

RENOVA WEBSITE DESIGN

Design, reorient, and add furniture to your room to see how it will look with Renova.

By: sdmay26-16



Team Members



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Project Lead/Project
Manager



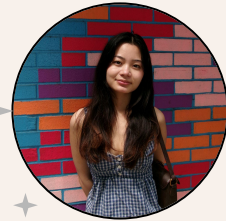
Prakeerth

Frontend &
Scheduler/Organizer



Erroll

Lead Frontend
UX/UI designer



Bae

Backend



Kemal

Fullstack



Om

Backend

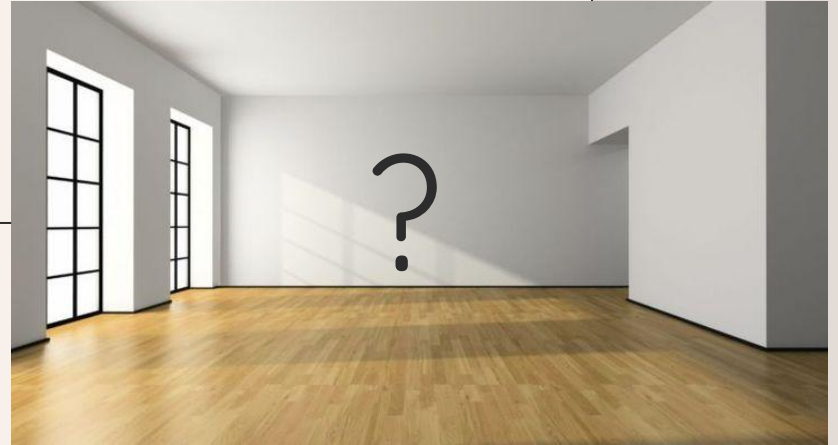
The Design Planning Process

- People use moodboards to explore furniture, colors, and styles.
- Helps visualize themes and coordinate design choices.
- Common starting point for redesign projects.



Where Traditional Moodboards Fall Short

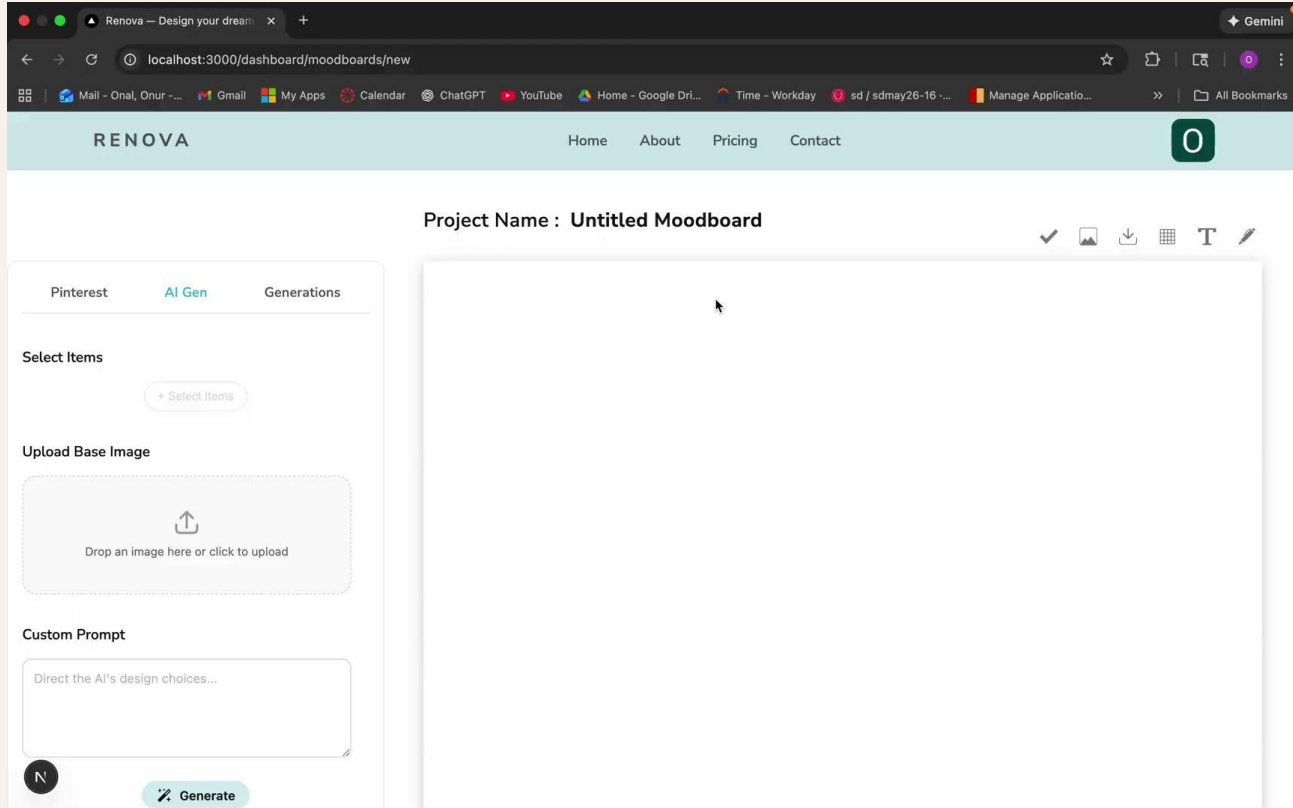
- Moodboards don't show how designs fit real rooms.
- Hard to visualize scale, lighting, and composition.
- Decisions remain guesswork without room context.



