UMASS AMHERST

CS 320 SOFTWARE ENGINEERING

FINAL PROJECT

GAMIFY

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BY : BOHARIS

THE TEAM

Manager: Omer Karimi
Front-End: Iris Gao and Heather Newandee
Back-End: Rayan Chahid
Database: Ayman Alabbasi and Shreya Nimbali

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MAIN FEATURES

THE PROJECT

GAMIFY is a class productivity and scheduling app that helps students stay on top of their academic responsibilities in a fun, interactive way. It turns everyday tasks like tracking attendance, managing assignments, and checking your calendar into a game to compete with friends.

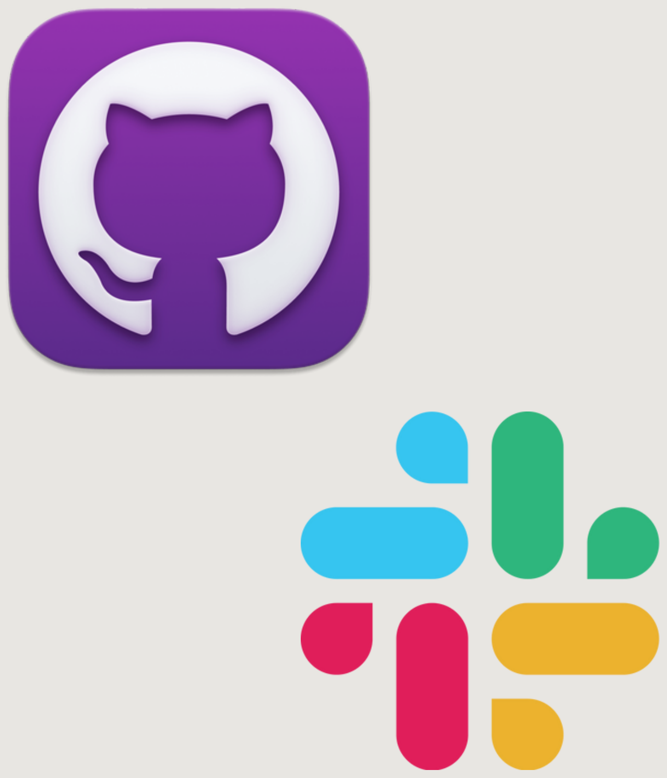
FUNCTIONALITY

- Your own personalized profile
- can set reminders
- all in one dashboard

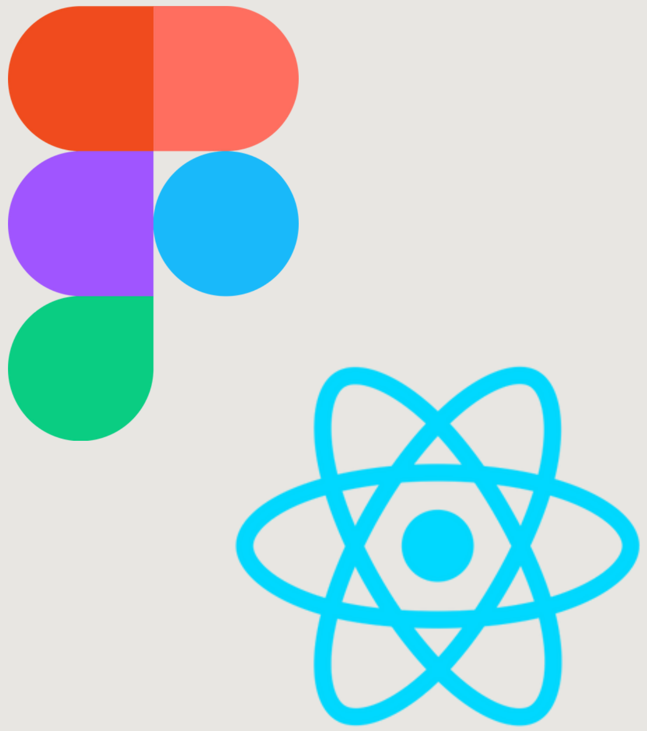
- Calendar (manage events)
- Track Assignments
- Add and manage Tasks
- Compete with friends
- Stay motivated

