# LoveLogic - Process Book

Unveiling Patterns in Dating App Behavior

**By Rania Hatrouhou, Leïla Benjelloun and Yassine Chami**

# LoveLogic Overview

## Brief Project Description

**LoveLogic** is an **interactive data visualization project** that explores the dynamics of modern dating apps. Using real user data, we reveal patterns in **dating preferences**, **user behavior**, and **relationship goals** through engaging and intuitive visualizations.

## Problem Statement

In today's digital dating landscape, **understanding user behavior and preferences** is crucial for both users and platform developers. However, this data is often hidden behind **complex interfaces and raw statistics**. Our project aims to make this information **accessible, engaging, and fun** through interactive visualizations.

## Target Audience

- **Dating app users** seeking insights into dating trends
- **Data visualization enthusiasts**
- **Researchers** studying modern dating behavior
- **Dating app developers and product managers**

## Key Goals

- **Visualize user demographics and preferences** in a way that's both clear and inviting.
- **Reveal hidden patterns** in dating goals and interests that spark curiosity.
- **Show usage patterns and swiping behavior** to uncover surprising insights.
- **Create an engaging, interactive experience** that invites exploration and fun.
- **Make complex data accessible and understandable** for everyone.

## Dataset Overview

- **Real dating app user data**
- Key attributes: **age, gender, interests, relationship goals**
- Usage patterns: **swiping history, frequency of app usage**
- User preferences: **relationship goals, interests**

# Where Ideas Sparkle and Flow : Brainsortming

## Initial Design Concepts

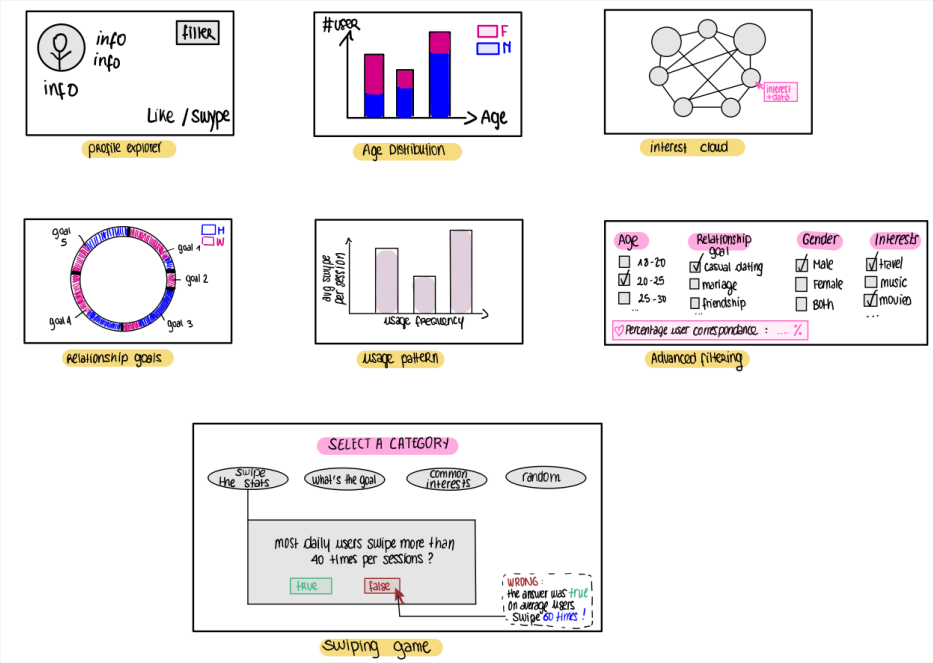
Our brainstorming sessions were **lively, full of ideas and sketches**. We asked ourselves: **What would dating app users truly want to see? How can we visualize dating behaviors** in a way that feels both **insightful and playful**? **Which interaction styles would make users feel like they're exploring their own data stories?** We considered not just the data, but the **human curiosity behind it**. Would users enjoy uncovering hidden patterns? How could we make the experience personal, intuitive, and engaging? These questions fueled our design journey, shaping the heart of **LoveLogic**.

