TICKETLESS ENTRY SYSTEM TO MONUMENTS/MUESUM

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Abstract

In today's world which is technology-driven and is rapidly converting into a digital web to improve and enhance the efficiency of daily tasks in almost every field, this trend is best shown by our QR-based entry system, an online e-ticketing platform that's revolutionizing the museum visiting experiences.

With the emergence of smart cities, this system to access monuments and other sites is not just an option, but a necessity to keep up with the fast-paced modern world. Compared with the traditional system of paper tickets, which cost around 23000 crores, the cost of producing tickets is almost negligible. Moreover, the flexibility it provides is par excellence by enabling online reservations, choice of preferred time slots and simple cancellations as well.

Our software seeks to provide us with modern, efficient and visitor-centric experiences by including services like guided tours and exhibitions based on augmented reality, as a result facilitating better accessibility to cultural enrichment.

Keywords: Digitalization, Smart Ticketing, Smartphones, App Integration & Identity Verification.

[I] Introduction

Digitalization is making great changes in daily life. One of the most longtime interesting solutions is to do ticketless entry in a museum and heritage site. Such a system would be incorporated with mobile, cloud-enabled tickets, eliminating paper tickets and abolishing manual verification.

It would allow people to book their tickets, choose time slots, and get their e-tickets via email or mobile app-without all those hassles-so that it would be possible to bring people better convenience with security.

Obvious benefits include reduced administrative overhead and costs, shorter waits and easier access to improved customer satisfaction. It gives ticketless systems to those museums even more valuable insights into visitor behavior and thus more personalized marketing plans. Additional services like guided tours and special exhibitions can further enrich the entire experience for visitors in enhancing cultural accessibility. Smart ticketing will be a revolution for public visitation systems in India, which ranks number one in mobile uptake and digital

innovation in the world today. Making them more modern and bringing places closer to the public will make visiting places very simple and efficient and, most importantly, enriching the experience of the public at large.

[II] <u>Literature Review</u>

Bookings are registered and then available tickets checked. Users do not like this because it makes them stack a lot of time.

This flexible system under design shall require verification only at the time of the booking and not at the very start itself. Thus, even guest users could check ticket availability without having to go through some unwanted process.

In addition, tickets are generated as encrypted QR codes that can be viewed within the app or savable by screenshot for future verification. The biggest advantage over this system instead of the traditional way commonly known for SMS-based ticketing is that their QR code images can handle above that proves to be a means of ticket delivery without being compromised. Thus, with optimized booking and post-booking verification procedures, this system increases accessibility and user experience while bringing ticketing efficiency to visitors and venue administrators.

[III] <u>Proposed Model</u>

This proposal aims at developing a completely digital ticketing system that will be made available via a mobile application for easy, user-friendly, and robust interface for museum visitors. Some of the main features of the application include:

1. <u>Ticket Booking</u>: Enter the required museum information, check the availability of tickets, and proceed to book after verifying your identity with a registered account.

2. <u>Tickets Status Viewing</u>: It allows users to log in to their accounts using valid credentials to be able to view ticket status in real-time updates.

3. <u>Tickets Cancellation</u>: Logged in users can request a cancellation of their ticket using their authenticated session.

Increased operational efficiencies would enable streamlined booking through integrated user detail bookings that offer quick transaction processing. After a successful booking, the generated tickets will be in a secure QR code format and will be displayed within the app. Users can screenshot for later validation.

In an automated and safe manner, visitors will verify themselves through this system with biometric authentication solidly linked to a central identity database. Manual validation would be reduced as a result; it will lead to better resource use and minimal risks for ticket fraud.

