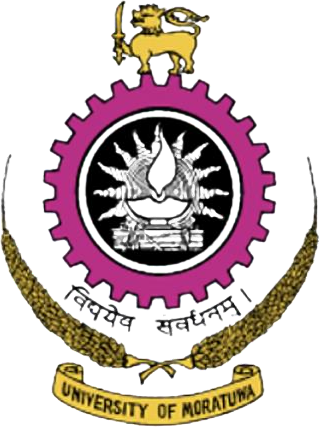
# IN2901 – Software Development Project Project Proposal

**Level 2**

# Holiday Home Booking System

Delta X



Faculty of Information Technology University of Moratuwa

2023

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## Introduction

The web-based holiday home booking system is designed for companies to promote work-life balance and employee satisfaction. It offers a user-friendly platform for managing company-owned holiday homes with dedicated caretakers, providing a seamless and hassle-free way for employees to book holiday homes.

The system offers a user-friendly interface for administrators and flexibility for employees. It simplifies the booking process, allowing administrators to manage bookings, monitor property details, and analyze past activities. Employees can reserve holiday homes according to their preferences. The system provides easy access to property histories and details, enhancing transparency and ensuring an exceptional booking experience. It eliminates the complexities of outdated systems, paving the way for a stress-free holiday home management experience.

## Problem in brief

* 1. Problem Statement:

The problem at hand is the inefficient and cumbersome process of booking holiday homes for employees of Inova IT System, leading to scheduling conflicts, administrative overhead, and user frustration. The background of this problem domain encompasses the following key aspects:

* 1. Background:

In the context of Inova IT System, employees often require access to holiday bungalows for various purposes, including vacations, team retreats, and corporate events. However, the existing method for booking these accommodations is fraught with challenges:

1. Inova IT System employs a manual booking process with paperwork, emails, and phone calls, necessitating employee-administrator interaction for bookings.
2. The absence of real-time updates on bungalow availability causes scheduling conflicts and inconveniences when employees unintentionally book already reserved accommodation.
3. Limited booking options and inefficient search capabilities make it difficult and time-consuming for employees to find suitable bungalows based on their preferences.
4. Administrative tasks like managing bookings and user access burden Inova IT System's teams with time-consuming work and the potential for errors.

## Aim and Objectives

* 1. Aim
     + The aim of this project is to develop a system for addressing the challenges associated with booking holiday bungalows for “Innova IT system” is using a user-friendly web-based platform.
  2. Objectives
     + To streamline the holiday bungalow booking process, reducing complexities and inefficiencies.
     + To provide real-time updates on bungalow availability, ensuring accurate and conflict-free bookings.
     + To design a user-friendly interface that simplifies the selection and booking of holiday bungalows.
     + To create efficient administrative tools for managing user access, bookings, and availability data.
     + To enhance data security, implement robust measures to protect sensitive information.
     + To offer comprehensive training and support for Inova IT System's employees in using the system effectively.
     + To customize the system to align with Inova IT System's specific organizational requirements.
     + To conduct rigorous testing and quality assurance to ensure system reliability and performance.
     + To prepare detailed documentation for system operation, maintenance, and troubleshooting.

## Proposed Solution

This project is committed to addressing these challenges by developing a secure, user-friendly, and customized web-based system tailored to the needs of Inova IT System. This system will not only simplify the booking process for their employees but also provide real-time availability information and offer efficient administrative tools for effective booking management.

The project aims to revolutionize the holiday bungalow booking experience for Inova IT System employees by developing a secure, user-friendly web-based platform. This solution leverages. modern technologies and efficient processes to address challenges associated with the current booking

system, ensuring a seamless and enjoyable experience for their employees. The project's objectives, key features, and benefits will be discussed.

* 1. Nature of the Solution:
     1. User-Friendly Interface: The core of this solution is a user-friendly web-based interface accessible to employees of Inova IT System. This interface allows users to input their preferences, browse available holiday bungalows, and initiate bookings.
     2. Real-Time Updates: To ensure the accuracy of bookings and prevent conflicts, this solution includes real-time updates on bungalow availability. This feature enhances the user experience and minimizes booking errors.
     3. Administrative Tools: Administrative tools are integrated into the system to manage user access, monitor bookings, and maintain availability data. These tools reduce the administrative burden on Inova IT System's internal teams.
  2. Technologies to be Adapted:
     1. Web Development Stack: Including HTML5, CSS and a framework of JavaScript, ReactJS
     2. Backend Technologies: Framework of JavaScript, NodeJS
     3. Real-Time Updates: Web Sockets
     4. Database: Oracle Database (RDBMS)
  3. Feasibility of Implementation:

4.3.1. The proposed solution is highly feasible, drawing from established web development and database technologies. Team possesses the necessary expertise to design, develop, and deploy the system effectively.

