

Hall Booking System

Transforming Manual Booking To Automated System Through Digitalization.

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Abstract—At Jigme Namgyel Engineering College, the existing manual hall booking process has proven inefficient and prone to conflicts, resulting in significant time wastage and user frustration. To address these issues, we developed an automated and dynamic Hall Booking System specifically for JNEC. This system eliminates conflicts and inefficiencies of the manual process by providing real-time visibility into hall availability and ensuring a fair reservation process. The system will be developed using the Laravel framework, utilizing PHP for the backend and a MySQL database for data storage. The Hall Booking System project transitioned from manual to automated hall reservations using Agile methodology, emphasizing continuous improvement through regular feedback and iterative development.

I. INTRODUCTION

The limitations of the existing manual system have become glaringly apparent, giving rise to conflicts and operational inefficiencies. Recognizing these challenges, the Hall Booking System project emerges as a transformative initiative set to revolutionize the hall booking landscape. This ambitious endeavor seeks to replace the manual system with an automated platform that seamlessly integrates modern technology. It enhances user experience by providing real-time insights into hall availability, efficient conflict resolution, and timely notifications. The automated system aims to deliver a user-friendly and efficient hall booking experience, significantly advancing facilities management for all stakeholders. It will leverage the Laravel framework and PHP for development, follow the reverse engineering methodology, and store data in a MySQL database. Overall, the Hall Booking System project aims to improve the manual system and facilitate seamless interaction between the hall bookers and the organization.

II. LITERATURE REVIEW

Web-based hall booking systems streamline university hall reservation and management processes via Internet connectivity, providing a centralized interface for availability checks, reservations, cancellations, and real-time updates [1]. At JNEC, traditional manual methods lead to user conflicts due to inefficiencies and overlapping schedules [1]. JNEC

implemented an online booking system to address these challenges, improving facility use balance [1].

Research highlights increased student engagement with online venue booking systems, reducing conflicts and enhancing event organization [3]. The "HALL BOOKING SYSTEM" represents a significant advancement in event management, saving time and resources by offering detailed hall information and tailored reservation options [3].

Technological advancements emphasize the digital system's efficiency over the traditional pen-and-paper method, suggesting specific hall prioritization and alternatives for unavailable spaces [5]. Challenges include user resistance, data security concerns, and the need for ongoing support and training [6]. Addressing last-minute changes and equitable resource distribution are crucial for successful system implementation.

In conclusion, the evidence presented underscores the positive impact of hall booking systems in avoiding conflicts and enhancing overall efficiency. From case studies to quantitative analyses, researchers consistently advocate for these systems, promoting organized and effective campus space management to the benefit of both students and staff. The implementation of the online booking system facilitates real-time monitoring of hall availability, contributing to a more organized and streamlined approach to event and meeting planning.

III. METHODOLOGY

The development of the Hall Booking System incorporated a methodology that combined reverse engineering and an iterative approach. The reverse engineering methodology was employed to analyze the existing system of hall booking through phone calls, excel sheets, and documentation. This analysis provided insights into the structure, relationships, and efficiency of the system. By understanding the strengths and weaknesses of the existing system, the team proceeded to design and develop the Online Hall Booking System using an iterative approach. Each iteration focused on implementing and testing specific features, with regular feedback loops from users. This feedback guided refinements and improvements throughout the development process. The combination of reverse engineering and an iterative approach ensured a systematic and structured development process, resulting in a

modern and efficient web-based platform for booking a hall and reservation.

A. Reverse engineering

The Hall Booking System project at JNEC is focused on transitioning from a manual to an automated system for managing hall reservations. This transition was facilitated through the application of reverse engineering and Agile methodology. The use of reverse engineering in conjunction with Agile allowed for a thorough analysis of the existing system to understand its design, functionality, and components.

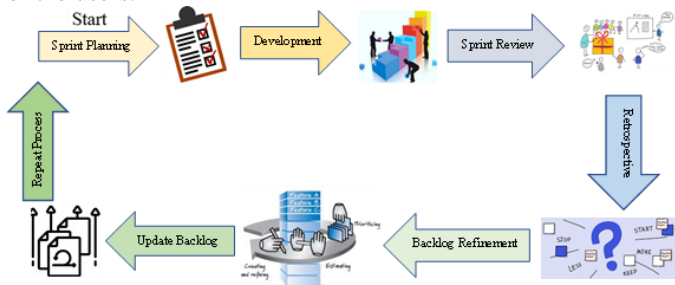
B. Iterative Method

The Hall Booking System project focused on transitioning from a manual to an automated system for managing hall reservations. This transition was facilitated through Agile methodology.

Agile methodology was integral to developing the online hall booking system, promoting continuous improvement of the website. Regular interactions with the project guide were a key aspect of this process, providing opportunities to review progress and gather feedback.