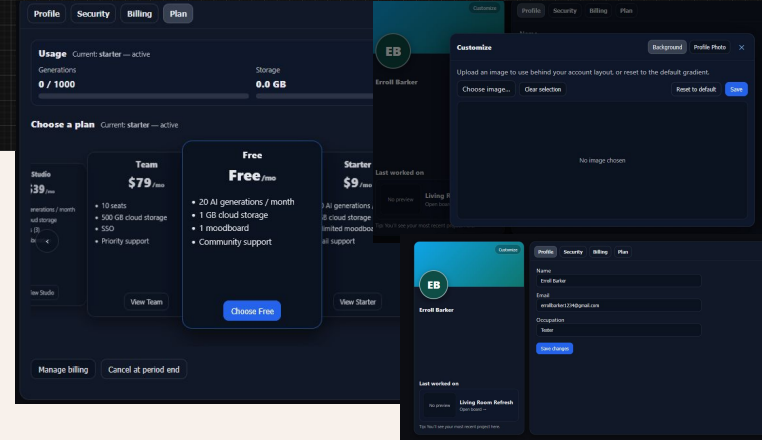
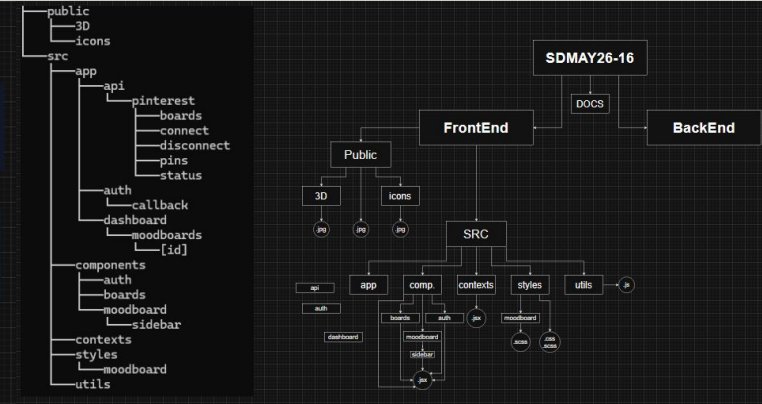
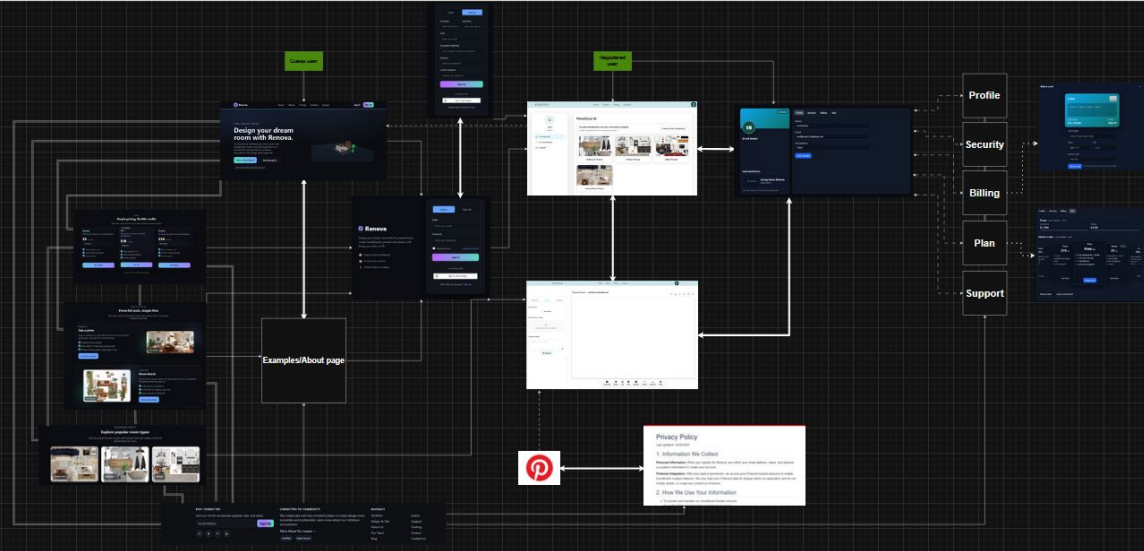
The RENOVA Solution



