

PROJECT PROPOSAL: RESTAURANT FINDER MOBILE APPLICATION

John Pretz SWENG861 Prof: Santosh Nalubandhu FALL Semester 2025

1. Introduction

The course project focuses on designing and developing a fresh mobile application. This project will not only demonstrate skills learned in class in software construction development, API integration, and cloud deployment, but also introduce a unique concept of a Restaurant Finder Mobile Application.

It is not like a common app existing in a platform such as Google Maps or Yelp, this app will be lightweight, cross-platform, and cloud-enabled, with a focus on personalized features like saving favorites across devices. By being open-source, it also demonstrates transparency and learning, making it a unique academic and practical project.

2. Problem Definition

When visiting unfamiliar areas, users often struggle to find quality restaurants that match their preferences quickly. Existing apps offer a vast array of options, but they can overwhelm users with cluttered interfaces, ads, and features that fail to prioritize simplicity and personalization.

This project addresses that gap by providing:

- Quick geolocation-based suggestions tailored to the user's location.
- A minimalist UI for browsing restaurants via list and map views.
- Favorites management, synced securely across devices using cloud storage.

3. Research Insights

Industry leaders like Google Maps and Yelp dominate restaurant discovery. However:

- Google Maps is feature-rich but often overwhelming for simple, quick searches.
- Yelp focuses heavily on reviews and promotions, which may introduce bias or distract from decision-making.
- Zomato (popular in certain regions) is limited by availability and requires account setup for most features.
- Users increasingly want focused, intuitive apps that give them relevant results quickly, without unnecessary distractions.

4. Unique Value Proposition

What makes this project unique compared to industry apps:

- Lightweight & Focused → Prioritizes restaurant discovery with minimal distractions.
- Cross-Platform by Design → Built with React Native & Expo for iOS and Android.

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- Cloud-Synced Favorites → Uses Firebase to allow users to save and access favorites across devices.
- Academic + Practical → Designed as learning, they are open-source and customizable.

5. Technical Approach & Architecture: For the initial diagram, see: <https://github.com/JPretz/sweng861-2025-FALL-project-proposal>.

Architecture Components

- Client (Mobile App): React Native (Expo) for UI, navigation, and geolocation.
- External APIs: Google Maps API & Yelp/Zomato API for restaurant data.
- Cloud Backend: Firebase Authentication & Firestore for user data and favorites.

Workflow:

- 1) User opens app → retrieves current location.
- 2) API call fetches nearby restaurants.
- 3) Results displayed in list + map view.
- 4) User can save favorites → stored in Firebase.

6. Tech Stack

- Frontend (Mobile): React Native (Expo)
- Backend / Cloud: Firebase Authentication & Firestore
- APIs: Google Maps API, Google Places / Yelp / Zomato API
- Deployment: Expo Go (development), Play Store (demo APK)

7. Project Milestones:

See: <https://github.com/JPretz/sweng861-2025-FALL-project-proposal>.

8. Future Extensions

- Advanced filters (price, cuisine, ratings).
- Push notifications for nearby offers.
- Offline support for cached restaurant data.
- AI-based personalized recommendations.
- Social features: reviews, sharing, and ratings.

9. Conclusion

This project will demonstrate mobile development, cloud integration, and API-driven design, while solving a real-world problem: making restaurant discovery faster, simpler, and more personal. The final deliverables will be a working mobile app, hosted source code on GitHub, and documentation showcasing a scalable, user-friendly solution.