## Key Design Decisions

Our design journey was guided by **four key principles**, blending storytelling with interactivity to create a rich and playful user experience:

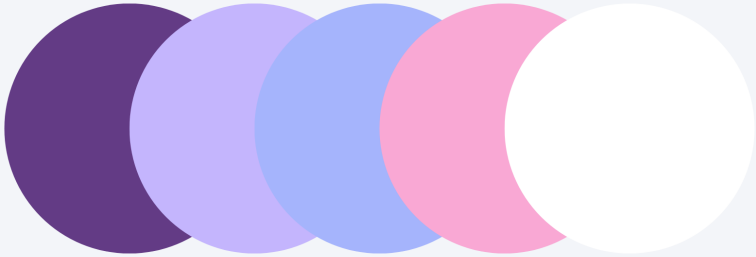
- **Emphasis on Interactivity**: We prioritized features like the Profile Explorer and Swiping Game to make data exploration active and engaging. Advanced filtering tools empower users to tailor visualizations to their own curiosities.
- **Balancing Simplicity and Depth**: Our visualizations are designed for immediate understanding, while also revealing deeper insights through interactions—such as hovering over the interest network to uncover detailed information.
- **Storytelling with Data**: We structured the visualizations as a narrative journey, starting with broad demographic trends and guiding users toward individual stories, culminating in personalized exploration and playful interaction.

# Wireframes

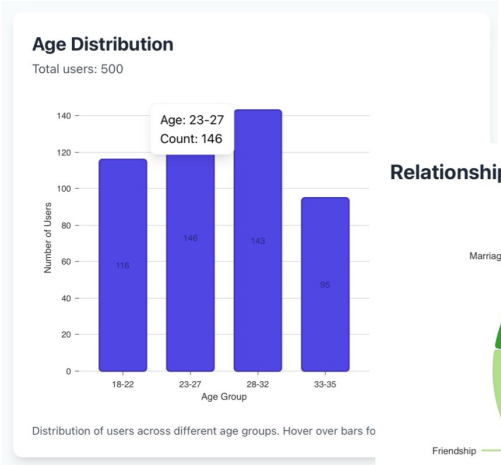


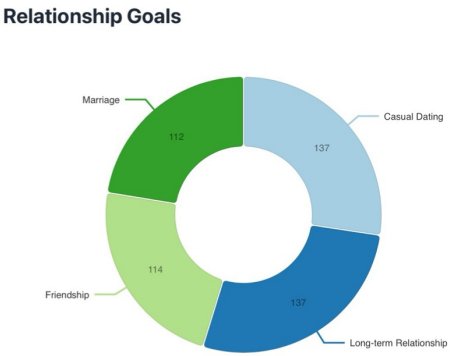

# Color Scheme

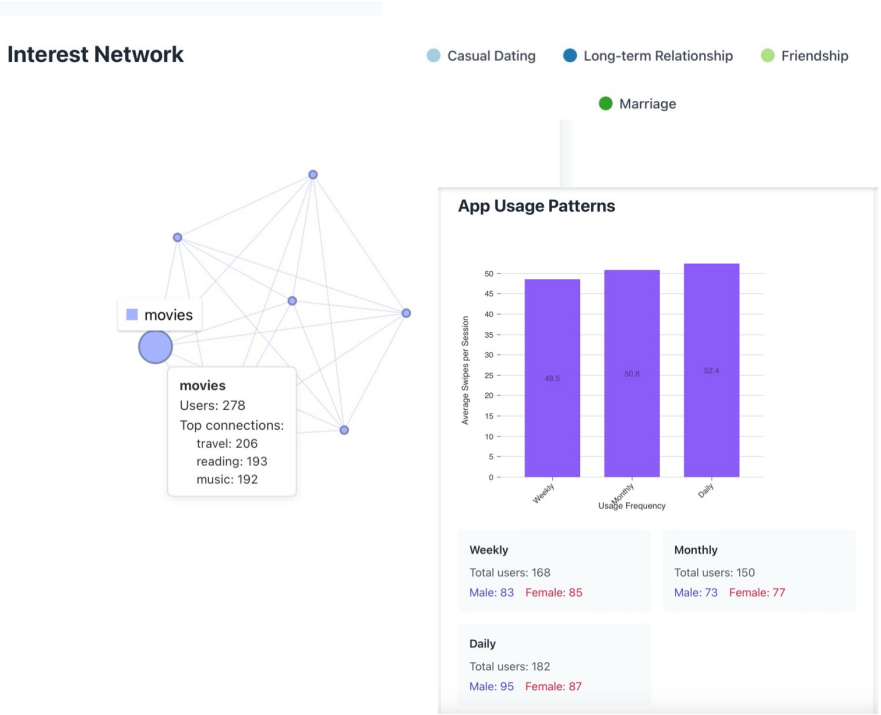
We established a **consistent color palette and visual style** across all sketches to create a cohesive user experience. Key categories like **gender**, **relationship goals**, and others use the same colors throughout, making it easier for users to interpret the data across different views.