Demo

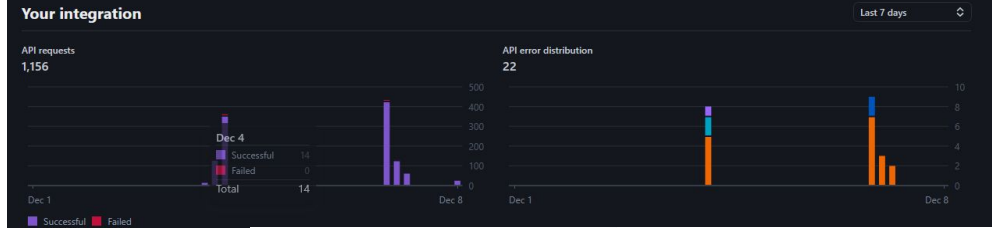
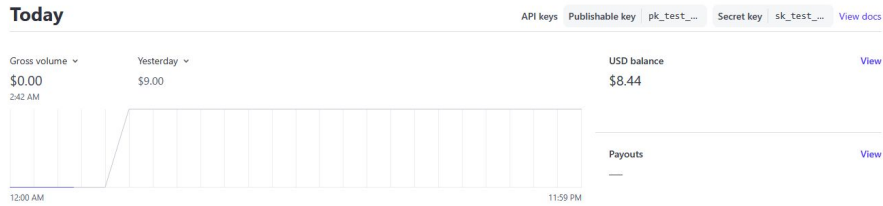


Frontend - UI/UX design



Our stack: Next.js + React, CSS/SCSS, Stripe Elements, Pinterest elements, Google elements, Mirage.js

Stripe API



Frontend (Next.js) -> Tabs: Profile / Security / Billing / Plan

API (Node/Express + Prisma) -> /me, /billing/*, /plans/*

External: Stripe (Payments, PMs, Invoices, Customer Portal) + **DB** (users, plans)

Rate Limiting/OAuth/Caching

Short-lived cache (TTL) + ETag

- All data loads happen inside a single useEffect(..., []) per tab/panel.
- multiple API calls -> apiFetch
- GET responses are cached in memory for ~60s. (304)

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Name	Pricing
team	\$79.00 USD Per month
studio	\$39.00 USD Per month
pro	\$19.00 USD Per month
Starter	\$9.00 USD Per month
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HTTP 402 Payment Required
SCA incomplete/priceld is wrong

Confirm it's you
Enter the code sent to (...)*...83 to use your saved information.
You are currently testing and no code will be sent. Enter 000000 to continue.

