Organizer**
- **Onur Onal: Project Lead/Project Manager & Full-stack**
- **Kemal Yavuz: Lead Backend**
- **Erroll Barker: Lead Frontend**
- **Bae Meh: Backend**
- **Om Sanghvi: Backend**

Weekly Summary

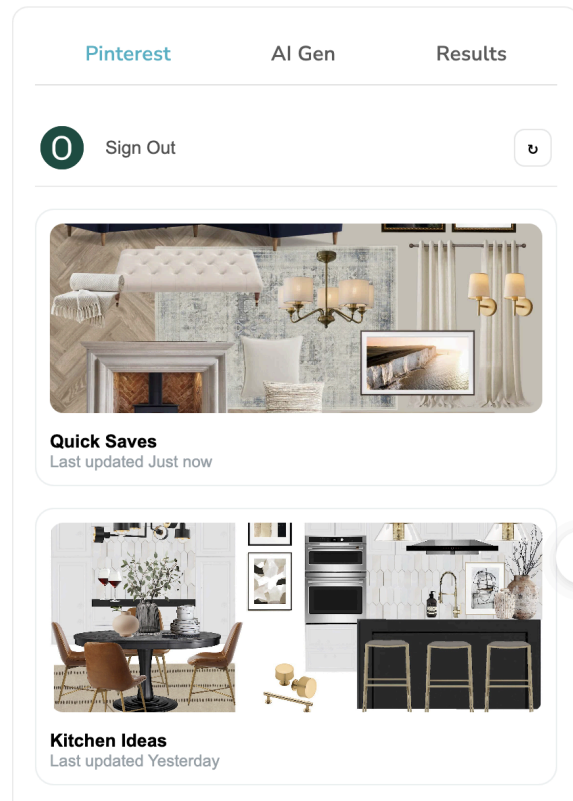
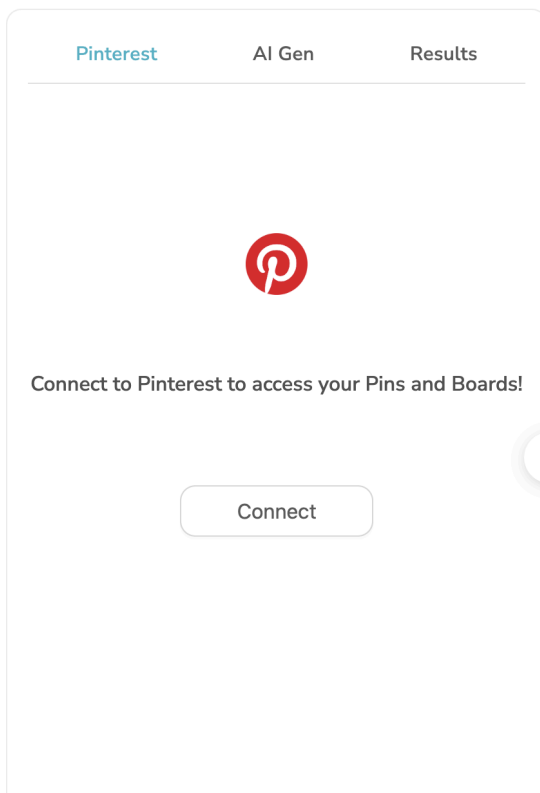
- o **We made solid progress this week across integrations and UI development. We implemented Pinterest API functionality for managing and adding pins to moodboards, finalized the moodboard UI with shared components, and selected the Seedream API after testing multiple image generation models. We continued developing the account page, explored Stripe integration for handling withdrawals, and worked on GUI testing improvements. We also ensured authentication and routing were functioning properly in the Moodboard Hub and successfully tested the Nano Banana AI API with backend integration. Overall, we achieved strong progress in API integration and frontend functionality.**