# Visualizations



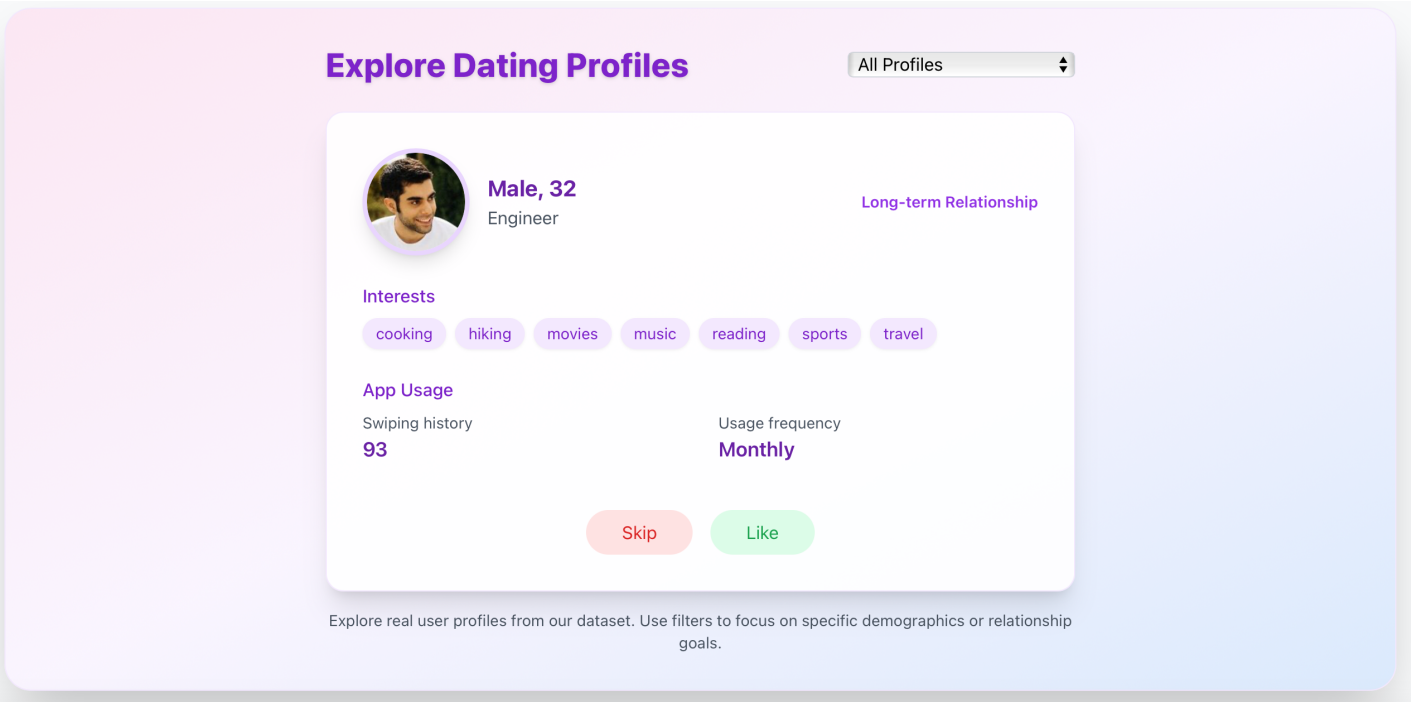







**Our project features four vibrant visualizations** that together provide a fun and insightful look into dating app user behavior.
**The Age Distribution chart** unveils the breakdown of users by **age and gender**, letting us spot trends and see which age groups are the most active.
**The Usage Patterns visualization** dives into how often users swipe, highlighting average activity across different levels of engagement and uncovering surprising patterns.
**The Relationship Goals chart** showcases what people are looking for—whether it's casual dating, long-term relationships, friendship, or marriage—giving us a peek into user intentions.
**The Interest Network** draws a playful map of common user interests and their connections, revealing clusters of shared hobbies and hidden links between preferences.
Together, these visualizations turn raw data into engaging stories, showing the dynamic world of modern dating.

