GPS - Chùa Linh Ứng

Problem Alignment

- Visitors lack engaging, multilingual guidance tailored to their preferred language.
- Tourists often have questions during visits but lack instant access to knowledgeable support.

High Level Approach

- Build a wep app for mobile devices, compatible across major browsers and operating systems (OS).
- Enable users to tap on Points of Interest (POIs) for multilingual text/audio guidance.
- Integrate GPS to display the visitor’s live location on the site map.
- Embed an AI-powered chatbot to answer visitor questions in natural language.

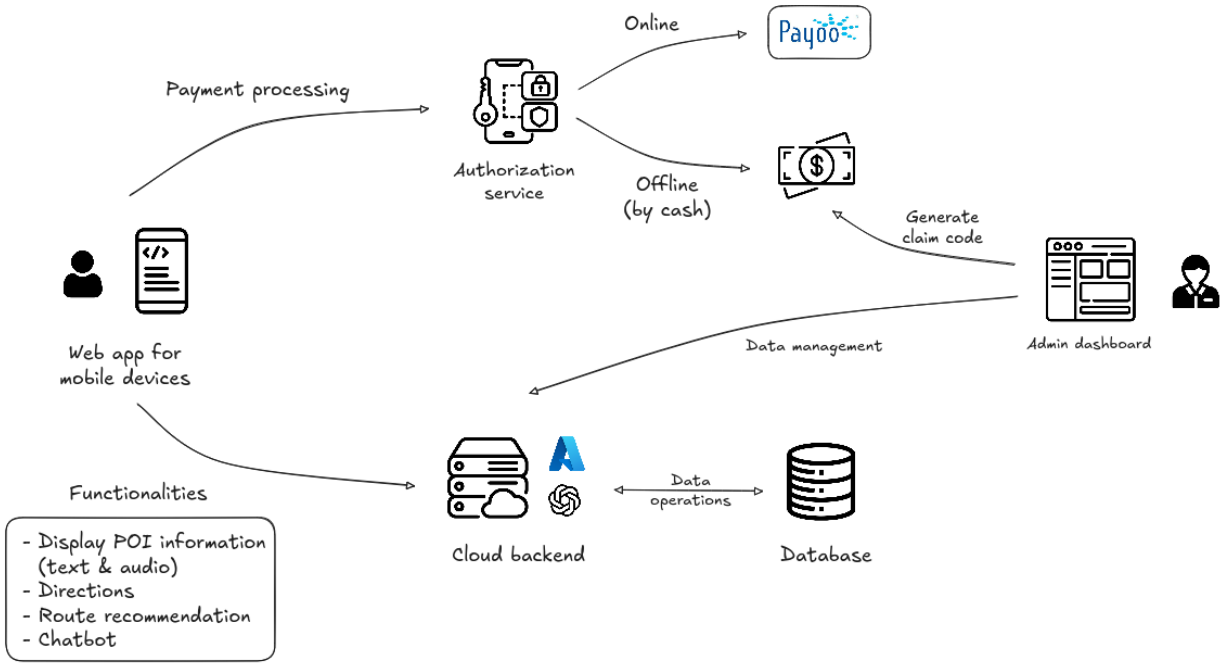
Narrative

- A tourist arrives at Linh Ứng pagoda, scans a QR code at the entrance, and is prompted to pay for access.
- Upon payment (either online or offline), the app opens and shows a live map with nearby POIs.
- As the tourist explores, they tap on POIs to hear audio guides and read descriptions in their preferred language.
- If they have questions, they ask the built-in chatbot, which responds instantly with relevant info.

Goals

- Provide an automatic and immersive narration experience for visitors at Linh Ứng.
- Integrate GPS technology to automatically play content corresponding to the user's current location.
- Support multiple languages, including Vietnamese, making it friendly for international tourists and independent travelers (no tour guide needed).
- Built-in RAG chatbot system to answer visitor questions in natural language.

