Temple Ticket Booking System.

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Introduction :

OverView :

Welcome to the documentation for the Temple Ticketing System app. This documentation offers a thorough overview of the functionality, features, implementation specifics, and architecture of our ticket booking system, which is intended to simplify visitor administration at the Temple.

Problem Statement :

Design a modern ticketing system for the Temple to streamline visitor management. Including this special idea earns participants extra points. Features should cover online ticket booking, real-time updates on visitor count, waiting time notifications, and QR code generation for tickets. Explore blockchain for secure and transparent transaction records.

Purpose :

With the ability to book tickets quickly and easily, check visitor numbers in real-time, receive alerts about waiting times, and validate tickets using QR codes, the Temple Ticketing System seeks to completely transform the way visitors engage with the temple. Furthermore, by incorporating blockchain technology and cryptographic encryptions, we can guarantee safe and open transaction records, which increases responsibility and trust in the ticketing process.

Objectives :

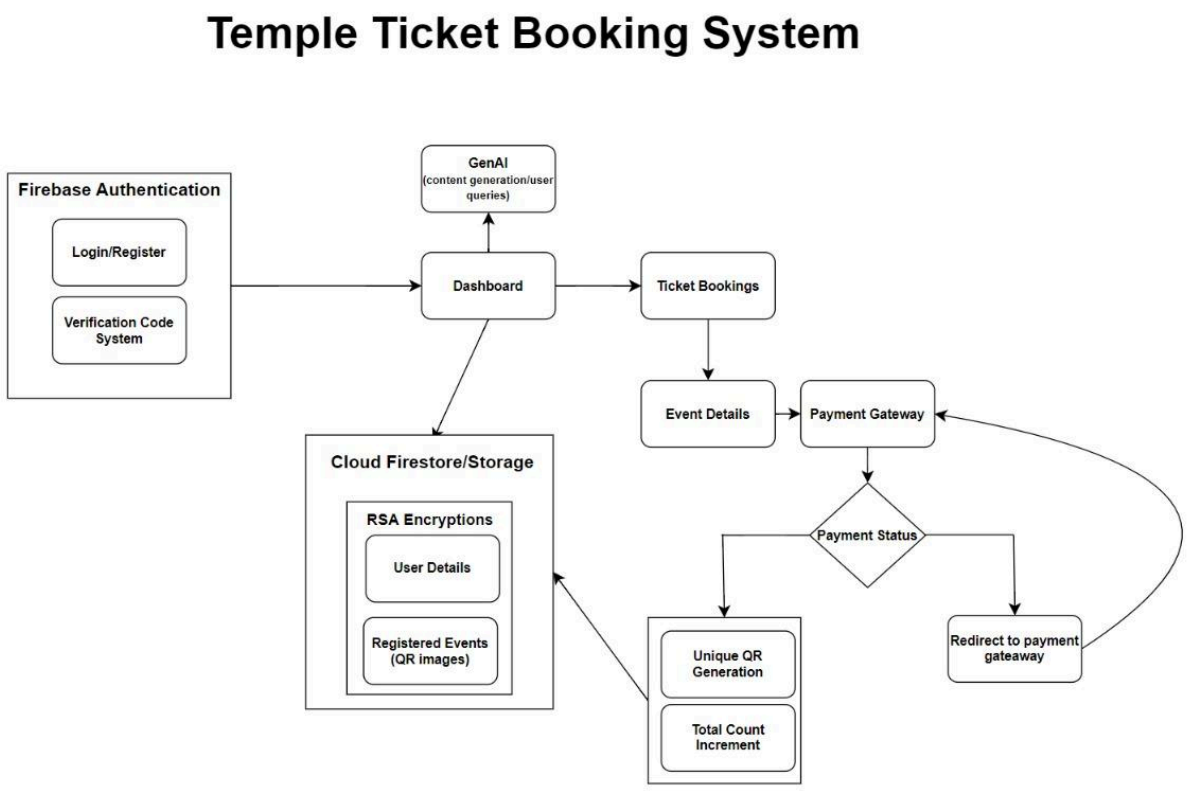
- Give visitors a convenient and hassle-free ticket purchase experience.
- Give temple managers access to real-time data on visitor volume and income production.
- Enhance security in ticket transactions through cryptographic encryption.

System Architecture :

OverView :

The Temple Ticketing System's architecture is built to allow for smooth communication between different parts, resulting in effective visitor management, secure transaction processing, and ticket booking. The architecture consists of multiple interconnected modules that cooperate to offer visitors a reliable and scalable solution to book tickets.

