IARJSET

ISSN (Online) 2393-8021
ISSN (Print) 2394-1588

International Advanced Research Journal in Science, Engineering and Technology

International Conference on Muti-Disciplinary Application & Research Technologies (ICMART-2023)

Geetanjali Institute of Technical Studies

Vol. 10, Special Issue 2, May 2023

Ticketless Entry in Heritage Museums

Gautam Anand[1], Jatin Suthar[2], Harshal Jain[3], Devanshi Minda[4],

Nandani Dalsaniya[5], Jyoti Kaushal[6]

Student, Computer Science & Engineering, Geetanjali Institute of Technical Studies, Udaipur, India[1,2,3,4,5]

Assistant Professor, Computer Science & Engineering, Geetanjali Institute of Technical Studies, Udaipur, India[6]

Abstract: Being one of the largest networks of ticketing systems operating over 1,015,000 km and transporting over 22 million visitors daily, e-ticketing systems spend over CR 94,000 to operate efficiently [1]. From the recent proposal for smart cities, ticketing systems are projecting to museums and cultural monuments with the current trend towards digitization, smart ticketing systems are the most of the hour. By using this new web roach, E-ticketing systems will be able to implement Smart Ticketing systems. In today's fast-paced world, long queues and waiting times have become significant deterrents for individuals planning to visit heritage sites. To alleviate these challenges and enhance the overall visitor experience, this paper proposes the development of an online e-ticket paperless portal that integrates predictive crowd analysis and a user-friendly interface.

Keywords: e-ticket, paperless, crowd prediction, visitor management.

I. INTRODUCTION

Ticketless is an online e-ticketing web application that will allow the user to book tickets easily In a rapidly changing world thanks to digitization, technology plays an important role in our daily lives. Technology has the incentive to deliver time- and cost-effective products. Implementing the idea of digitization in the public visitor system could prove to be more profitable. The second largest Indian in the world in the use of mobile devices, websites, and cloud databases helps make public visits more efficient and effective. Most mobile phone users prefer its website as an operating system, so this concept suits the needs of most users. Many sites that are published every year can store visitor information in a cloud database so that it can be easily searched and processed efficiently. The main idea behind this approach to the web is to serve people by providing a user-eco-friendly and hassle-free interface. This website allows you to safely and easily control museum visitors. In addition, there is no need for employees to participate in ticket verification.

II. LITERATURE SURVEY

The existing E-ticketing System Connect website provides an interface for booking tickets only by not even logging into a registered account right from the first screen. This may require a lengthy and time-consuming process for those users who simply want to know the availability of tickets. This idea overcomes a particular shortcoming as it would only require user authentication at the time of ticket booking, making the website more user-friendly for guest guests to check ticket availability. An idea proposed in the paper "Android Application for Ticket Booking and Ticket Checking in Suburban Railways" published in the Indian Journal of Science and Technology provides a view of ticket booking and ticket receipt in encrypted QR code form via SMS [4]. However, this would not be possible because SMS does not facilitate the sending of images, rather only data in the form of texts can be sent via SMS. The proposed idea overcomes this flaw by generating a QR code on the web page screen from which a screenshot can be taken if needed. This screenshot can be used for verification later. This proposed website not only provides more flexibility to guest users to check the availability of ticket details but also allows the ticket to be transmitted in an encrypted and valid format.

III. OVERVIEW

The proposed research aims to develop a QR-based ticketing system with necessary hardware for museums and heritage sites to enhance the visitor experience and crowd management. Traditional ticketing systems can be time-consuming and costly, resulting in long queues and wait times. The proposed system aims to provide a user-friendly and efficient experience for visitors by allowing them to purchase and access tickets using their smartphones through a QR code. The objectives of this research are to reduce booking expenses by eliminating the need for printing and mailing paper documents, improve sales as visitors can book and purchase electronic tickets at any time.

Overall, the implementation of this system has the potential to revolutionize the way museums and heritage sites operate, improving visitor experiences and reducing operational costs associated with traditional ticketing systems. By leveraging technology, the proposed system offers an innovative approach to managing visitor flows and optimizing resource allocation.

