



The Atlas App

For the students, by the students

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Abstract

This capstone project introduced a cross-platform web and iOS app to modernize operations at The Atlas, a student-led coffee shop at Walla Walla University. Addressing a lack of streamlined communication, the app features an updated menu, announcements, a digital rewards system, and reservation tools. Built with Dart and Flutter and supported by tools like Xcode and VS Code, it includes a dynamic admin interface for easy data management. The project provided hands-on experience in software development and UI/UX design, and aimed to improve both customer engagement and internal workflows.

Home & Menu

The Home and Menu pages provide a new mobile space for The Atlas to share news and essential updates. Push notifications have been implemented to alert users of announcements posted on the Home page (Fig. 1). A clean user interface allows users to view merchandise options, baristas, and shop hours. The Menu (Fig. 2) offers a convenient mobile view of available items, enabling customers to browse options before entering the shop. This feature is especially useful during busy times or for those who want to make decisions ahead of time.

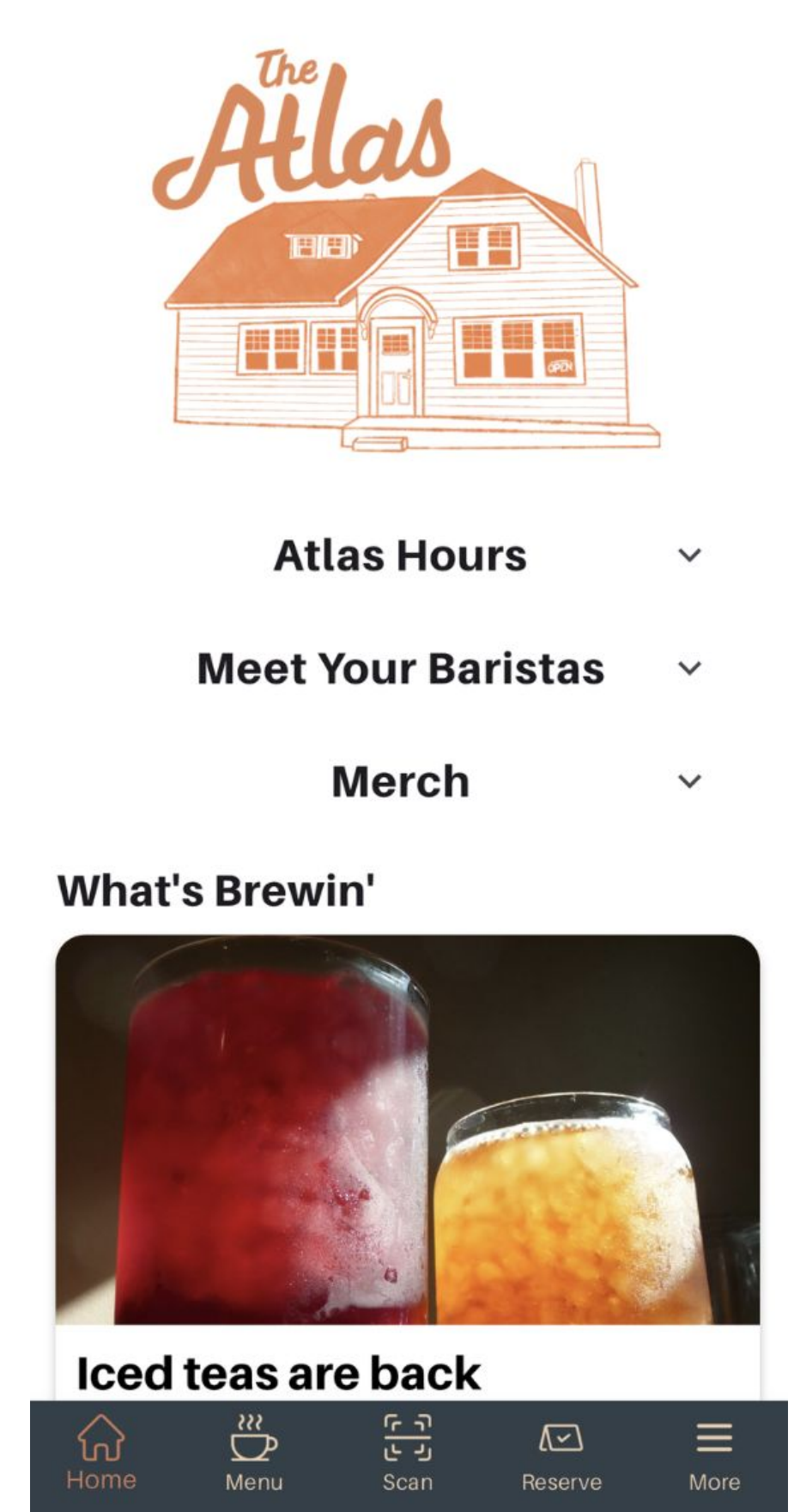


Fig. 1 Home Page

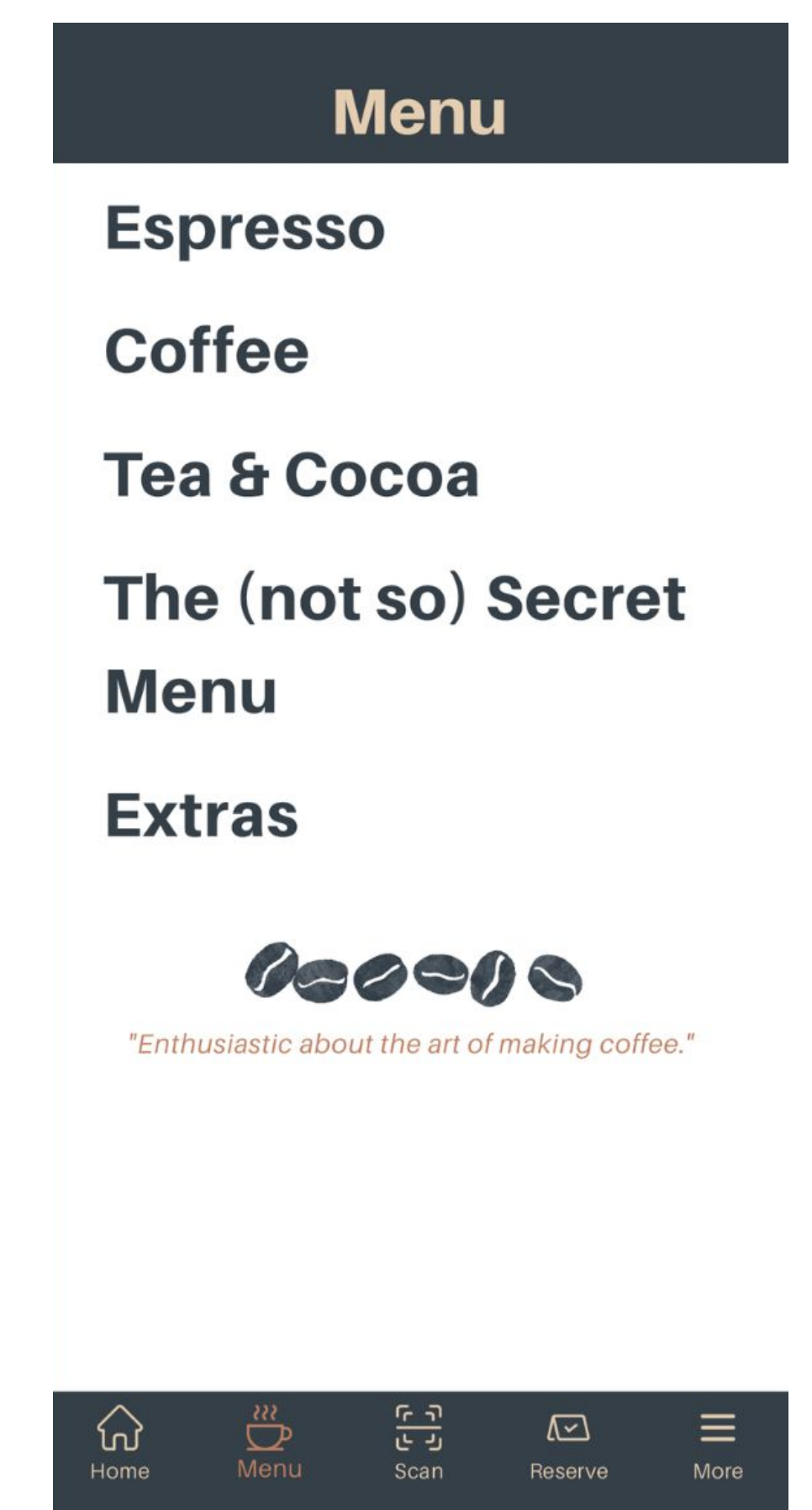


Fig. 2 Menu Home

Rewards & Reservations

Upon reviewing the current system The Atlas uses for its club rewards program, a clear opportunity was identified to improve efficiency by developing a mobile "punch card" system. As shown in Fig. 3, Atlas employees can scan each club member's QR code to issue a "punch," which the system logs as a "bean" for the user.

This new system also streamlines communication regarding reservation requests for various services provided by The Atlas—such as drip containers to go, table reservations, building reservations, and club collaborations. Users can fill out a reservation form (Fig. 4), which automatically sends an email request to the manager.

