



Experience 66

Route 66 Companion





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Route 66 Companion

Our Clients:



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Project Overview

Route 66 Centennial – 2026

Currently: NAU Cline Library Special Collections and Archives in ContentDM

The Problem:

- 📍 No location-based discovery
- 📺 ContentDM is static, desktop-oriented

Client Need:

A mobile, GPS-aware platform that connects Route 66 archival content directly to a traveler's real-time location



Solution Overview



Mobile app that connects travelers to Route 66 history **based on their real-time location**



Integrates NAU's **Special Collections & Archives (CONTENTdm)**



Displays nearby **Points of Interest (POIs)** with images, stories, and historical context



Supports **offline access** to content



Includes features like **search, navigation, and audio playback (TTS)** for accessibility

Impact

This solution transforms static archives into a real-time, location-based experience, delivering relevant stories at the right place and time while making cultural history more accessible and engaging for travelers.

MVP (Minimal Viable Product)

- Interactive map with live GPS user dot
- Geofencing for Route 66 POIs
- POI cards with images, short description, and oral narration
- Offline access for low-coverage areas
- Simple, clean UI

High-Level Review

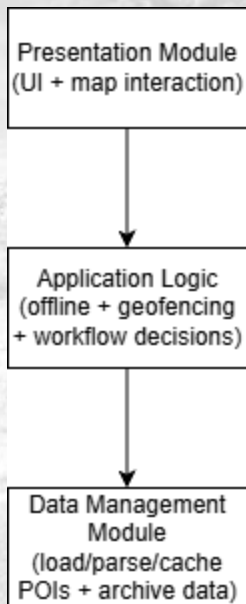
- Precise location permission
- Geofencing stability + detection
- Entry triggers + notifications
- Audio narration + cached content

To be able to do this:

- We had consistent communication with clients for CSV accuracy
- Apps automatic triggering of content
 - Stationary or in transition
 - Auditory Component
 - Geofencing capabilities

Key requirements

Architecture



Layered Architecture

Presentation

Displays Route 66 POIs, handles onboarding, updates UI based on system events.

Application Logic

Manages business rules, geofencing, location services, and system state.

Data Management

Supplies POI data, supports offline functionality, structured for future backend integration.

Design Outcome

Deliberate, modular architecture that is scalable, maintainable, and ready to support full implementation and future expansion.

Testing Plan

Testing Strategy

- Unit → core logic
- Integration → system connections
- Usability → user experience

Process

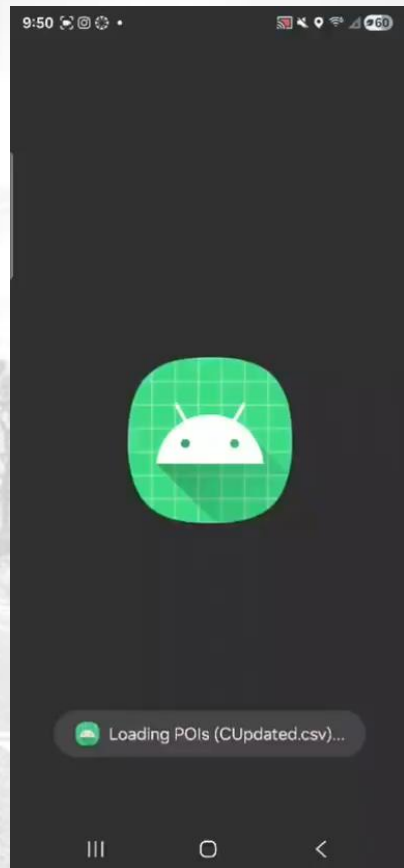
- Continuous testing across cycles
- Feedback → fixes → refinement

Real-World Testing

- Live testing on the road
- Ensures accuracy and real-time updates



- Geofence alerts — POI ahead + distance
- Listen · More (archive) · Navigate — from notifications and in-app card
- Live map — POI markers, geofence circles, readable labels
- Search, list, map tap — open any landmark fast
- Offline-ready — cache, onboarding, settings, geofence monitoring
- Dark mode



App Demo

Challenges and Resolutions

Database Quality & POI Management

- Initial dataset contained duplicate and inconsistent entries.
 - Cleaned and validated the database to ensure only accurate, unique POIs are displayed.