TECH STACK

Connections



Front End



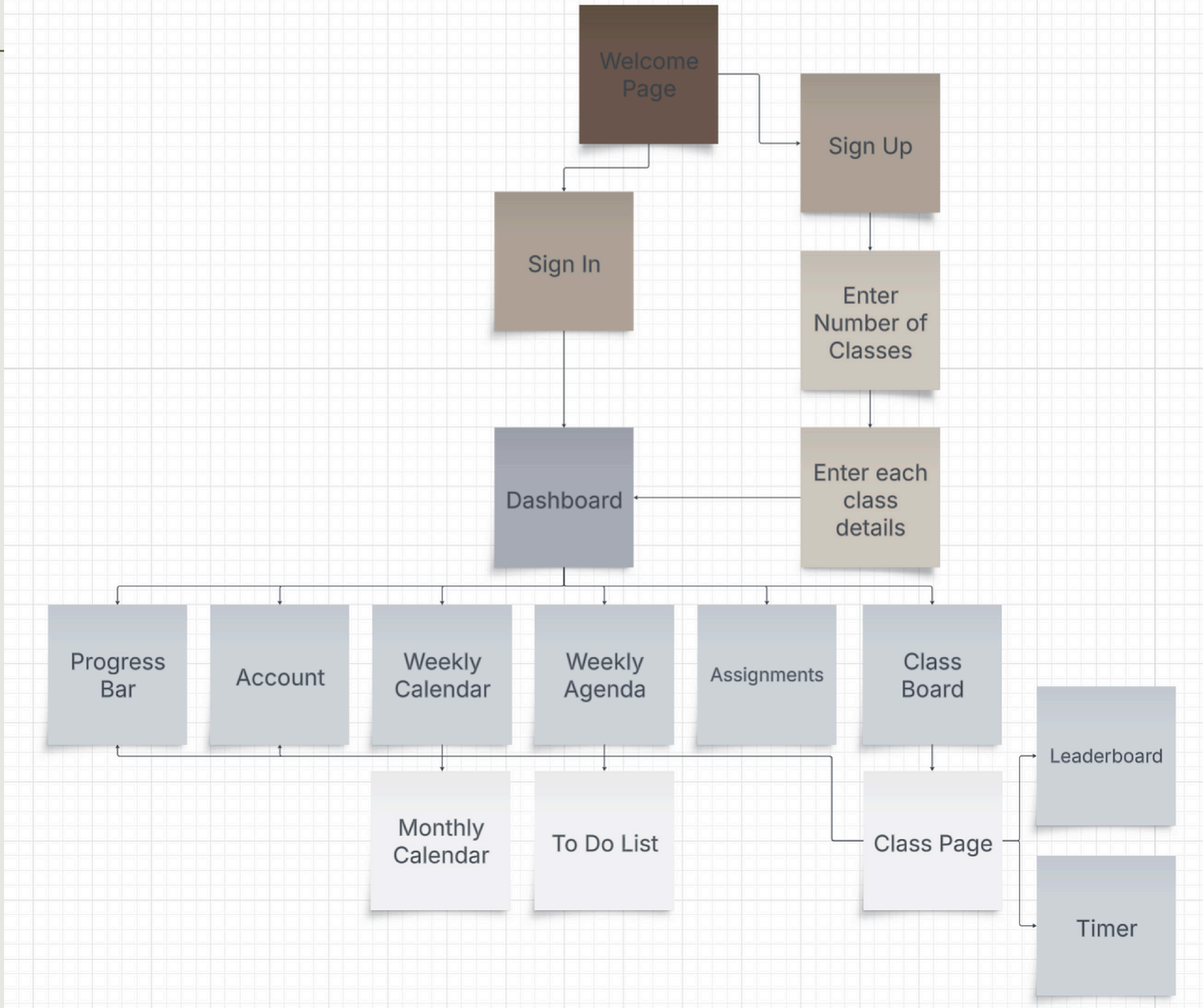
Back End

Data Base

USER FLOW

FUNCTIONALITY

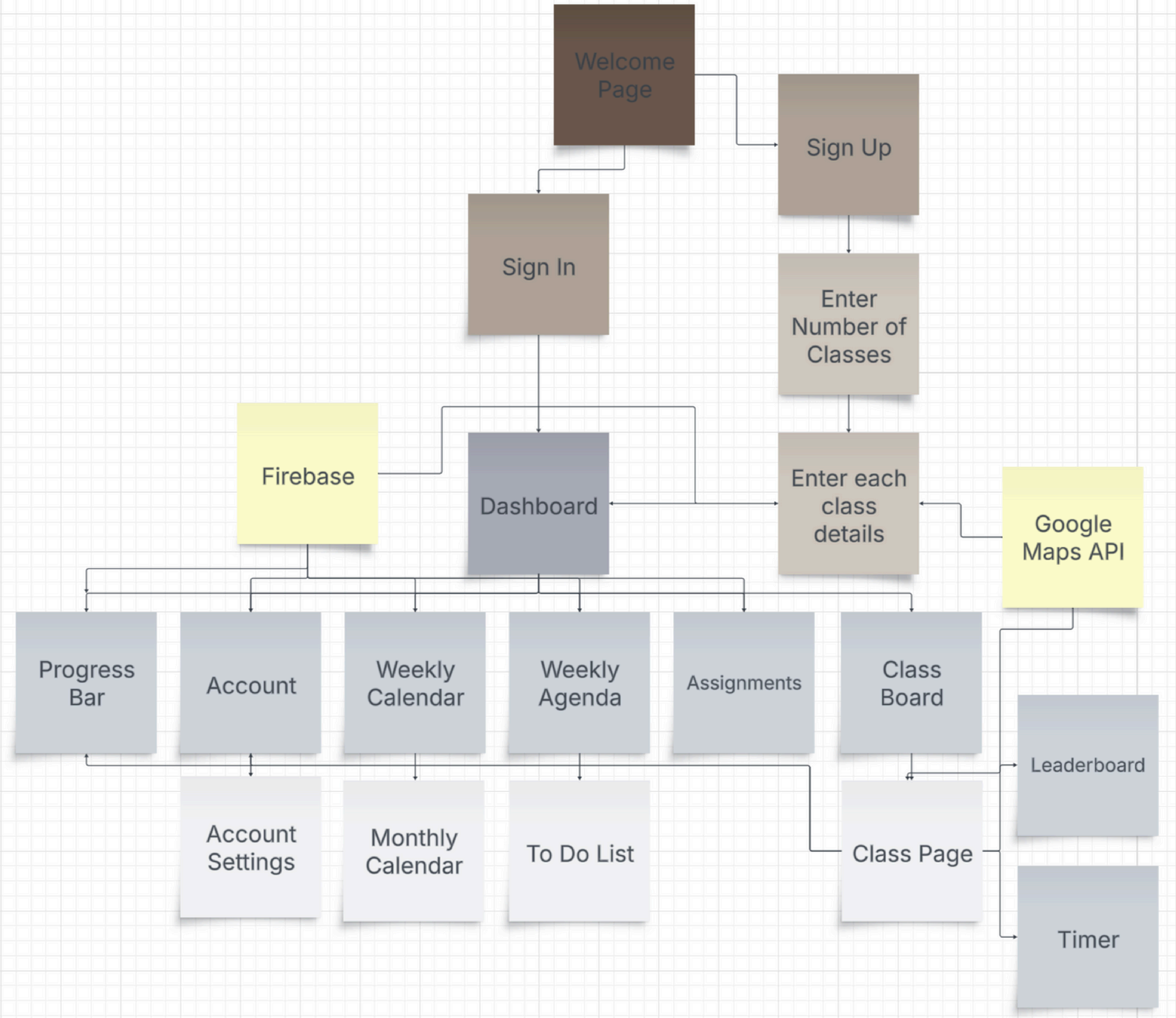
- New users can sign up or log in using the website.
- After that, they go through a quick onboarding where they add their classes.
- Once that's done, they're taken to the main dashboard where they can see all their upcoming tasks, events, and how many points they've earned by finishing things.
  - It's an easy way to keep track of everything in one place and see how you're doing compared to your friends.
- Whenever someone adds a task or marks something as done, their score updates right away.
- The whole flow is built to be simple and quick so users can log stuff, check progress, or make edits without much effort. It's meant to feel smooth and natural, with little game-like touches that make staying productive actually kind of fun.



DATA FLOW

FUNCTIONALITY

- User data flows from front-end inputs into Firestore via Firebase SDK
  - Changes are instantly reflected on the dashboard through real-time updates.
  - Authentication state is managed using Firebase Auth, ensuring secure user sessions.
- Behind the scenes, every user action triggers a corresponding Firestore write operation.
  - When a task is added or marked complete, the app updates that user's document in Firestore.
  - Realtime listeners ensure that any changes made by the user are immediately synced.
  - This reactive data flow ensures consistency and a smooth experience without manual refreshes.



TESTING STRATEGY

OVERVIEW

- Used **console logging and state inspection** to trace and validate complex component interactions (especially in React and Firebase logic)