Solution Alignment



Key Features

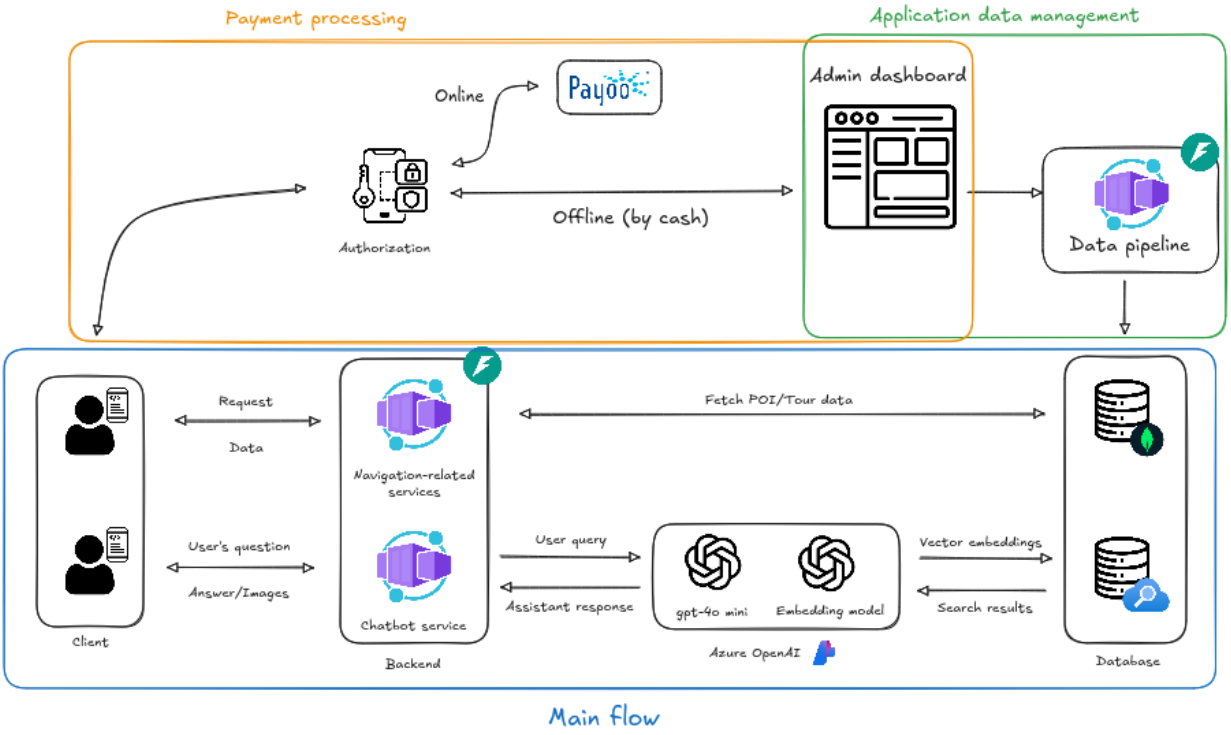
1. *A navigation app that integrates GPS technology to detect the user's current location, highlighting POIs in the proximity.*
2. *Route recommendations for users, consisting of a number of POIs (customizable) and directions to go from one to another.*
3. *A data pipeline that automatically translates text descriptions of all POIs into 15+ different languages, and transcribes them into audios. These are shown to users as they tap on the POIs on the map.*
4. *A database that stores all data generated from the above feature, along with other POI-related information, such as POI's coordinates, range of proximity and thumbnail images.*
5. *An admin dashboard that allows staff to create sessions and modify data.*
6. *A monitoring dashboard to observe system's health and usage information in real-time.*

Future considerations:

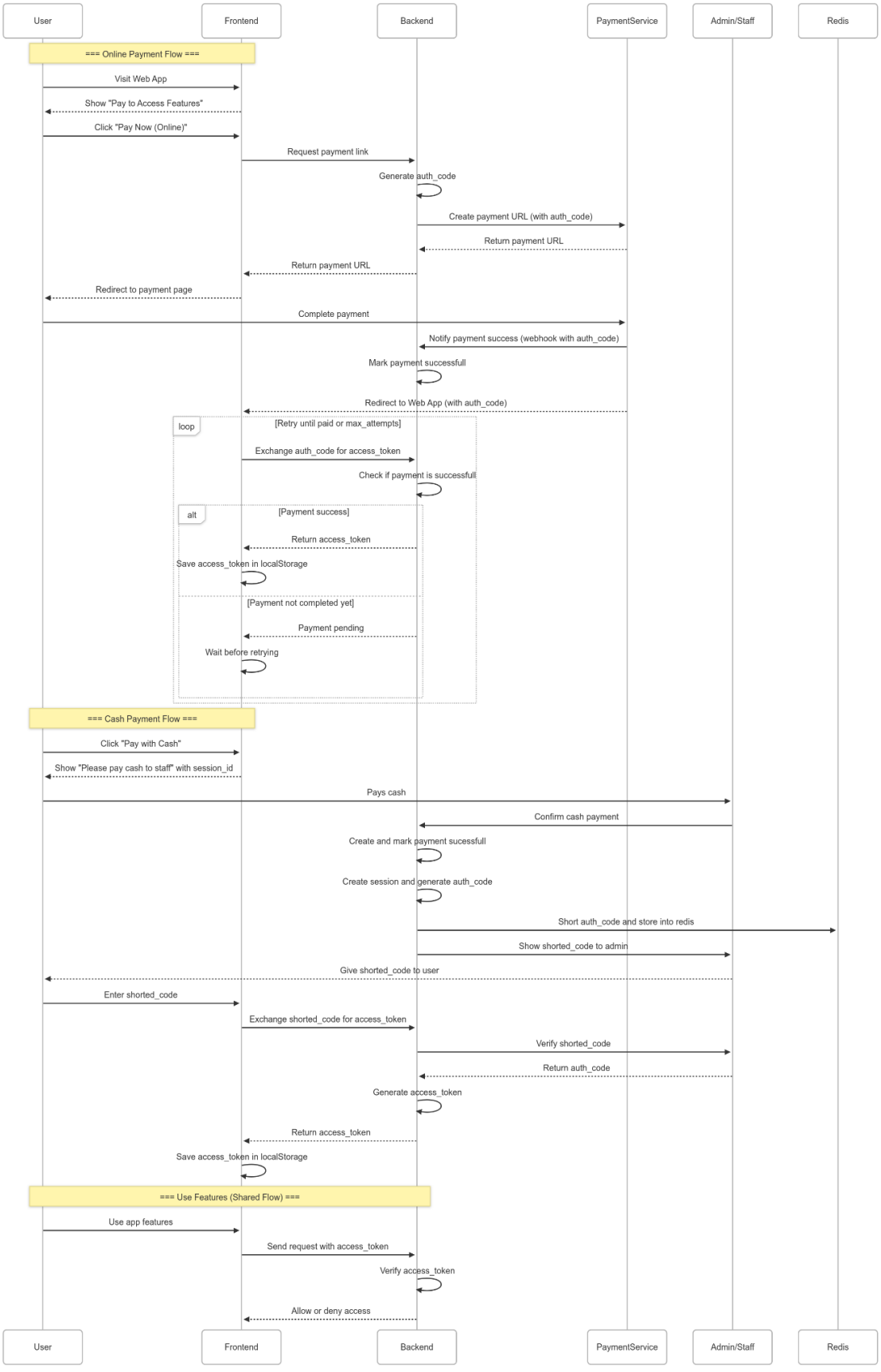
1. *Cache most recent questions and answers for faster performance*
2. *Monitoring: real-time logs track user activities*

Key Flows

- Operational flow



- Payment processing flow


User
Frontend
Backend
PaymentService
Admin/Staff
Redis
=== Online Payment Flow ===
Visit Web App
Show "Pay to Access Features"
Click "Pay Now (Online)"
Request payment link
Generate auth_code
Create payment URL (with auth_code)
Return payment URL
Return payment URL
Redirect to payment page
Complete payment
Notify payment success (webhook with auth_code)
Mark payment successfull
Redirect to Web App (with auth_code)
loop
[Retry until paid or max_attempts]
Exchange auth_code for access_token
Check if payment is successfull
alt
[Payment success]
Return access_token
Save access_token in localStorage
[Payment not completed yet]
Payment pending
Wait before retrying
=== Cash Payment Flow ===
Click "Pay with Cash"
Show "Please pay cash to staff" with session_id
Pays cash
Confirm cash payment
Create and mark payment sucessfull
Create session and generate auth_code
Short auth_code and store into redis
Show shorted_code to admin
Give shorted_code to user
Enter shorted_code
Exchange shorted_code for access_token
Verify shorted_code
Return auth_code
Generate access_token
Return access_token
Save access_token in localStorage
=== Use Features (Shared Flow) ===
Use app features
Send request with access_token
Verify access_token
Allow or deny access
User
Frontend
Backend
PaymentService
Admin/Staff
Redis

Key Logic

1. *POI information retrieval*

*The whole application database, including all information about every POIs, is loaded onto frontend side once the user finishes the authorization process. The frontend **NEVER** sends any request to fetch data afterwards.*

2. *Multilingual Content Delivery*

All content (text and audio) is pre-translated into 15+ languages. User selects their preferred language using a small circle icon on the top right corner. Language preference dynamically controls displayed content and audio playback.

Launch Plan

TARGET DATE	MILESTONE	DESCRIPTION
2025-05-16	Pilot	Preliminary testing onsite

Appendix

Changelog

DATE	DESCRIPTION

Open Questions

FAQs