Ticket Booking System for Edakkal Caves

PROJECT REPORT

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Kannur University

in partial fulfillment of the requirements for the award of

Bachelor of Science

in

Computer Science

by

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(MM21CCSR26)

under the guidance of

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DECLARATION

I hereby declare that the work presented in this project report entitled **"Ticket Booking System for Edakkal Caves"**, is based on the original project work carried out by me under the supervision of **Mr. Sabu O J**, Assistant Professor, PG and Research Department of Computer Science, Mary Matha Arts & Science College, Mananthavady affiliated to Kannur University, Kerala. The project work presented in this report or parts of it has not been presented for the award of any other degree(s).

Place : **Mananthavady**

Date :

Sreelal TS

CERTIFICATE

This is to certify that this project report entitled **"Ticket Booking System for Edakkal Caves"**, is a bonafide record of the work carried out by **Mr. Sreelal TS** under our supervision in the PG and Research Department of Computer Science, Mary Matha Arts & Science College, as a part of his/her Bachelor of Science in Computer Science. The work presented in this project or parts of it has not been presented for the award of any other degree(s).

GUIDE HEAD OF THE DEPT.

Place:

Date:

Viva voce held on: _____

1) Examiner 1:

2) Examiner 2:

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ABSTRACT

The Edakkal Caves Ticket Booking System represents a collaborative initiative between the District Tourism Promotion Council (DTPC) and the Incubation & Innovation Cell at Mary Matha Arts & Science College, Mananthavady. This project, driven by the vision to enhance the visitor experience to the historical Edakkal Caves in Wayanad, Kerala, introduces an efficient and user-friendly ticket booking system. The system comprises two integral components: the Admin App and the User Portal. The Admin App, built with Flutter and Firebase, empowers DTPC agents with on-site booking management and verification capabilities. Simultaneously, the User Portal, developed using ReactJS and Firebase with Razorpay integration, provides tourists with a seamless online ticket booking experience. Visitors can effortlessly navigate the web application, explore details about Edakkal Caves, and reserve tickets for a specified date and time. The integration of Razorpay ensures secure and hassle-free transactions. The historical significance of Edakkal Caves, coupled with the advanced technology employed in this project, aims to make the site more accessible and enrich the overall tourism experience. This collaborative effort between the tourism sector and educational institutions exemplifies the potential of leveraging technology to preserve and promote cultural heritage, creating a model for future projects at the intersection of tourism and technology.

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CHAPTER 1

INTRODUCTION

1.1 Project Overview

We all know and care about the Edakkal Caves—a testament to the rich historical tapestry of South India. These natural caves bear witness to the Stone Age, adorned with rare carvings that stand as unique relics of our ancient heritage. Recognizing the significance of this cultural treasure, the District Tourism Promotion Council embarked on a mission to enhance the accessibility of Edakkal Caves for enthusiasts and explorers alike.

Our endeavor, "The Ticket Booking System for Edakkal Caves," is more than a technological innovation; it is a gateway to unlocking the wonders concealed within the caverns. This project aims to streamline the ticket booking process, offering a seamless and efficient online solution that transcends geographical constraints. By introducing an intuitive user-facing web application, we empower visitors to effortlessly plan their visits, explore available time slots, and secure their tickets from the comfort of their devices. This initiative addresses the modern traveler's need for convenience while respecting the historical significance of the Edakkal Caves. The digital ticketing system not only simplifies the reservation process but also contributes to the preservation of this cultural heritage site by minimizing queues and foot traffic. In addition to catering to the needs of the tourists, our project incorporates a robust administrative component. The development of an Android and iOS admin panel, crafted with Flutter, enables the District Tourism Promotion

Council agents to efficiently manage and verify bookings. Through the integration of a secure QR code scanning system, on-site validation becomes a seamless and expedited process, enhancing the overall operational efficiency of managing Edakkal Cave visits.

In this report, we delve into the intricacies of our two-fold solution, detailing the user-facing web application and the administrative mobile app. Through this comprehensive documentation, we aim to showcase not just the technological prowess but also the real-world impact of our project on enhancing the accessibility and preservation of Edakkal Caves.

1.2 Problem Statement

the lack of a streamlined ticketing system posed a significant challenge. Traditional methods led to long queues, hindering the visitor experience and potentially impacting the preservation of this cultural treasure. Recognizing this issue, the District Tourism Promotion Council sought a solution to modernize the ticketing process, making it accessible, efficient, and respectful of the historical significance of Edakkal Caves.

1.3 Significance of the Project

The Ticket Booking System for Edakkal Caves holds paramount importance in bridging the gap between historical preservation and modern convenience. By introducing an online ticketing solution, the project not only enhances the accessibility of Edakkal Caves for tourists but also contributes to the conservation of this cultural heritage site.