The Application joins ticketing through QR codes with biometric verification which will ensure completely secure, entirely digital and efficient ticketing for museum activities.
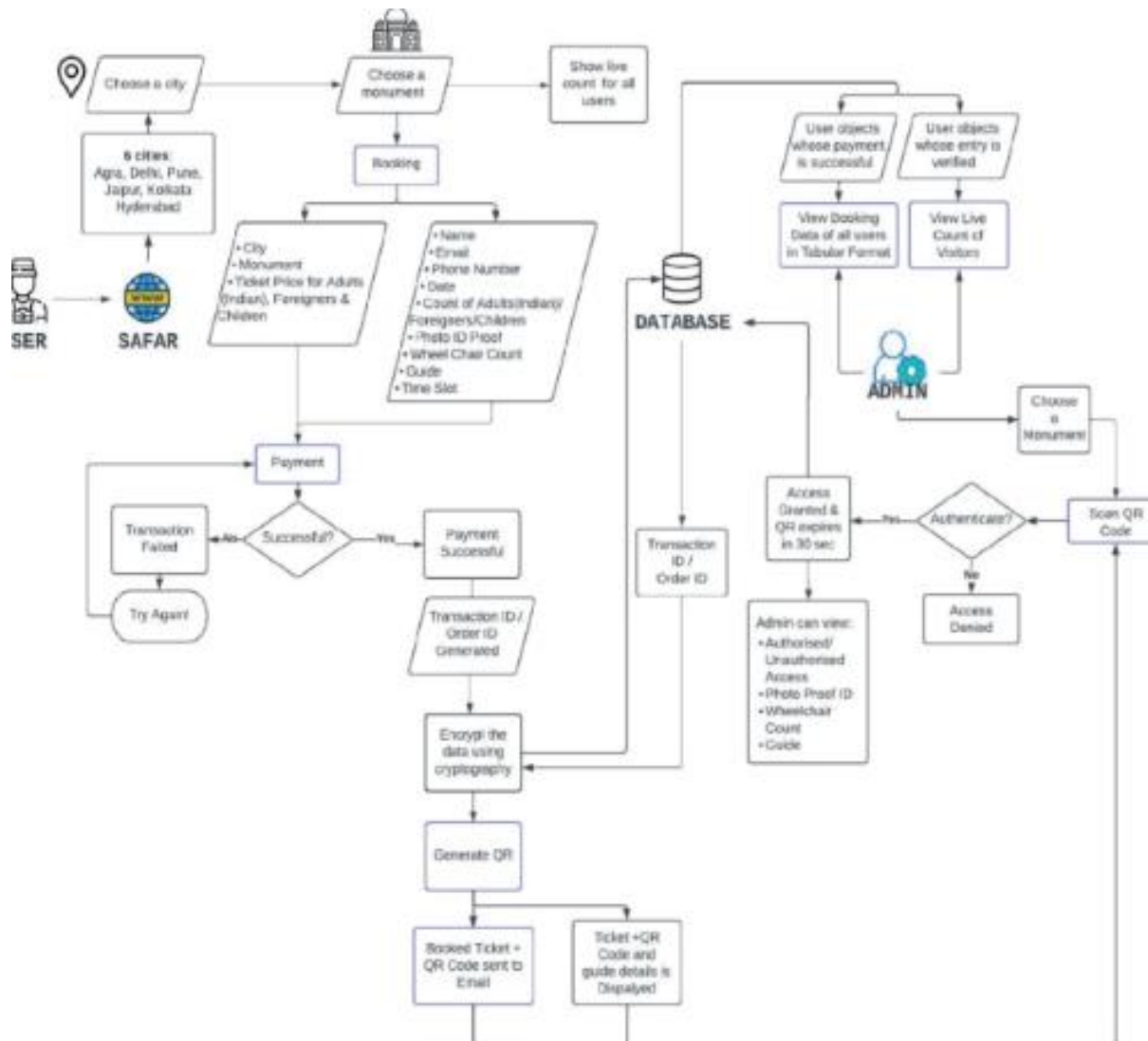
[IV] Technology Used

Following is the list of various tool and technologies that we used and implemented in our project

- **Html**
- **Css**
- **Javascript**

- **Bootstrap**
- **Python**
- **Django rest framework**
- **Django middlewares**
- **VS code**
- **Git and github**