Send code to email instead

Logging in as enrollbarker1234@gmail.com

Pay without Link

Add a card

CARD

CARDHOLDER FULL NAME MM/YY

Card number: 1234 1234 1234 1234

Expiry: MM / YY CVC: CVC

Name on card: Jane Doe

[Attach card](#) Use Stripe test card 4242 4242 4242 4242

```
POST /api/plans/checkout-session 200 610.690 ms - 443
POST /api/plans/checkout-session 200 577.327 ms - 443
POST /api/billing/sources 200 1032.390 ms - 124
GET /api/billing/sources 200 400.135 ms - 127
```

AI Generation APIs Researched

Evaluation Criteria

- ❑ Image quality
- ❑ Editing capabilities performance
- ❑ Cost per Generation



Strength

Trade Offs

Nano Banana

- High-quality base image generation
- Good for simple edits and mockups
- Lower-cost generations compared to larger models

- Requires more prompt fine-tuning
- Struggles with more complex edits

Seedream

- High-quality, realistic, and consistent output
- More reliable for complex edits and structured scenes
- Less prompt-tuning needed

- Slightly higher cost per generation than Nano Banana
- Newer model → fewer community examples



Backend Architecture Overview

Backend Stack

- Node.js + Express REST API
- Prisma ORM (MySQL)
- JSON Web Tokens (JWT) for authentication
- Multer for multipart/form-data uploads
- AWS S3 for image storage (avatars, backgrounds)
- Stripe API for subscription plans and billing

System Structure

- Routes (/api/user, /api/moodboard, /api/plans, /api/billing, /api/media)
- Controllers (User management, moodboard CRUD, plan handling, billing, media streaming)
- Middleware (Authentication, role verification, upload parsing, error handling)
- Lib Layer (Prisma client, S3 client, Stripe client, token/password utilities)

Database Schema Overview

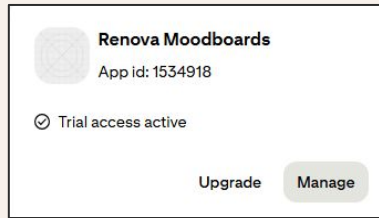
Core Relationships

- **User ↔ Moodboard (1:N)**
A user can create multiple moodboards.
- **User ↔ Generation (1:N)**
A user can have many AI generations.
- **Moodboard ↔ Generation (1:N)**
Generations can optionally belong to a specific moodboard.
- **User ↔ PinterestIntegration (1:1)**
Each user may have one Pinterest OAuth connection.
- **Plan Table**
Maps Stripe price IDs → plan keys → feature limits
Stores limits (generations, storage) as JSON

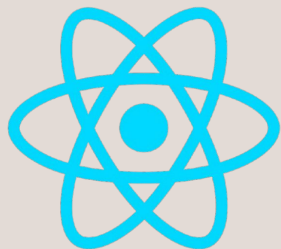
Pinterest API



- One of the prime core features for Renova.
- Lets users connect their Pinterest account so Renova can access their boards and saved pins.
- Retrieves the user's furniture-related or interior-design pins through the Pinterest API.
- Shows those pins inside Renova so users can browse them without leaving the app.
- Automatically inserts the pin's image into the canvas so it can be moved, resized, or combined with other design elements.