Search Functionality

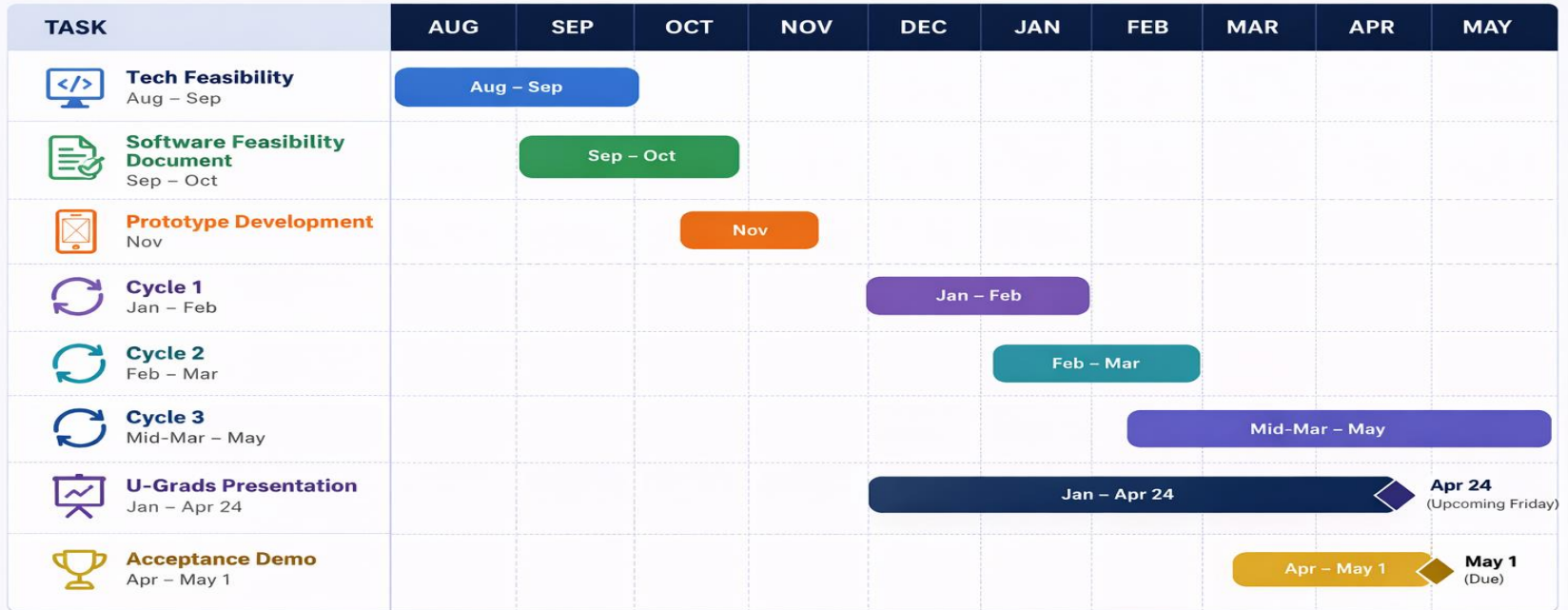
- Implementing responsive and accurate search filtering required balancing performance and usability.
 - Implemented keyword-based filtering after fixing DQ and POI management

Distance Calculation Accuracy

- Calculating user distance to POIs did not always reflect real travel paths.
 - Basic distance calculations implemented; planning integration with routing APIs for improved accuracy.



Route 66 Companion App Capstone Project



Note: Months are shown for clarity. Specific dates are noted for key milestones.

Gantt Chart

Future Work



Cross platform Support (IOS)



Expand through full route 66 coverage



Deeper content integration
(live data)

Conclusion



- Final product delivered with end-to-end Route 66 POI discovery and geofence alerts.
- Background notifications, map readability, and POI actions (Listen, More info, Navigate) are fully integrated.
- System is stable, user-friendly, and ready for final acceptance.

Thank You!



Any Questions?