[V] Result

Fig 1- Homepage of the software
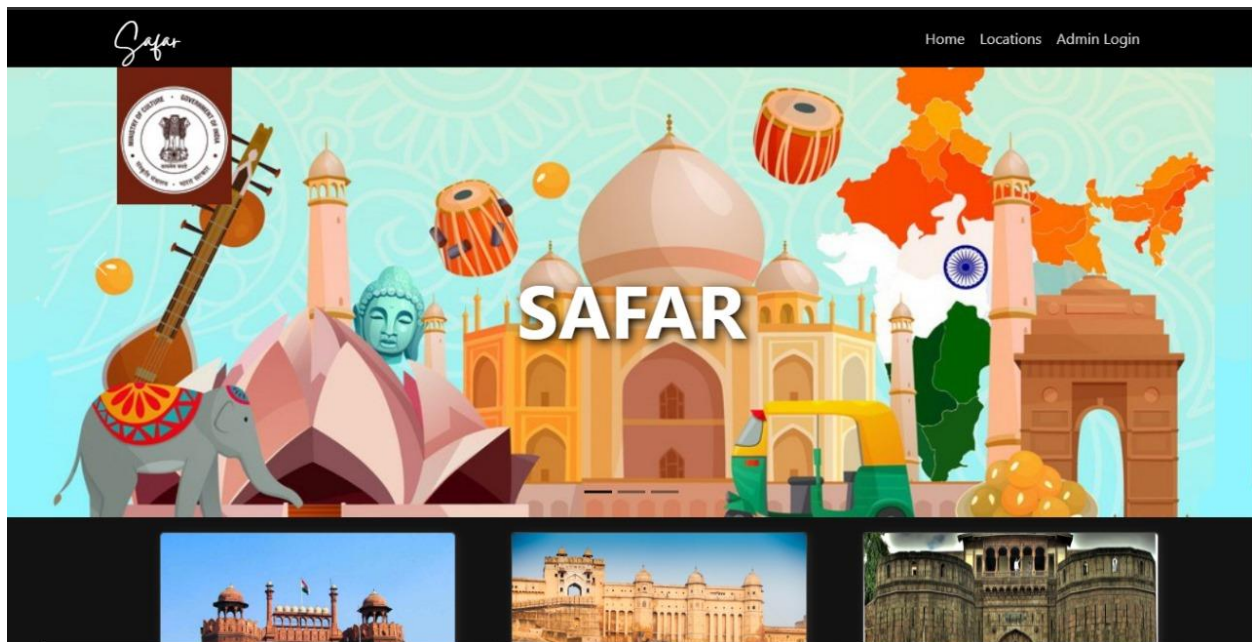
Fig 2- Choosing the city
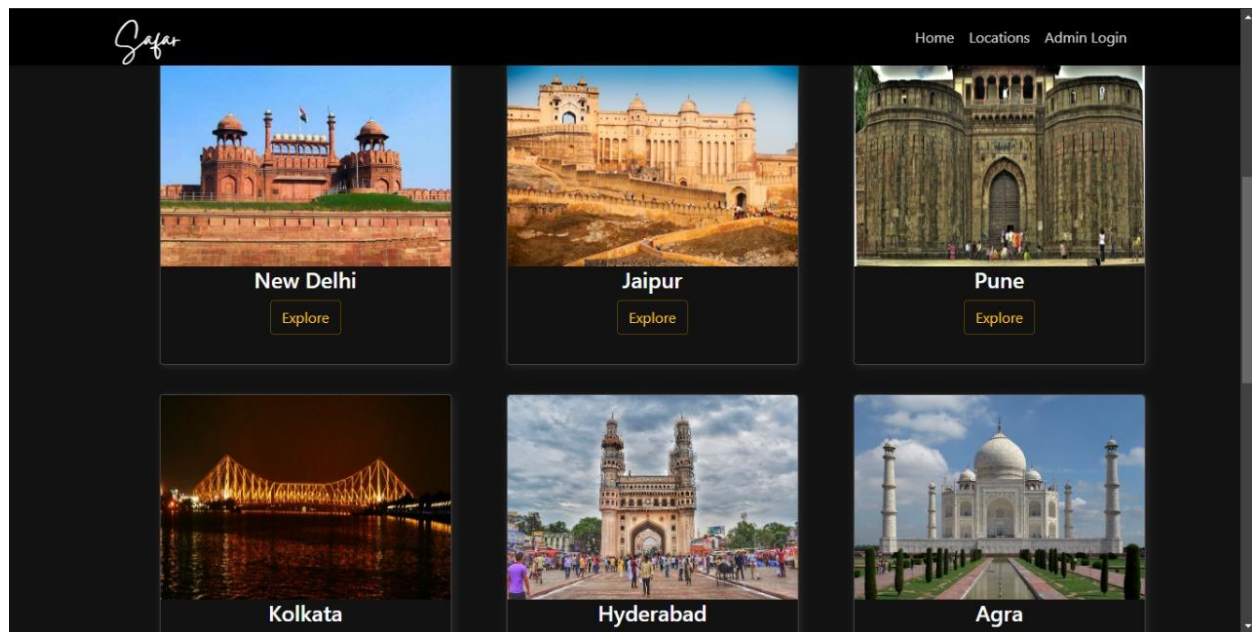
Fig 3,4- Ticket booking process

Fig 5- QR Ticket generated for Hawa Mahal, Jaipur

E-Ticket for Hawa Mahal, JAIPUR

Transaction ID:	order_OuOqydEIhE1Qb4
Name:	dsafd
Identity Type:	Aadhar Card
Identity No:	4487 71284919
Date of Visit:	Sept. 8, 2024
No. of Adults(Indian):	5
Total No. of Visitors:	5
Price:	250

Important Information

1. The e-ticket is not transferable.

2. Entry Fee is not refundable.

3. Visitor shall be required to show photo identity proof in original at the entry to the monument.

4. Ticket is valid only for 30 seconds from the time of entry.

[VI] Conclusion

This web-based ticketing modules offer better security with great authentication mechanisms and cryptographic security. It will also allow users to have more efficiency and integrity of the accessed data, which is the main goal of this project.

These include QR code encryption (AES-256, RSA-4096) and biometric authentication (FIDO2/WebAuthn), which reduced human intervention into the process of ticket validation and identity verification. ZKP and Homomorphic Encryption safeguard the privacy of biometric data in compliance with the law, like the examples under the GDPR and CCPA.

Moreover, the fully digitized ticketing infrastructure contributes most in reducing paper consumption for the sustainable and eco-friendly transport system. However, it is a cloud-native microservices-based architecture encapsulated (Docker, Kubernetes), which adds further scalability, fault tolerance, and high availability. It shows that an e-ticketing system can be secure and efficient offering conveniences to users to lead change in almost all infrastructure to a digital transformation approach.

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