



Altered Health

Jasmine Flowers, Ian Nieto, Jerry 'Tre' Kelley, John Gornick

Ambitious Solutions

Jasmine Flowers



Ian Nieto



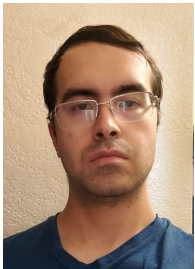
John Gornick



Client:
Jesslynn Armstrong



Jerry 'Tre' Kelly



Mentor:
Bailey Hall



► The Problem

The United States has built a **\$4.5 trillion healthcare system** where patients are surprised by bills, providers are blamed, and payers collect premiums only to deny coverage when it's needed most.

Americans Believe Healthcare Costs Should Be Transparent

In your opinion, should healthcare organizations be required to tell you how much a product or service will cost before you receive it?

■ % Yes ■ % No ■ % Don't know

All U.S. adults aged 18+ 95

May 8-15, 2023
Bentley-Gallup Business in Society Report

GALLUP

Fewer Than 1 in 5 U.S. Adults Aware of Healthcare Costs Before Receiving Care

In your experience, do you know how much your healthcare products or services will cost before you receive them?

■ % Yes ■ % No ■ % Don't know

All U.S. adults aged 18+ 17 79

May 8-15, 2023
Bentley-Gallup Business in Society Report

GALLUP

Our client sees this lack of transparency as an urgent issue that must be addressed to improve patient outcomes.

► The Solution - Altered Health

Our client believes this product should be similar to Airbnb + Yelp for Healthcare.

- Pricing transparency & cost comparison
- Integrated insurance policies
- Powerful healthcare search
- Real customer reviews and shared experiences
- Education, bill review and live support

This solution will help patients make informed choices through transparency, education, experiences, and access.

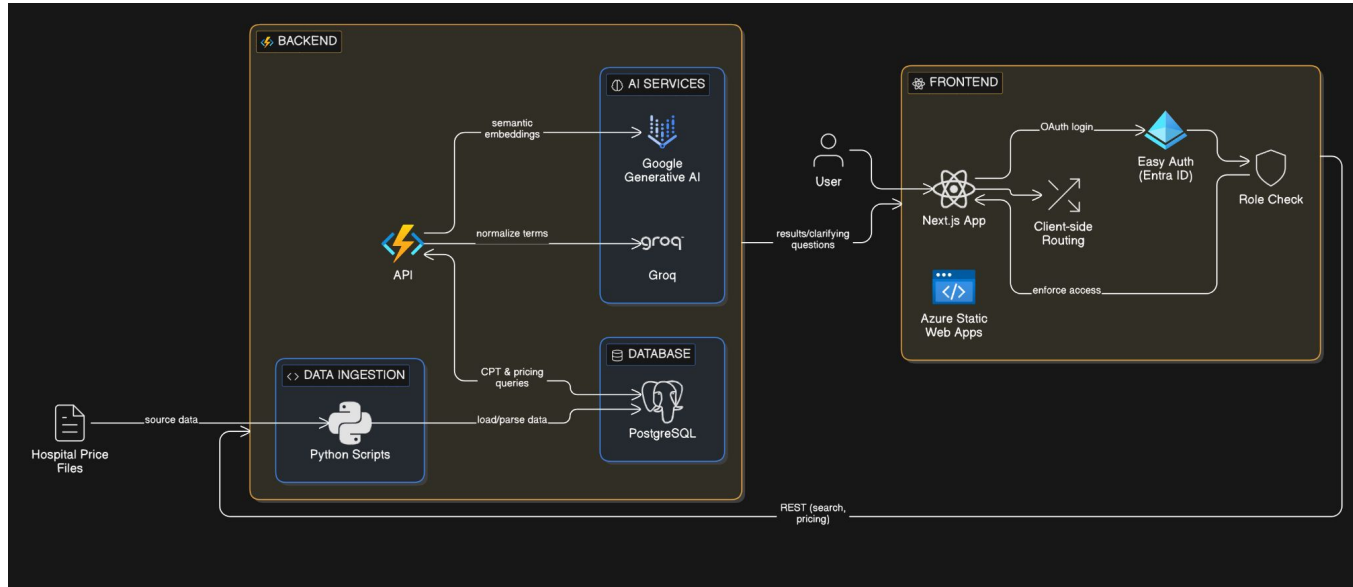


► Key requirements

- Enable users to search healthcare procedures using plain language
- Provide clear, comparable pricing across providers
- Protect user access with secure authentication and role-based permissions
- Present results in a simple & trustworthy manner
 - Clearly label pricing types
- Design for scalable data ingestion and search performance
 - Scale into greater Phoenix and Tucson area
 - Ensure fast response times under load