**Under the hood, it's magic!** Each visualization is crafted as a reusable React component, powered by modern libraries and custom logic. The Age Distribution and Relationship Goals charts use **Nivo** for smooth, responsive bar and pie charts, with data drawn from our preprocessed JSON files. Usage Patterns come alive with custom bar charts that allow easy filtering and fun comparisons. The Interest Network sparkles with a force-directed layout, where nodes represent interests and links show connections, animated smoothly with **Framer Motion**. Everything is dressed up with **Tailwind CSS**, creating a cohesive, stylish, and fully interactive experience that invites users to explore the data in depth.

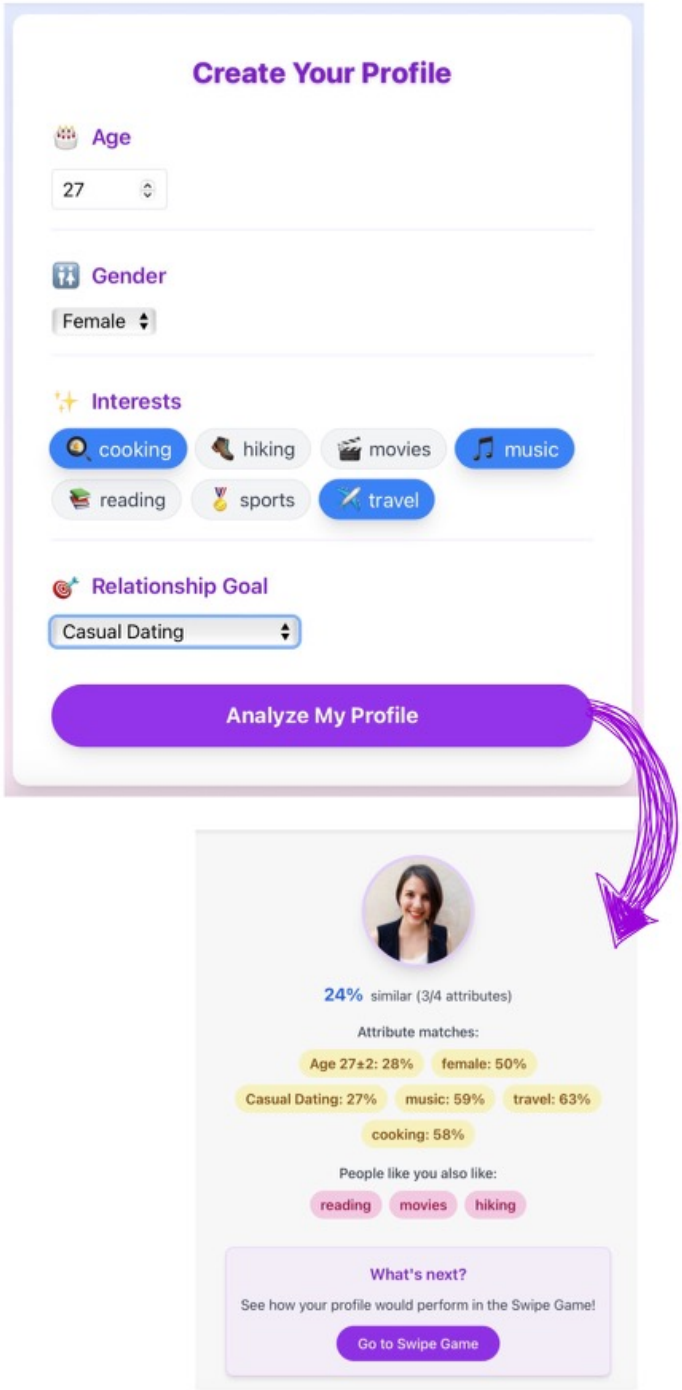



**Welcome to the Profile Explorer!** This interactive tool invites users to swipe through dating profiles, capturing the familiar and dynamic experience of modern dating apps. With each profile, users can explore **age, gender, occupation, interests, relationship goals, and app usage patterns**, creating a vivid and detailed picture of the dating landscape.