IARJSET

ISSN (Online) 2393-8021
ISSN (Print) 2394-1588

International Advanced Research Journal in Science, Engineering and Technology

International Conference on Muti-Disciplinary Application & Research Technologies (ICMART-2023)

Geetanjali Institute of Technical Studies

Vol. 10, Special Issue 2, May 2023

IV. PROBLEM STATEMENT

An e-ticket (electronic ticket) is a paperless electronic document used for ticketing. It can help in better crowd management of museums/heritage sites. Summary: To devise a QR-based ticketing system with necessary hardware for the seamless visitor experience in Museums/Heritage sites. In addition, The prediction of the expected crowd should be added as a feature.

V. OBJECTIVE

The objective of creating this TicketLess site is to reduce booking expenses by eliminating the need for printing and mailing paper documents. It can help in keeping a better record of visitors and can improve sales as a visitor can book, purchase and print out the electronic ticket any time 24 hours a day.

VI. METHODOLOGY

The website is designed to streamline the ticketing process for museum or historic site visitors by providing a simple, user-friendly interface that guides users through the ticket purchasing options. With the aim of reducing paper usage, the website allows users to easily register or login and purchase tickets by scanning a QR code and filling out a form with basic options, such as nationality and number of members. Payment options are flexible, including online payment via UPI or in-cash payment via a secret code. The ticketing system offers two options:

A. Ticket Generation

Through Ticket Generation, users who scan the QR code are directed to a website where they can register/login, fill out the necessary form, and generate a ticket. Once the payment is made, the ticket can be confirmed, and the user can download or capture the ticket as per their preference. This eliminates the need for users to wait in long queues to buy tickets on-site and saves them precious time.

B. *Ticket Confirmation*

With Ticket Confirmation, payment for tickets can be made online or in cash. For cash payments, users must go to the ticket counter and use a security code to pay the required amount. Once the payment is confirmed, users can download or capture the ticket, allowing them to have the convenience of paying in cash while still benefitting from the digital ticketing system.
Overall, the website's intuitive design and flexible payment options make the ticket purchasing process smooth and hassle-free for visitors to museums and historic sites while also helping to reduce paper usage and promote sustainability.

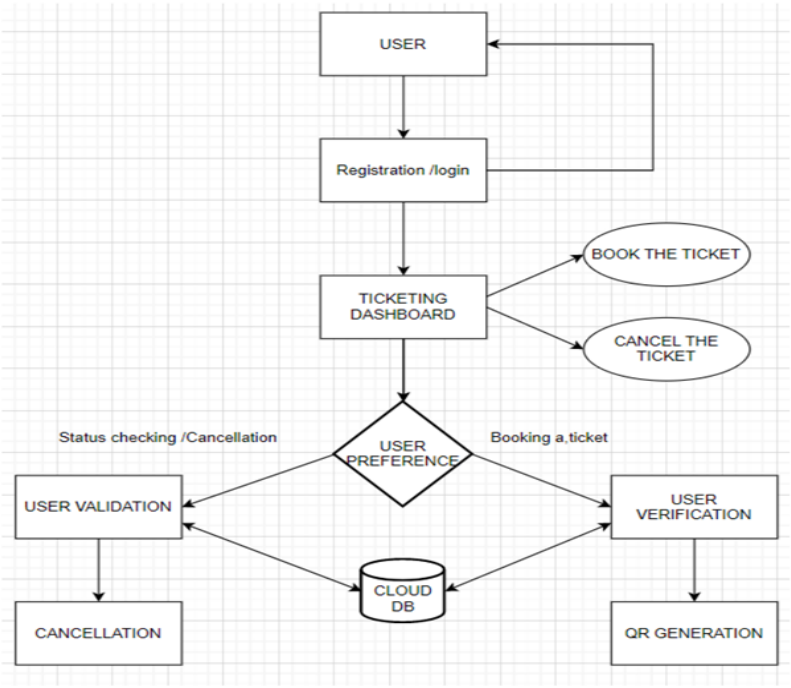


Figure 1: Flow of application

IARJSET

ISSN (Online) 2393-8021
ISSN (Print) 2394-1588

International Advanced Research Journal in Science, Engineering and Technology

International Conference on Muti-Disciplinary Application & Research Technologies (ICMART-2023)

Geetanjali Institute of Technical Studies

Vol. 10, Special Issue 2, May 2023

VII. SOFTWARE IMPLEMENTATION

This system is made using modern development techniques following the frontend backend and database systems. in which the frontend is made using a javascript framework named React, and a CSS framework named TailwindCSS, for the backend we have used the Python programming language and Flask python framework. And finally, to store and manage ticket data we are using MongoDB as the database which is a NoSQL database.