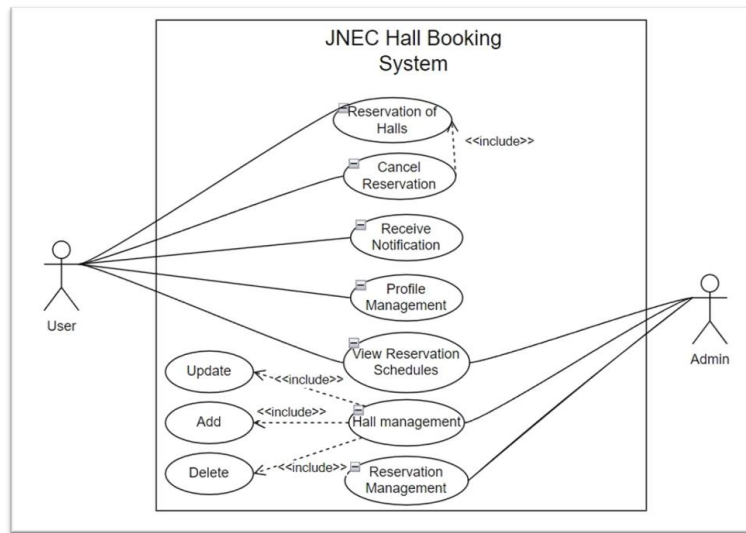
Sprint planning involves defining goals and tasks for the upcoming sprint. Development follows, where we work on these tasks. At the end of the sprint, a sprint review is conducted to showcase progress and gather feedback. Subsequently, a retrospective allows us to reflect on the process and identify improvements. Backlog refinement is the ongoing process of updating and prioritizing the backlog, ensuring it aligns with project goals. This cycle is then repeated for continuous improvement.

The feedback received during each iteration played a crucial role in refining and improving the portal. It helped the development team identify any deviations from the desired outcomes and make necessary adjustments to meet the needs of the users.



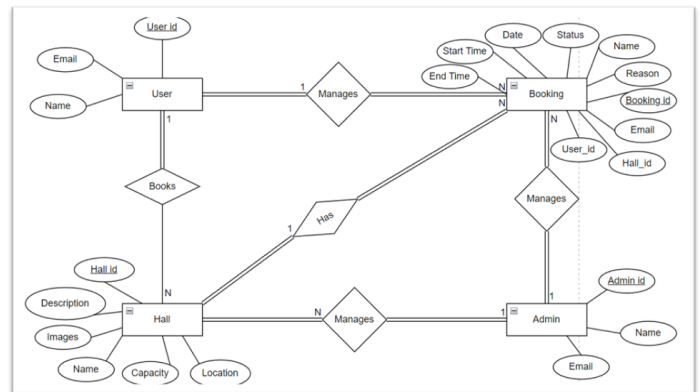
C. Use case

The use-case diagram is a visualization of a use-case, i.e., The hall booking system interaction with the users. In this proposed system, the use case mainly consists of a feedback case, a view Hall Booking System details case, an update system details case, and an edit profile case. This Figure shows the use case diagram for the actions that the actors (staff, students, and Admin) can booked the hall.



D. Entity Relationship Diagram

An Entity-Relationship Diagram (ERD) is a visual representation of entities, their attributes, and the relationships between them. In the hall booking system, there are four entities consisting of the user entity, booking entity, admin entity and hall entity. This shows the relationships among the entities in this system.



E. System Functionality



IV. RESULT

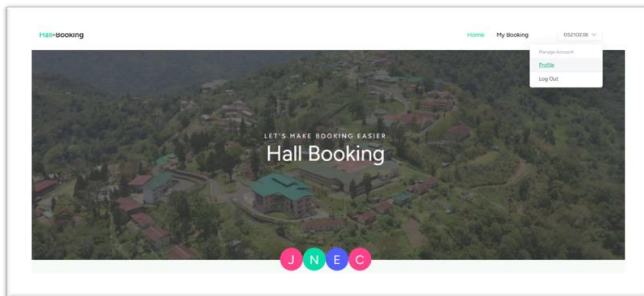
Email
05210238.jnec@rub.edu.bt

Password
.....

Remember me

[Forgot your password?](#) **LOG IN**

Login page



Home page

Booking Details

Start Time: --:--:--
End Time: --:--:--

mm/dd/yyyy Reason for booking...

Submit

Booking page

Hall Name: Hall name

Capacity: Capacity of hall

Location: Location of hall

Description: Hall description

Hall Image: Choose Files No file chosen

Submit

Add halls

Name	Image	Delete	Update
Conference Room (Mechanical building)		Delete	Update
Conference Room (Admin Block)		Delete	Update
Lecture Theatre		Delete	Update
Alpha Hall		Delete	Update
Beta Hall		Delete	Update

Update hall

CONCLUSION

The automated Hall Booking System has effectively addressed the critical need for an efficient and centralized hall reservation management system at Jigme Namgyal Engineering College. By replacing the outdated manual process, this project has significantly streamlined the booking experience, reduced conflicts and improving overall efficiency. With features such as real-time tracking of hall availability, automated conflict resolution, and a comprehensive notification system, the Hall Booking System will successfully enhance the user experience. Users now have immediate access to hall availability, ensuring seamless and conflict-free bookings. The intuitive interface further simplifies the booking process, making it easy and efficient for all users. The adoption of MySQL for backend data management, PHP for server-side logic, Apache for secure hosting, and JavaScript and HTML for front-end development has resulted in a robust and scalable system. These technologies, combined with a well-structured development methodology, have ensured the project's successful completion. The dedication and collaboration of the project team members, along with the support from faculty members and other staff and students, played a significant role in delivering a high-quality system. Their commitment and teamwork were essential to the project's overall success.

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