**Feeling selective?** The Profile Explorer includes intuitive filters that let users focus on specific demographics or relationship goals, providing a tailored exploration of the dataset. And to keep the experience lively, each profile is paired with a unique avatar, generated dynamically using the Dicebear API and seeded with user attributes for a consistent and personal touch.

**Behind the scenes**, the Profile Explorer is built as a reusable React component that loads data from preprocessed JSON files. It manages state to track the current profile and selected filters, updating the displayed profile based on user interactions like swiping or applying filters. Transitions between profiles are animated smoothly with Framer Motion, while Tailwind CSS brings a cohesive and polished design to the interface.

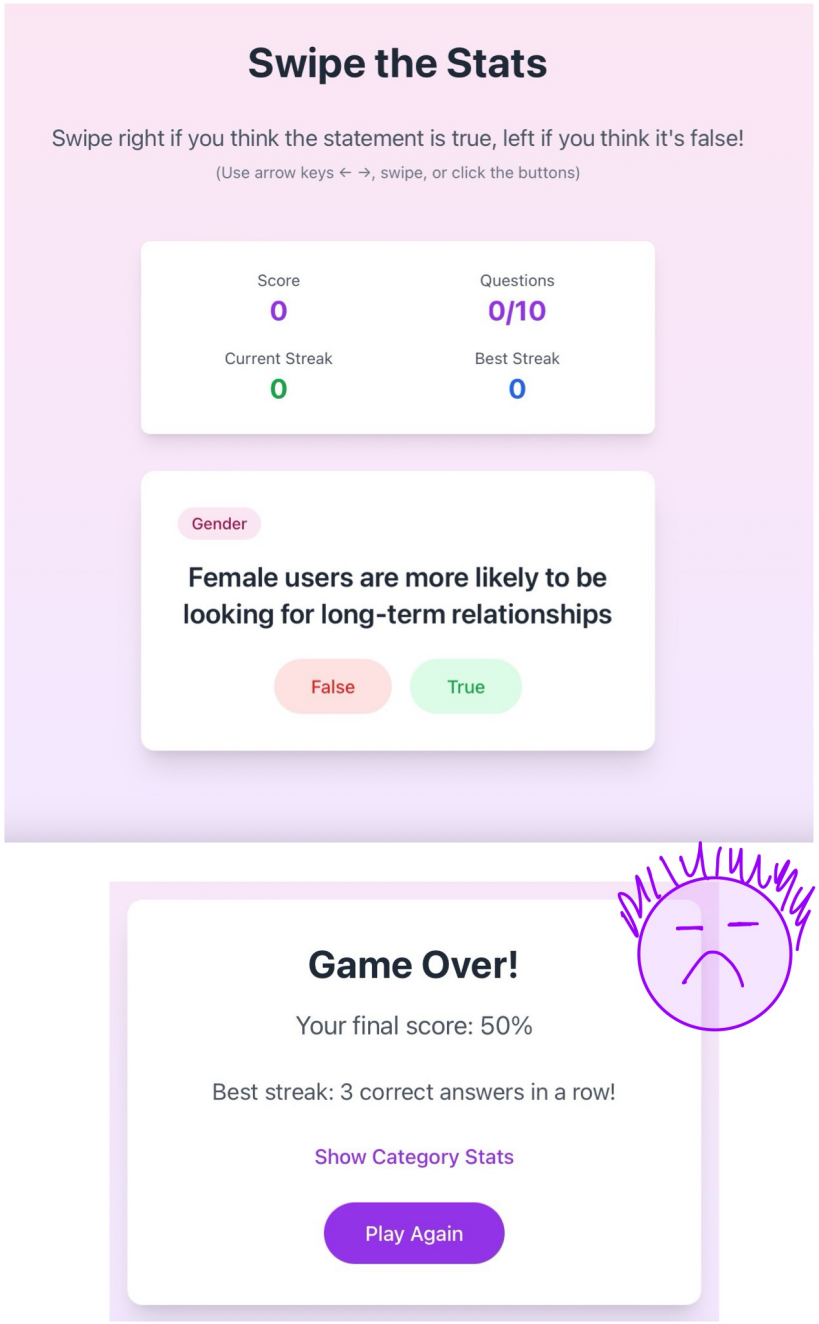
Altogether, the Profile Explorer transforms static data into a **vivid, interactive, and engaging experience**, breathing life into the dataset and offering a dynamic view of modern dating behavior.