A. TDM [Ticket Desk Module] and a Cash Counter

Well, what if a user is not familiar with E-ticket or online booking system or if customers don't know whether an online ticket booking system exists or not for that heritage site. Looking towards the matter of gravity, we provide an innovative idea that not eventually helps in creating e-ticket but also aids a surveillance system that makes our security more commanding. Solution: [FBET]Facial Based E-Ticketing System, this is an updated digital solution to traditional tickets.

Ticket operator's just need to login the E-Ticket portal and need to capture the users face that stand in a queue. After instant face capture a unique id is registered on the database based on his/her facial biometric. At same instance, he/she needs to make the payment for the ticket. On successful payment the visitor then just needs to visit at entrance where another set of cameras will detect the face and then equate the unique id generated earlier ones with current. On successful id matching he/she will get a direct entry to museum or any heritage site where this system is implemented.

B. GENERATION OF QR CODE

Users can incorporate any mode of payment like debit card or credit card as well as Net banking. Once the ticket is booked, the website will generate a QR code. This QR code contains the ticket details and also the Aadhar card number entered during the user booking process. When visitors enter the museum, they have their tickets verified by scanning a QR code from their mobile phones.

This system also has reliable visitor identity verification that uses a built-in biometric scanner. With the help of an effective visitor identity verification system, we can ensure that an authentic visitor is traveling through the ticket. This visitor identity verification system also ensures that fraud does not occur by digitally transmitting the QR code to an unauthorized passenger.

C. VALIDATION OF THE TICKET

The Quick Response (QR) code submitted by users can be verified by scanning the code using the Quick Response (QR) code scanner at the museum entrance. Code scanning is done by placing the mobile phone on the code scanner, which checks for the ticket details valid by comparison with the ticket data stored in the database. Once this process is complete, ticket verification is complete and visitor identity verification will be required.

VISITOR VERIFICATION Visiting the museum requires verification of identity, as it is necessary to verify that it is a specific visit or another person visiting in the visitor's ticket. Once a visitor's ticket is validated, identity must be verified to ensure that an authentic visitor is visiting. This is achieved using a biometric system. When the biometric data of the visitor is taken as input, it is compared with the biometric data from the Aadhar database

VIII. RESULTS

IARJSET

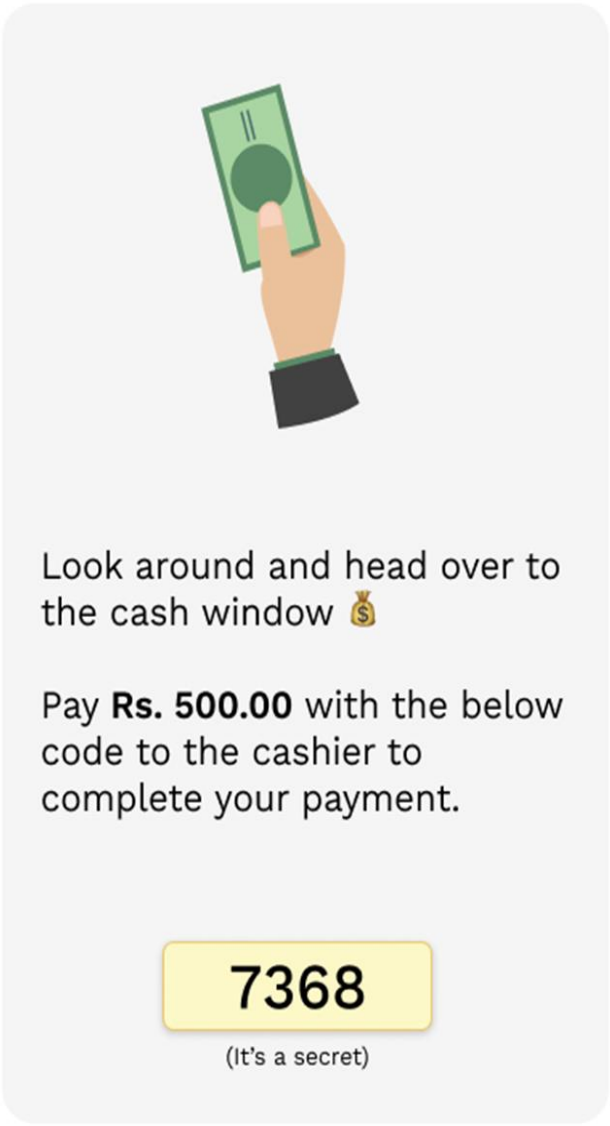
ISSN (Online) 2393-8021
ISSN (Print) 2394-1588