- **Tested user journeys** across roles (e.g., new user onboarding vs. returning users) to ensure flow coherence and data persistence
- **Stress-tested edge cases** like submitting empty forms, duplicate entries, or rapid task toggling to break assumptions and surface bugs
- Simulated **slow network conditions** to observe app resilience and UX under latency

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LIVE

DEMO

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RETROSPECTIVE

Any tools you found particularly useful for developing your project

The biggest challenges you faced (both technical and non-technical)

If you had to do it all over again, is there anything you would do differently?

What did you learn, both technically and organizationally?

THE FUTURE

FURTHER GAMIFICATION

01

We're excited to add a streak multiplier - the more consistently you complete tasks, the more points you earn. We also want to introduce a friend system so you can connect and compete with classmates.

NOTIFICATIONS

02

We'd also like to add notifications to remind you about tasks and events, animated transitions to make the app feel smoother and more polished overall.

MINI CHALLENGES & REWARDS

03

Introduce time-bound challenges (e.g., "Complete 5 tasks before 6 PM") with badges or bonus points, encouraging users to engage more often and form habits.

INTEGRATION WITH CALENDARS & TO-DO APPS

04

Allow syncing with Google Calendar, Apple Calendar, or Notion so that events/tasks auto-populate and users don't have to duplicate work.

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THANK YOU

FOR YOUR ATTENTION

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