Past Week Accomplishments

- **Prakeerth Regunath:** I successfully implemented the Pinterest API functionality within the program. Specifically, I was able to access the user's boards, and within those boards, I managed and selected the pins I wanted to drag and drop onto the moodboard. I ensured that this functionality was added to the main moodboard after testing it within the mock moodboard.
- **Onur Onal:** This past week I looked extensively into image generation API's. I created an account in a platform called fal.ai and bought credits to test out API's such as Google's Nano Banana, Seedream 4.0, and a few other models such as flux pro context, and settled with Seedream after observing that it outperforms other models by a considerable margin. I also fully completed the non-functional user interface of the moodboard page, and created a separate component for the in-app header that's used both in the moodboard and moodboard dashboard pages. Lastly, I finalized the component for the pinterest view in the sidebar of the moodboard page. It uses mock data temporarily while Prakeerth begins working on connecting the new frontend to the Pinterest OAuth backend that he wrote last week.
- **Om Sanghvi:** Focused on debugging and finalizing the CI/CD pipeline for the backend. Tested pipeline stability within Docker containers to ensure consistent builds and deployments before merging to the main branch.
- **Erroll Barker:** I've continued working on the account page this week. As a team, we decided to use Stripe for handling withdrawals from user accounts. I've also been researching email push notifications for failed billing attempts to improve user communication and error handling. On the design side, I've been reviewing Ant Design card and divider components to integrate them securely and maintain a consistent UI. Additionally, we've been collaborating with Onur on GUI testing and developing a node map to identify prime paths, which will make the testing process more efficient and organized.
- **Kemal Yavuz:** This week, I focused on making the Moodboard Hub fully functional with authentication and our backend infrastructure. I ensured that protected pages correctly require login and that the user session persists across navigation. I also worked on connecting frontend request logic to the backend so that user-specific data can be retrieved and displayed properly once board endpoints are finalized. In addition, I helped refine user experience across the site by organizing the routing and ensuring UI components behave as expected when switching between authenticated pages.
- **Bae Meh:** This week, I successfully tested the Nano Banna AI generative API with our backend. I ran the tests on my branch and pushed the updates after confirming that everything worked as expected. For testing, I used a given prompt along with two images —one of a room and another of a mood board to simulate how our app would generate results based on user input.

Rough Sketches/Drafts

- Rough Look at the Pinterest Mock Moodboard Test
 - This set of pins was from a Pinterest Board called "Furniture". The API retrieval was successful, collecting the pins saved within that Board.



Pending issues

- A few minor CI/CD bugs remain related to container rebuild timing and service restarts. These need to be resolved before integrating frontend deployment triggers.

Individual Contributions Table

<u>NAME</u>	<u>Individual Contributions</u> <i>(Quick list of contributions. This should be short.)</i>	<u>Hours this week</u>	<u>HOURS cumulative</u>
Prakeerth Regunath	Pinterest API and Account Connection Functionality implemented. Starting to set up JSX test cases.	7	37
Om Sanghvi	Debugged and finalized CI/CD pipeline for backend Docker deployments.	8	28
Erroll Barker	Not much new progress this week. It's mostly research, small implementations, and collaborating with the team on creating and refining design ideas for the Account page.	~7	74
Onur Onal	Tested multiple image generation APIs on fal.ai, chose Seedream for Renova, completed the moodboard page UI and in-app header component, and finished the Pinterest view using mock data pending backend integration.	21	81
Kemal Yavuz	Backend-frontend integration work (auth flow + Moodboard Hub preparation for CRUD and secure data handling)	6	39
Bae Meh	Tested Nano Banana AI generative API with backend, Ran tests on my branch, and pushed updates. Used a given prompt for testing simulate how the app would generate results based on user input	6	36

Plans for the upcoming week

- **Prakeerth Regunath:** For the upcoming week, I plan to setup and create frontend test cases that coverage the current website's functionality, such as User Authentication of Login/Signup, as well as account connection functionality, such as Pinterest Account Connection.
- **Onur Onal:** I plan on making the moodboard functional by implementing the canvas toolbar and board actions. Image management with AWS S3 is also essential at this stage as they are needed for moodboard thumbnails and AI generations since we've selected our API, so I'll set up the backend for that. I also plan on assisting Om with build and deployment automation, as we have yet to test out docker compose build and hosting on the VM.
- **Om Sanghvi:** Finish resolving CI/CD bugs, then begin connecting the backend pipeline to the frontend deployment workflow. Also start initial integration of the GenAI image and video generation feature into the backend API so users can add AI-generated visuals directly into their Moodboards.
- **Erroll Barker:** My main focus this next week is to finish the account page and get it fully functional so I can move on to other front-end tasks. I also plan to implement animations into the login and sign-in pages to enhance the user experience. Once the account page is complete, I'll shift my attention to assisting the team, either by helping with the mood board or contributing to the GUI testing design to ensure everything is

running smoothly. In summary, my goal for next week is to wrap up the account page and start supporting the team with additional front-end development and design improvements.

- **Bae Meh:** Next week, I plan to use Fal.ai, a platform that supports testing various AI model APIs, to test the Seedream model since I wasn't able to do so previously. I'll focus on integrating and testing Seedream's capabilities with our backend to see how it performs compared to the Nano Banna API. In addition, I plan to experiment with different prompts and image inputs to evaluate output quality and consistency. I'll also document my testing process and results.
- **Kemal Yavuz:** Next week, I will begin development of the Explore page, which will allow users to browse moodboards shared by others for design inspiration. My focus will be on building the frontend layout, creating components for displaying public boards, and connecting to backend endpoints when available. I will also ensure proper access management so only intentionally shared boards appear publicly, and continue improving the flow between authenticated pages to maintain a consistent user experience across the platform.

Summary of Weekly Advisor Meeting

Last week, we met with Professor Maruf to present our app's progress. We demonstrated the completed landing page, the functional Google OAuth flow, and the newly developed moodboard dashboard and moodboard pages.