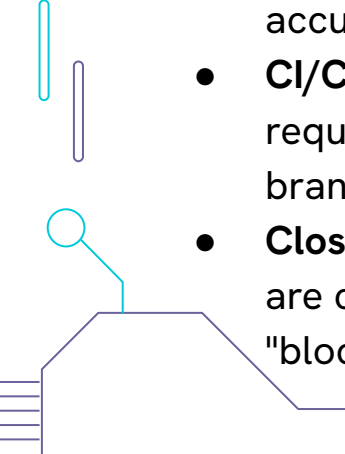


► Architecture and implementation

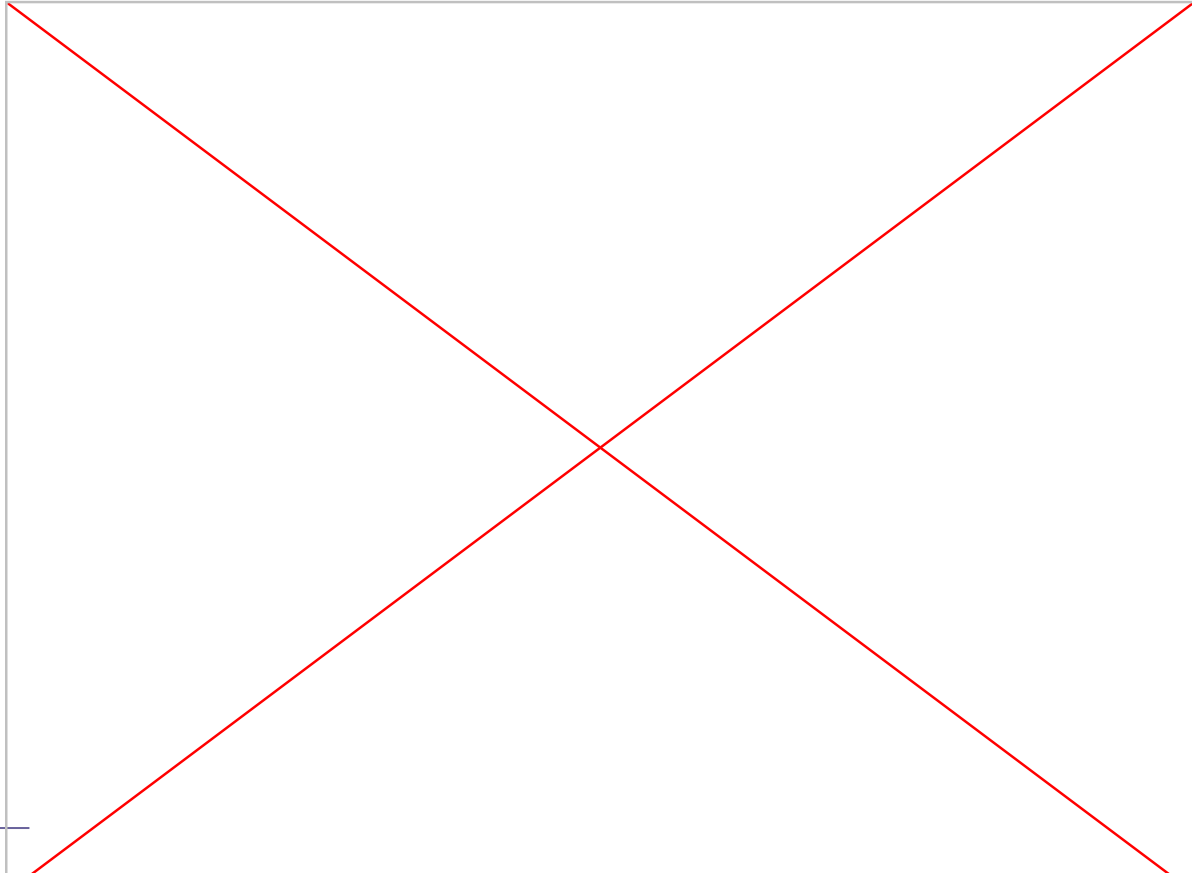




► Testing Plan

- **Architecture-Synchronized Testing:** We verify the functionality of our software by using Unit tests on all units, specifically our data parser and interface, Integration tests to our Node.js/PostgreSQL/AI service handshakes, and Usability tests to our frontend.
 - **Data Integrity is our priority:** Healthcare costs are high-stakes. We specifically target the AI-driven search pipeline to ensure plain english queries translate into accurate codes and pricing.
 - **CI/CD Guardrails:** Testing is fully automated in our GitHub pipeline. Every pull request triggers unit, integration, and accessibility checks, ensuring the main branch remains constantly tested and accurate.
 - **Closed-Loop Refinement:** We use a system where client feedback and test failures are categorized by severity. Pricing or authentication defects are treated as "blockers" that dictate the next development cycle.
- 