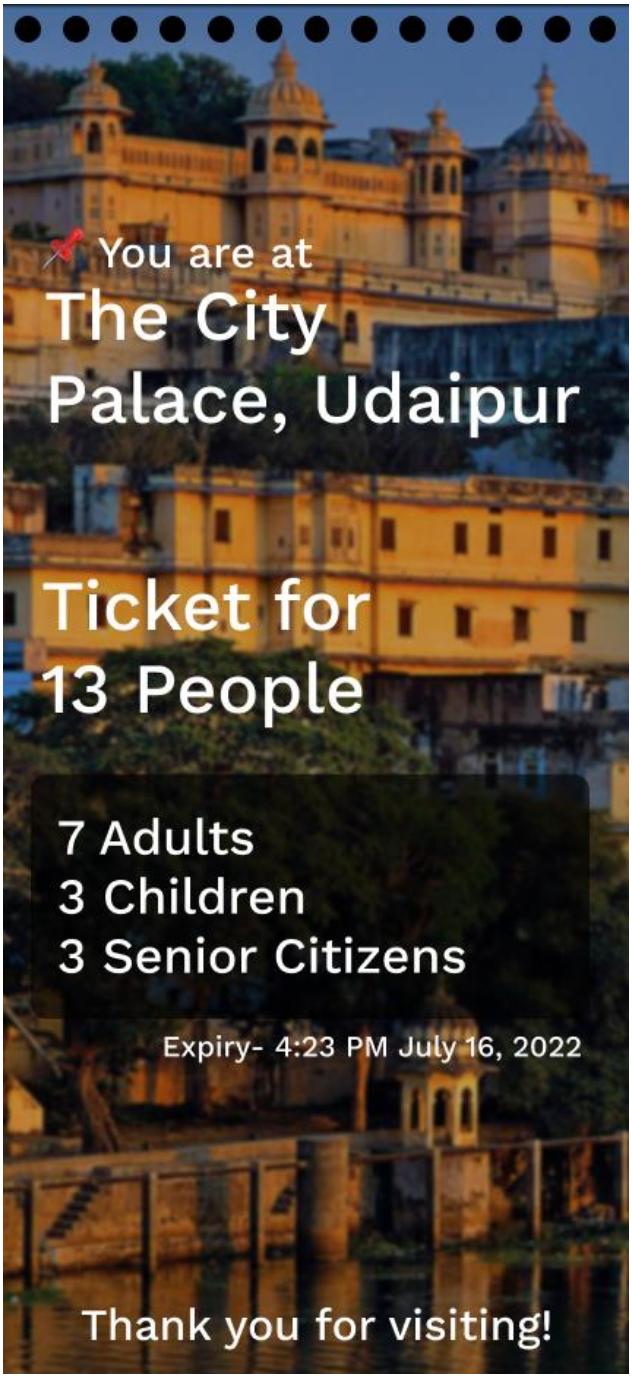
International Advanced Research Journal in Science, Engineering and Technology

International Conference on Muti-Disciplinary Application & Research Technologies (ICMART-2023)