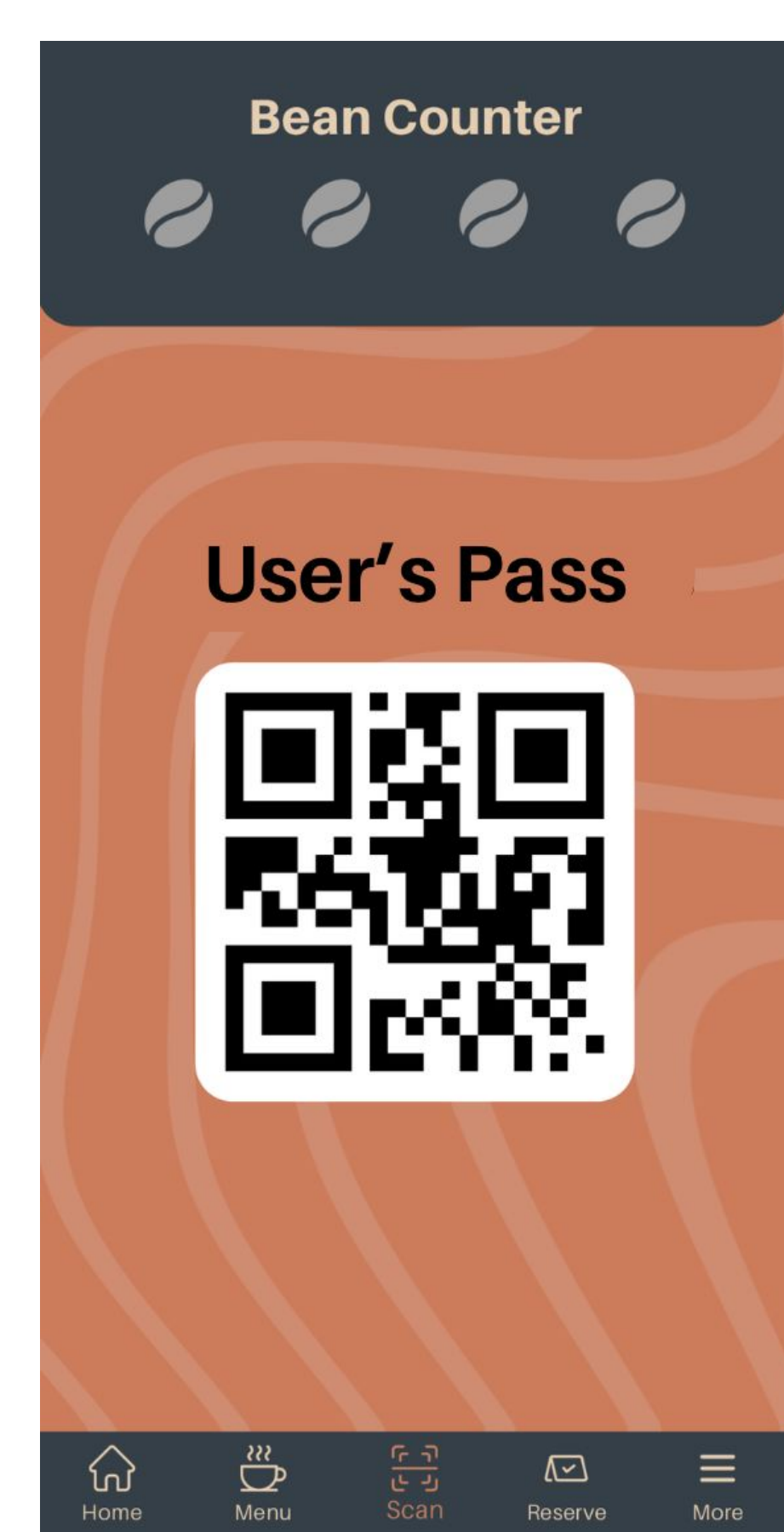


Fig. 3 Reward Scan

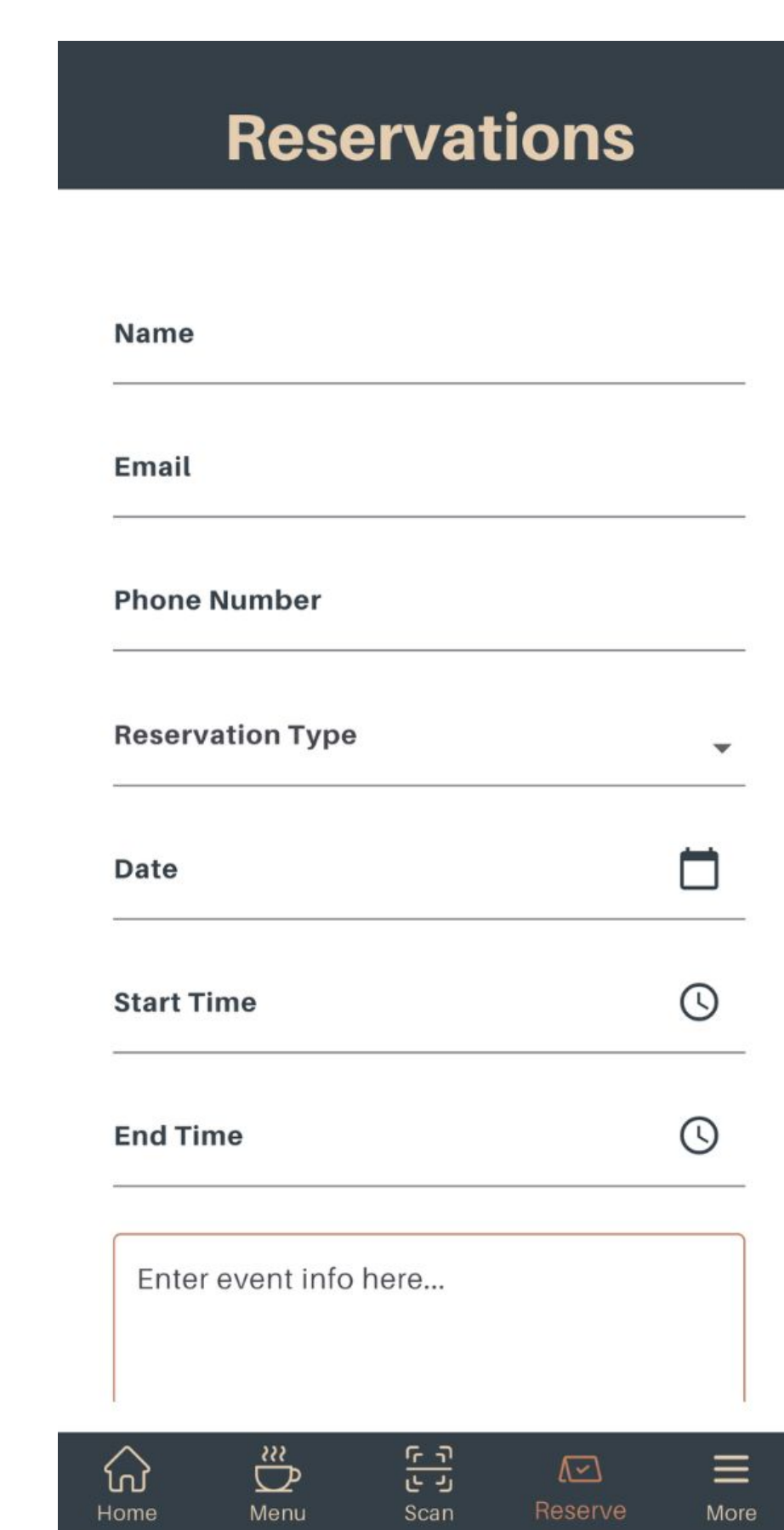


Fig. 4 Make Reservation

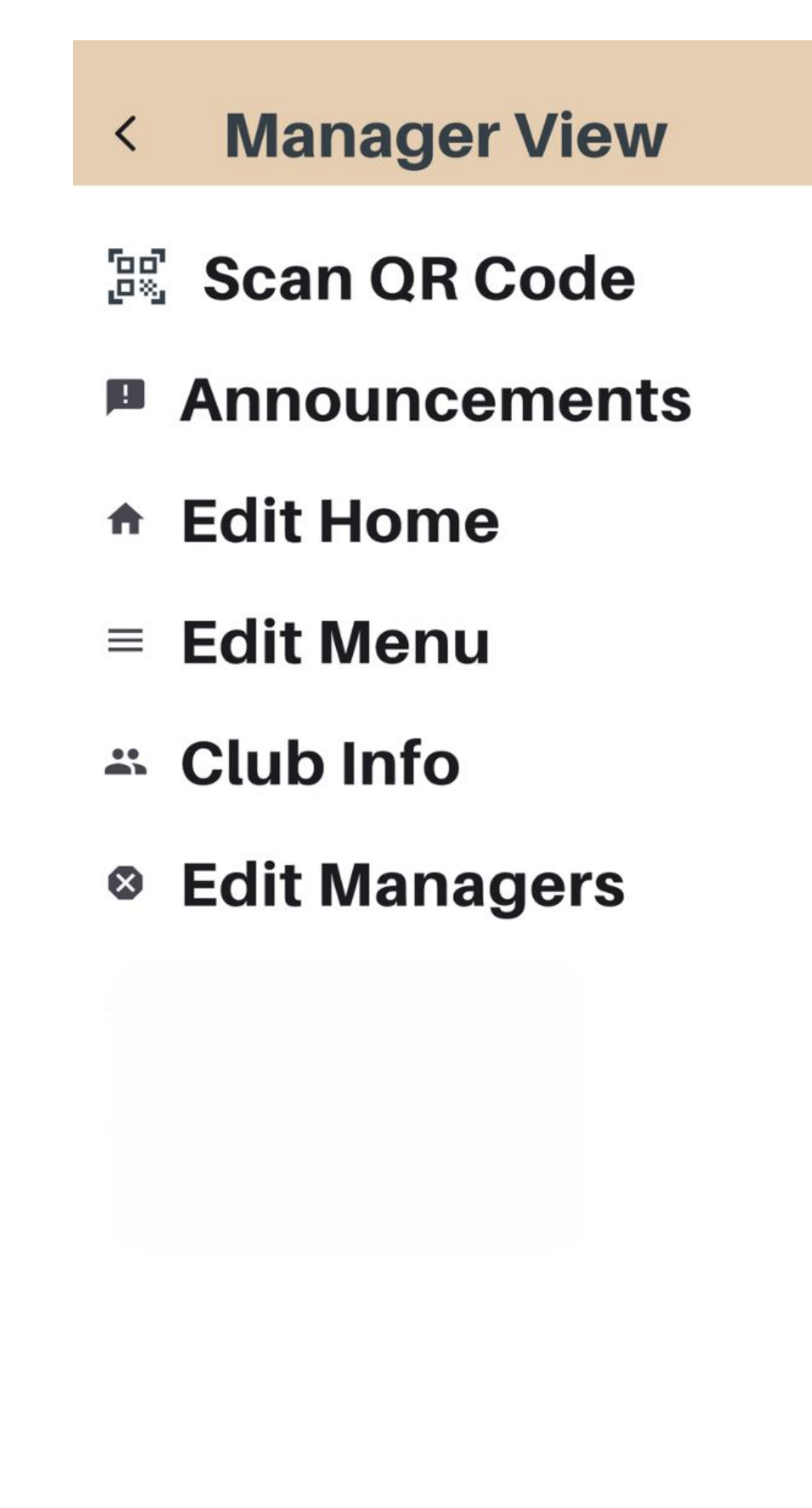


Fig. 5 Manager View

Manager System

With long-term maintainability in mind, the app was built to be dynamic and easily editable by future managers. A clean administrative GUI (Fig. 5) enables managers to update and delete all relevant information—including access to the rewards system, menu categories and items, baristas, hours, merchandise, and announcements. This system ensures that future managers can log in and keep the app up-to-date with minimal effort.

Server & Data

A secure, object-oriented server backend for the Atlas app was implemented using Dart classes to manage data models. Hosted on a Proxmox virtual machine via the CS department, the server exposes RESTful APIs for full create, read, update, delete operations, with role-based access control. Single Sign On with Multi-Factor Authentication was added for secure sign in via WWU logins and a GitLab-based CI/CD for automated testing and deployment. All data is versioned, serialized to JSON, and stored on disk. Finally, server activity is logged for debugging and cybersecurity monitoring. The authentication and general client server relationship is displayed in Fig. 6.