Work Flow:



Components :

Frontend Application (Flutter) :

The frontend application is developed using Dart language and the Flutter framework. Flutter provides a cross-platform mobile application interface for visitors to interact with the ticketing system. It facilitates ticket booking, QR code generation, and real-time updates on visitor count.

Backend (Firebase) :

Firebase, a cloud-based platform that provides a range of services including real-time database access, authentication, and cloud functionalities, powers the backend. Requests for ticket bookings, user authentication, and real-time data updates between the database and the frontend application are all handled by Firebase. It offers a dependable and scalable backend operations management system that guarantees excellent performance and availability.

Blockchain Network :

This part keeps an immutable and decentralized record of all ticket transactions using blockchain technology. By offering a tamper-proof record of every transaction, it improves security, transparency, and confidence in the ticketing process. The frontend and backend components use the Flutter framework and the Dart language, respectively, while the blockchain network connection is accomplished through the use of suitable blockchain platforms and smart contracts for recording transactions.

Integration of Features :

Online Ticket Booking :

To enable ticket booking transactions, the Firebase and the Flutter frontend are inter-connected. Cloud Firestore Database and Firebase Authentication are used to manage and store user data securely.

Real-time Updates :

With the help of FireStore Database, the backend can keep an eye on waiting times and visitor counts continuously, updating the frontend application in real-time to give users accurate information.

QR Code Generation :

The Flutter frontend application creates a special QR code upon ticket booking that is connected to the transaction ID kept in the Firestore Database. The digital admission ticket to the temple is this QR code.

Blockchain Integration :

The blockchain network records every ticket transaction, guaranteeing the immutability and transparency of transaction records. To confirm the legitimacy of tickets, QR codes are cross-checked against the blockchain.

Current Status :

Overview :

This section gives a summary of our Temple Ticketing System app's current state, emphasizing development progress, major features added, continuing projects, and upcoming milestones.

Development Progress :

- The frontend application is now in an advanced stage of development. Important functions including real-time visitor counts, Unique QR code generation, Ticket booking Payment Gateways, Generative AI Integration, have been put into practice and tested.

- The frontend application has been successfully merged with the Firebase. While real-time data updates and ticket booking features are fully working, user authentication still needs to be implemented.

Ongoing Activities :

- **User Integration:** Efforts are being made to guarantee smooth login and registration procedures and to resolve problems with user authentication capabilities, putting safe authentication techniques into place, and incorporating user profiles into the ticketing platform.
- **Blockchain and Cryptography Integration:** Blockchain technology has yet to be implemented to ensure secure transactions. The integration of the blockchain technology with the ticketing system is currently the main focus. This entails making certain that blockchain elements within the ticketing system can be securely accessed and interacted with by authenticated users. We

have a developed a prototype for RSA Encryption, which streamlines the process of securing User data and transactions.

Future Milestones :

Fine Tuning Chat Bot :

- integrating a chatbot for customer support into the Temple Ticketing System app to offer users immediate help and support.
- The chatbot's functions will include responding to often asked questions, informing users about temple offerings and activities, and helping users with ticket-related inquiries.
- Combining machine learning methods with natural language processing (NLP) to improve the chatbot's comprehension and response to user queries.

Blockchain Integration for Secure Transactions :

- Integration of blockchain technology to keep all ticket transactions in an immutable, decentralized ledger, guaranteeing the integrity and transparency of the ticketing process.
- Employing cryptographic methods and smart contracts to safeguard ticket transactions and stop fraud and manipulation.

Admin Login for Real-time Data Updates :

- Creation of an admin login function to give temple managers access to data updates and insights in real time through the Temple Ticketing System app.
- With the admin login credentials, administrators can check ticket sales, keep an eye on visitor numbers, and examine analytics statistics through a dashboard interface.

- Role-based access control (RBAC) will be integrated into the app to guarantee that only authorized administrators can access sensitive data and carry out administrative duties.

Conclusion :

The Temple Ticketing System app transforms the temple's ticketing and visitor management procedures. It provides consumers with a smooth experience with features including safe transactions, real-time updates, and ticket booking. Efficiency and security are guaranteed by the integration of technologies like Flutter, Firebase, and blockchain. Future additions will boost functionality even more, such an admin login and a service chatbot. All in all, the software optimizes temple operations and improves the visiting experience.

* click here to watch the demonstration video.