Geetanjali Institute of Technical Studies

Vol. 10, Special Issue 2, May 2023





IARJSET

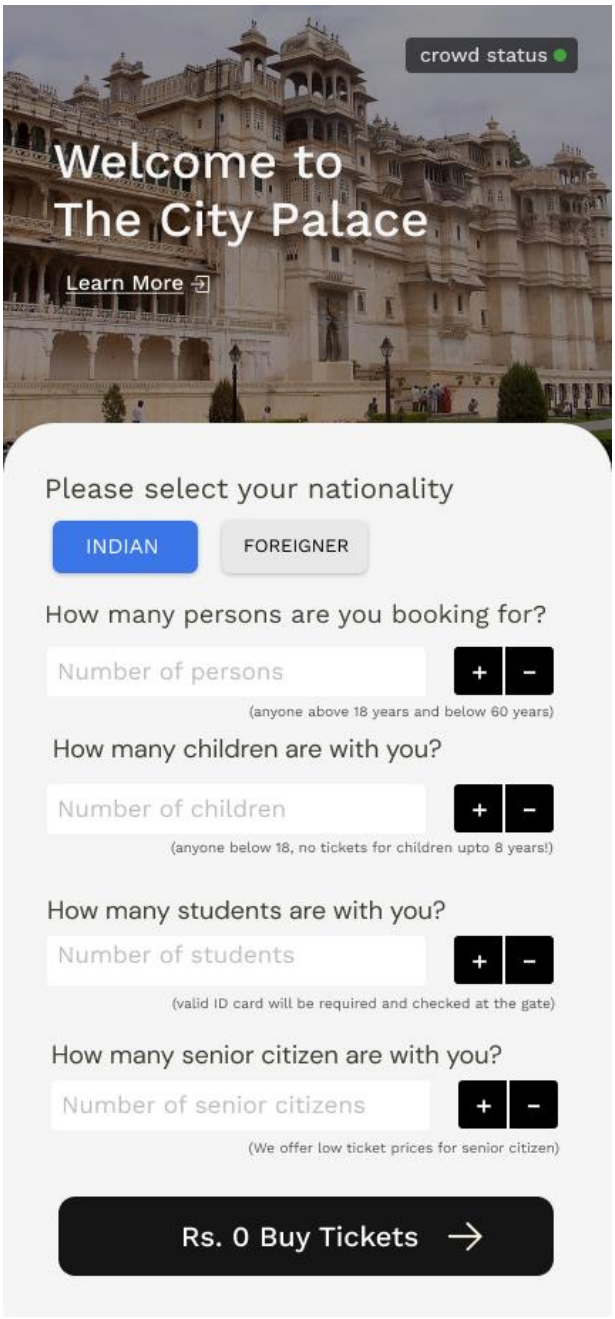
ISSN (Online) 2393-8021
ISSN (Print) 2394-1588

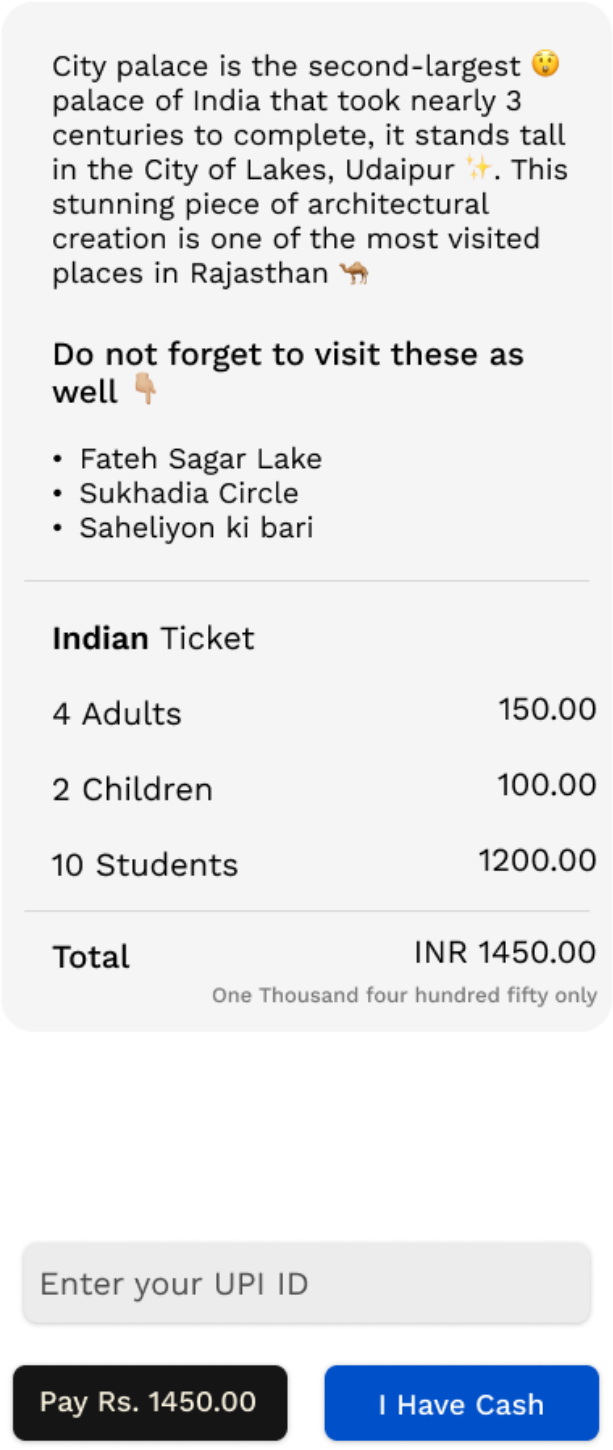
International Advanced Research Journal in Science, Engineering and Technology