► Demonstration



► Challenges and Resolutions

Most of the Challenges We're Facing Are:

- Maintaining a cohesive user experience
- Platform Decisions Still in Flux
- Performance Optimization Concerns

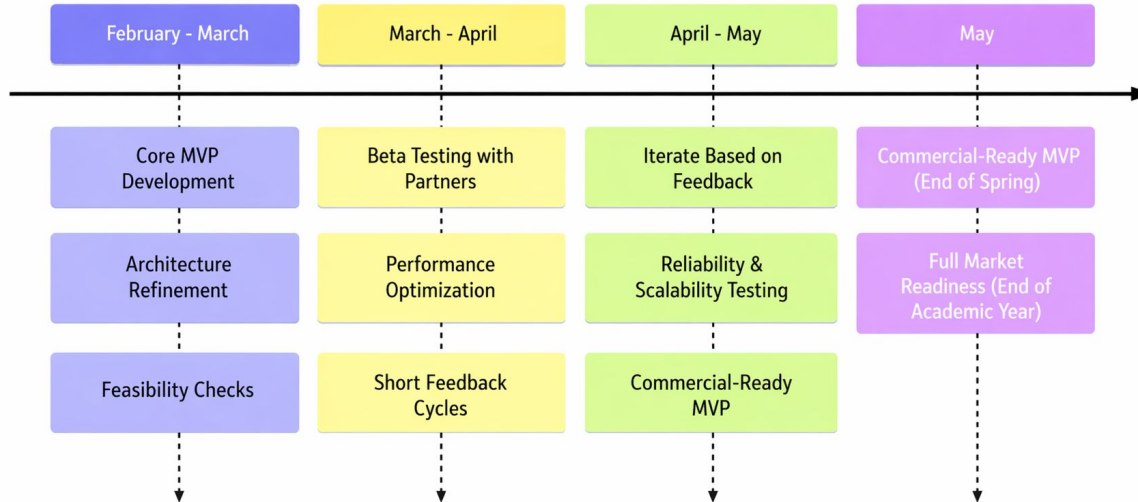
Resolution to Each Challenge:

- Document UI decisions and conduct brief design reviews before each cycle.
- We're addressing it by prototyping small pieces with different options to make data-driven decisions before locking anything in.
- Implementing caching strategies, optimizing database indexes, and planning load testing once the core functionality is stable.



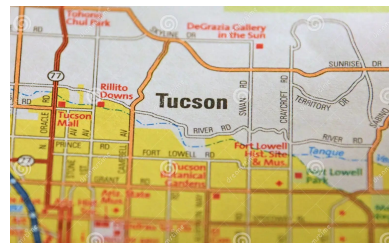
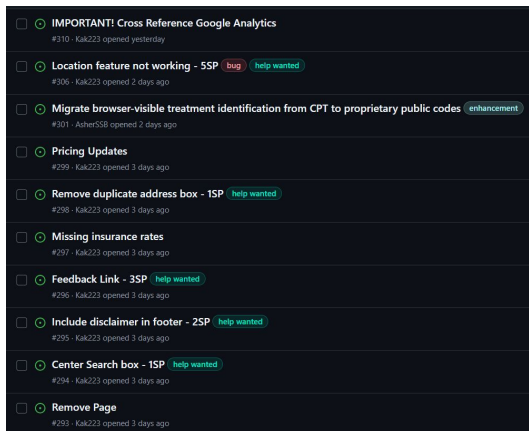
► Scheduled Timeline

Project Roadmap to Market Readiness



► Future work

- Keep developing and improving Altored Health
- Expand and launch into Phoenix and Tucson markets



► Conclusion

- Healthcare transparency is a real problem. Altered health aims to solve these problems in a real, effective, way.
- We currently have an effective software design, testing plan, and functional prototype.
- Our next steps include more development, including quality of life changes to the frontend and small functionality changes to our backend.
- By the end of our capstone project, we aim to change how healthcare is interacted with for everyone who needs it.



Thank you!

Any Questions?