1.4 Existing System & Its Limitations

Presently, ticketing at Edakkal Caves relies on a manual counter-based approach, where visitors procure tickets on-site. While this traditional method has served its purpose, it comes with inherent limitations. Long queues and potential delays at

the ticket counter detract from the overall visitor experience, leading to frustration and inefficiencies. Moreover, the manual system poses challenges in efficiently managing visitor data and validating tickets, impacting the administrative processes of the District Tourism Promotion Council. The need for a modernized approach is evident, calling for a transition to an online ticketing system that not only addresses these limitations but also aligns with contemporary expectations of accessibility and efficiency.

1.5 Future Scopes

Beyond its current ticketing functionality, the Ticket Booking System for Edakkal Caves holds immense potential for evolving into a dynamic information platform. As technology advances, envisioning the system as a comprehensive information panel about Edakkal Caves is a logical progression. By leveraging this platform, District Tourism Promotion Council agents can seamlessly disseminate the latest updates, historical insights, and relevant information to visitors. This expansion aligns with the broader goal of transforming the project into a multifaceted tool that not only simplifies ticketing logistics but also serves as an immersive resource for enhancing visitor engagement and knowledge.

CHAPTER 2

SYSTEM ANALYSIS

2.1 Existing System

The present ticketing mechanism at Edakkal Caves relies heavily on a manual counter-based system, where visitors physically acquire tickets upon arrival. This conventional process, although functional, exhibits inherent inefficiencies. The most notable drawback is the formation of extended queues at the ticket counter, leading to prolonged wait times and occasional visitor dissatisfaction. Furthermore, the manual nature of the ticketing process poses challenges for the District Tourism Promotion Council agents tasked with managing visitor data and validating tickets. The absence of a digital infrastructure not only impedes the efficient handling of visitor information but also limits the Council's ability to communicate timely updates and information about Edakkal Caves to tourists. The lack of real-time dissemination prevents the incorporation of dynamic elements such as instant notifications, event announcements, or changes in operating hours. In essence, the existing system, while serving its purpose, falls short of meeting contemporary expectations of accessibility, efficiency, and the seamless flow of information.

2.2 Proposed System

The envisioned Ticket Booking System for Edakkal Caves represents a paradigm shift from the existing manual ticketing approach to a technologically advanced

and user-centric system. The proposed system introduces an online ticketing platform, leveraging a user-facing web application built using React and Firebase as the backend solution. This web application serves as the primary interface for tourists, offering a seamless experience for browsing details about Edakkal Caves, selecting preferred dates, and securing tickets for available time slots. To complement the user-facing aspect, the proposed system incorporates an Android and iOS admin panel developed with Flutter. This administrative mobile app empowers District Tourism Promotion Council agents to efficiently manage and verify bookings. The integration of Razorpay as the payment gateway ensures a secure and streamlined payment process, enhancing the overall user experience.

One of the key features of the proposed system is its potential for future expansion. Beyond its current ticketing functionality, the platform can evolve into an information hub about Edakkal Caves. District Tourism Promotion Council agents could leverage the system to push real-time updates, historical insights, and relevant information to visitors, creating a more engaging and educational experience.

2.3 Feasibility Study

During system analysis, the feasibility study of the proposed system is to be carried out. This is to ensure that the proposed system is not a burden to the company. For feasibility analysis, some understanding of the major requirements for the system is essential. Three key considerations involved in the feasibility analysis are:

- **Technical Feasibility** - Technology Stack: The chosen technology stack, including React, Firebase, Flutter, and Razorpay, is well-established and widely used in the industry. The compatibility and interoperability of these technologies ensure a robust and scalable system. Development Expertise: The in-house knowledge of the development team in Flutter, React, and backend technologies ensures technical competency. The system's architecture is designed to be adaptable to future technological advancements, ensuring long-term technical feasibility.

- **Economic Feasibility** - Cost-Benefit Analysis: The implementation of the Ticket Booking System for Edakkal Caves involves initial development costs,

including software development, payment gateway integration, and server setup. However, the potential benefits in terms of increased visitor satisfaction, operational efficiency, and the potential for future revenue generation through expanded services make this project economically viable. Return on Investment (ROI): The anticipated reduction in operational costs, particularly in ticketing administration and manual processes, is expected to yield a positive return on investment over time. The digital platform's potential for scalability and future expansion further enhances its economic feasibility.

- **Social Feasibility** - User Acceptance: The proposed system is designed with user-friendliness in mind, providing a seamless experience for tourists and a practical tool for Council agents. User training and support mechanisms will be implemented to facilitate a smooth transition. Community Impact: The digital ticketing system aligns with contemporary expectations, offering a more accessible and efficient means for tourists to explore Edakkal Caves. By minimizing on-site congestion and enhancing the visitor experience, the project positively contributes to the preservation of the cultural heritage site.