International Conference on Muti-Disciplinary Application & Research Technologies (ICMART-2023)

Geetanjali Institute of Technical Studies

Vol. 10, Special Issue 2, May 2023





CONCLUSION AND FEASIBILITY

Based on the economic, operational, technical, legal, ethical, and schedule considerations, the proposed QR-based ticketing system with crowd prediction features appears to be feasible for practical implementation. The project offers economic advantages by reducing paper spending and utilizing cost-effective technologies. It enhances operational efficiency by providing a user-friendly environment for visitors. Additionally, the technical aspects of the project are well-supported by available technologies. However, it is crucial to ensure compliance with legal and ethical requirements and carefully manage the project timeline to ensure successful implementation. Conducting feasibility studies helps to assess the robustness and sustainability of the design, enabling better decision-making and increasing the chances of project success.

IARJSET

ISSN (Online) 2393-8021
ISSN (Print) 2394-1588

International Advanced Research Journal in Science, Engineering and Technology

International Conference on Muti-Disciplinary Application & Research Technologies (ICMART-2023)

Geetanjali Institute of Technical Studies

Vol. 10, Special Issue 2, May 2023

ACKNOWLEDGMENT

We would like to thank our mentor Assistant Prof. **Ms. Jyoti Kaushal** for her continuous support and guidance in making this project a success. Also, we are extremely grateful **to Dr. Mayank Patel**, Head of the Department of Computer Science and Engineering, Geetanjali Institute of Technical Studies for his support. We would also like to extend our appreciation to the creators of every website, application, and feature that we have been inspired or referred to create this project.

REFERENCES

[1] Rishabh Patel, Rahul Raghavendra Joshi, Envision of I-RS (I-Railway System) - Based on Cloud Computing, International Journal of Science, Engineering and Technology Research (IJSETR), Volume 4, Number 1, January 2015.

[2] Sen, S., Patel, M., Sharma, A.K. (2021). Software Development Life Cycle Performance Analysis. In: Mathur, R., Gupta, C.P., Katewa, V., Jat, D.S., Yadav, N. (eds) Emerging Trends in Data Driven Computing and Communications. Studies in Autonomic, Data-driven and Industrial Computing. Springer, Singapore. https://doi.org/10.1007/978-981-16-3915-9_27

[3] Parag Chatterjee, Ashoke Nath, Intelligent Computing Applications in Railway Systems- a case study of Indian Railway Passenger Reservation System, International Journal of Advanced Trends in Computer Science and Engineering, Vol.3, No.4, Jul-Aug-2014.

[4] Abdul Mateen Ansari, Aftab Alam, Mohammed Mujahid Barga, Next Generation E-ticketing System, International Journal of Emerging Research in Management & Technology ISSN: 2278-9359 (Volume-2, Issue-12), December 2013.

[5]Patel, M., Choudhary, N. (2017). Designing an Enhanced Simulation Module for Multimedia Transmission Over Wireless Standards. In: Modi, N., Verma, P., Trivedi, B. (eds) Proceedings of International Conference on Communication and Networks. Advances in Intelligent Systems and Computing, vol 508. Springer, Singapore. https://doi.org/10.1007/978-981-10-2750-5_17

[6] Subarnarekha Ghosal, Shalini Chaturvedi, Akshay Taywade and N. Jaisankar*, Android Application for Ticket Booking and Checking Ticket in Suburban Railways, Indian Journal of Science and Technology, Vol-8(S2),171-178, January 2015.

[7] http://ieeexplore.ieee.org/document/7380586