Frontend / E2E Testing

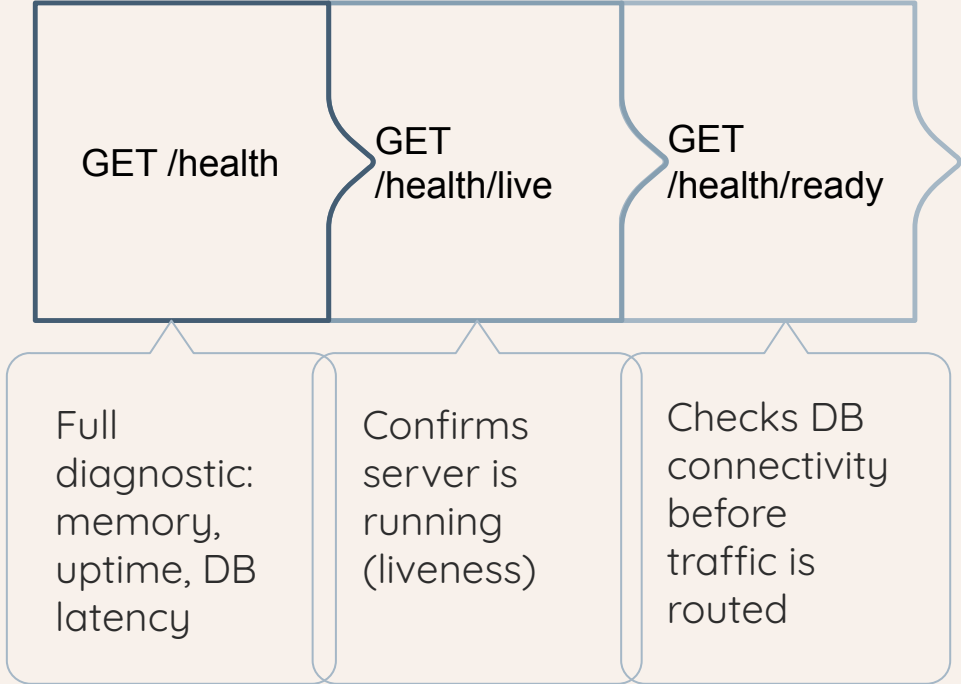


```
1 // Helper to create robust mock responses
2 const createMockResponse = ({ ok = true, status = 200, json = {}, text = '' } = {}) => ({
3   ok,
4   status,
5   headers: {
6     get: jest.fn((header) => {
7       if (header && header.toLowerCase() === 'content-type') return 'application/json';
8       return null;
9     }),
10  },
11  json: jest.fn().mockResolvedValue(json),
12  text: jest.fn().mockResolvedValue(text),
13 });
14
```

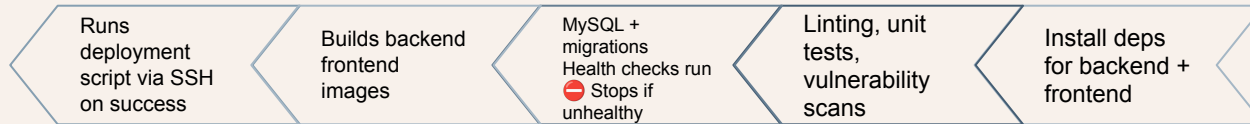
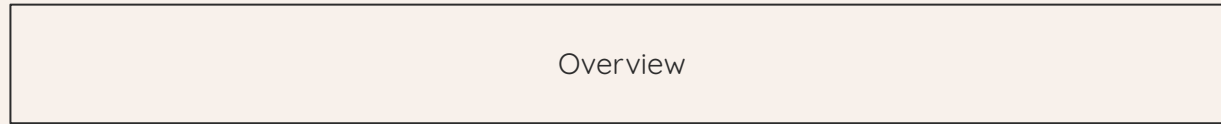
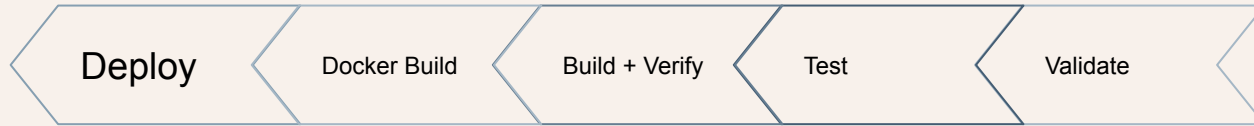
- Jest is used to mock APIs and test authentication logic without real network calls.
- React Testing Library tests components by interacting with the UI the way a user would.
- Tests verify UI behavior such as loading states, user display, and error handling.
- External dependencies are mocked to keep tests isolated and reliable.
- End-to-end frontend auth flows (login, token refresh, auth checks) are validated through rendered UI output.



Backend Safety & System Health Monitoring



CI/CD Pipeline (How Code Gets Deployed)



THANKS!

Do you have any questions?