**The Profile Generator** is an **interactive playground** where users can create their own fictional dating profiles and instantly see how they **stack up against real users** in our dataset. With an **intuitive form interface**, users can customize key attributes like **age**, **gender**, **interests**, and **relationship goals**. Once generated, the tool provides **personalized feedback**—from a **uniqueness percentile** to **attribute-by-attribute matches** and even **shared interests** with real users. This feature invites playful exploration and helps users discover how their choices align with broader trends in the dating app community.

**Under the hood**, the Profile Generator is a **nimble React component** managing form state for each profile attribute. When the user hits **"Generate"**, the component compares the custom profile with real data (from JSON) to compute **similarity scores** and **percentile rankings**. The logic for matching interests and attributes is crafted in **JavaScript**, ensuring **instant feedback**. Avatars are generated with the **Dicebear API**, bringing a splash of fun and **visual consistency**. The interface is styled with **Tailwind CSS** for clarity and responsiveness, and the results dynamically adapt to each unique profile.

**Altogether**, the Profile Generator transforms static data into a **playful, interactive experience**, blending user input, data analysis, and visualization to make dating insights come alive!




**The Swipe Game** is our **most cherished and playful visualization**! This interactive quiz invites users to **challenge their assumptions** about dating app behavior and trends. Each round presents a **true-or-false** or **multiple-choice** question, drawn from real statistics—ranging from **swiping frequency** to **relationship goals** and **common interests**. With every answer, the game delivers **instant feedback**, revealing the correct response along with a fun, educational explanation. This lively approach transforms learning into a game, sparking curiosity and laughter.

**Technically speaking**, the Swipe Game is crafted as a **dynamic React component** that loads questions and answers from a JSON file. The component manages the entire **game state**—tracking the current question, user responses, and score. Upon each selection, it verifies the answer and displays **engaging feedback**, complete with explanations and real-world statistics. The interface is brought to life with **Tailwind CSS** for a **crisp, modern design**, while **Framer Motion** adds smooth, captivating transitions to keep users engaged.

**SO**, the Swipe Game fuses **real data, interactive fun, and instant feedback** into a joyful experience that makes data exploration unforgettable. It's more than a quiz—it's a celebration of insights, intuition, and a dash of surprise!

# LoveLogic...wasn't easy

## Roles within our Team

**Leïla Benjelloun – Frontend Development & Data Processing**

- Implemented core React components and pages (e.g., `Dashboard`, `Home`, `Profile Explorer`, `Profile Generator`).
- Led data cleaning, preprocessing, and feature engineering in Python (Jupyter Notebooks).
- Developed the Profile Explorer, including filtering logic and avatar integration.
- Generated and maintained JSON data files (`users.json`, `aggregates.json`, etc.).

**Rania Hatrouhou – Data Visualization & Interactivity**

- Integrated Tailwind CSS for consistent styling and responsive design as well as Framer Motion
- Integrated Nivo charts and ensured accurate data mapping.
- Designed and implemented the Swipe Game, including question logic and feedback system.
- Developed the Profile Generator, including similarity matching and percentile calculations.

**Yassine Chami Khazraji – Data Vizualisation & Interactivity**

- Implemented and refined visualizations: Age Distribution, Usage Patterns, Relationship Goals, and Interest Cloud.
- Worked on the Interest Network visualization and custom interactive features.

## Challenges

**Challenges** played a significant role in shaping our project. From a **data perspective**, we were initially concerned that the dataset might lack the depth needed to generate truly meaningful and engaging visualizations. To overcome this, we brainstormed creative solutions, like introducing the **Swipe Game** and the **Profile Generator**, which allowed us to extract richer insights and engage users more effectively.

On the **technical front**, we first tried to integrate the dataset directly into the React app, but this approach quickly became difficult to maintain. Recognizing the limitations, we decided to start fresh by creating a **prepare_web_data notebook** to preprocess the data and export it as JSON files. This change gave us much more control over the visualizations and allowed us to iteratively test different versions of the data until we achieved the desired results.

Finally, from a **teamwork perspective**, the project's open-ended nature sometimes made it challenging to balance everyone's ideas and ensure effective collaboration. It required **compromise, active communication, and proactivity** from each team member to align our visions and work towards a common goal. Overcoming these challenges not only strengthened our technical skills but also reinforced our ability to collaborate and adapt under evolving project constraints.