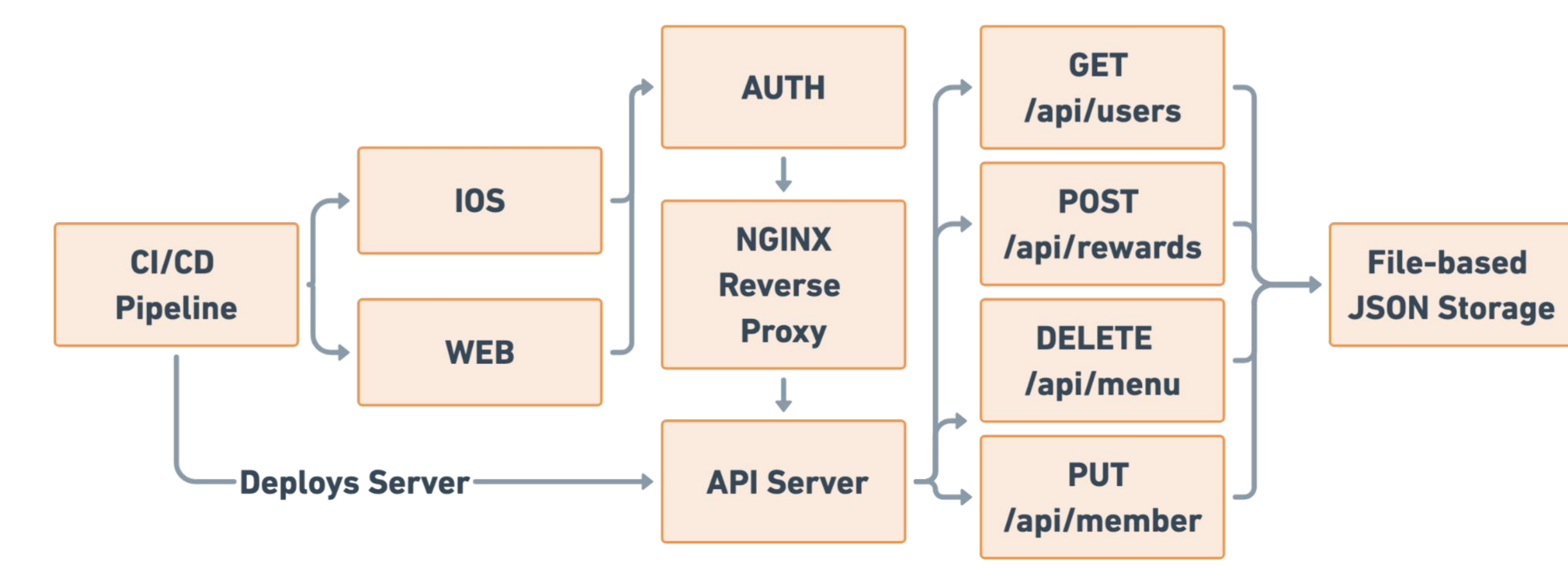


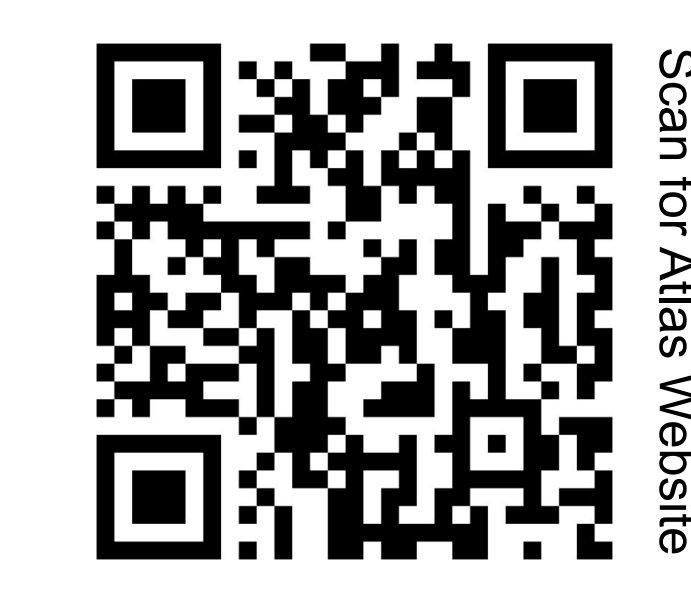
Fig. 6 Client Server Flow

Summary

A successful cross-platform app was developed for The Atlas, a student-led coffee shop at Walla Walla University. The app features a live menu, announcements, a digital rewards system, and reservation tools—all managed through an admin interface. Built using Flutter and Dart, the app is fully functional and currently in testing with Atlas leadership. Next steps include gathering feedback from baristas and customers, refining the user experience, and finalizing distribution through the iOS App Store.

References

Mentors: Professors Foster and Dr. Carman
Tools: Dart & Flutter, CS Department Servers
Customer: Atlas, ASWWU



Scan for Atlas Website