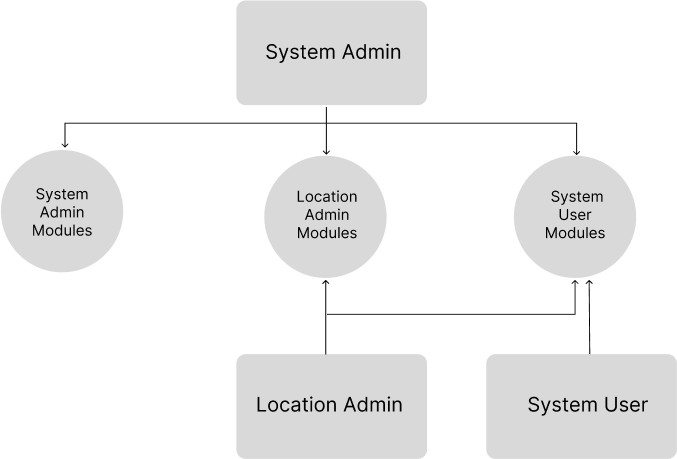
* 1. Capability to Solve the Problem:

4.4.1. Ready to collaborate effectively with the team, utilizing technical expertise, problem- solving skills, and creativity to contribute to the successful execution of the web development project.

* 1. Availability of Resources:

4.5.1. Access to a range of resources, including skilled developers and designers, along with the allocation of the necessary infrastructure and tools, ensures the successful implementation of the solution.

Figure:



## Timeline

Project Initiation

**1st Week**

* Define project objectives, scope, and deliverables.
* Formulate the project team and assign roles and responsibilities.
* Conduct an initial project kickoff meeting with the

**3** Requirements Gathering

client. - Collaborate with the client to gather detailed

requirements for the web-based booking system.

Project Planning

* Develop a detailed project plan, including tasks, dependencies, and timelines.
* Identify and allocate necessary resources.

**7** - Document user stories, use cases, and functional requirements.

**10** Design and Architecture

* Design the user interface (UI) and user experience (UX) of the web-based system.
* Define the system's architecture and database structure.

Study and Development **13**

* Create wireframes and prototypes for client review.
  + Learn about the Technologies Relevant to the Project
  + Begin the development phase, implementing the front- end and back-end of the system.
  + Develop real-time updates functionality and user authentication.

**25** Testing and Quality Assurance

* Conduct regular code reviews and testing. - Conduct comprehensive testing, including unit testing,

integration testing, and user acceptance testing (UAT).

- Identify and rectify any bugs or issues.

Deployment and User Training **30**

* Deploy the web-based system to a production environment.
* Conduct user acceptance testing to validate the
* Ensure data security and user data protection measures are in place.

system's functionality.

Project Closure

**33** Documentation and Final Review

- Prepare comprehensive documentation, including user manuals and maintenance guides.

**35** - Conduct a final review of the system with Inova IT

* Obtain final approval from Inova IT System
* Hand over the system, documentation, and any relevant assets.
* Evaluate the project's overall success and areas for improvement.

System to ensure all requirements are met.

* Address any last-minute feedback or adjustments.

## References

1. ReactJS documentation (<https://react.dev/blog/2023/03/16/introducing-react-dev>)
2. Material UI documentation (<https://mui.com/material-ui/getting-started/>)
3. NodeJS documentation (<https://nodejs.org/en/docs>)
4. Create Rest API with Node.js and Express (https://blog.postman.com/how-to-create-a-rest-api- with-node-js-and-express/)
5. Version control with GitHub (<https://docs.github.com/en>)
6. Oracle Database documentation ([https://docs.oracle.com/en/database/oracle/oracle-](https://docs.oracle.com/en/database/oracle/oracle-database/index.html) [database/index.html](https://docs.oracle.com/en/database/oracle/oracle-database/index.html))
7. Oracle best practices guidance (<https://www.oracle.com/applications/modern-best-practice/>)
8. UI / UX fundamentals ([https://medium.com/@nho\_rah/ui-ux-fundamentals-6f8feea0f6ba](https://medium.com/%40nho_rah/ui-ux-fundamentals-6f8feea0f6ba) )
9. UI /UX principles and best practices ([https://yatilabs.medium.com/the-ultimate-guide-on-ui-ux-](https://yatilabs.medium.com/the-ultimate-guide-on-ui-ux-design-its-principles-best-practices-cf03061c2d9b) [design-its-principles-best-practices-cf03061c2d9b](https://yatilabs.medium.com/the-ultimate-guide-on-ui-ux-design-its-principles-best-practices-cf03061c2d9b))
10. Connect oracle dB with node.js application (<https://www.oracle.com/database/technologies/appdev/quickstartnodeonprem.html>)
11. Node.js Oracle Crud example ([Node.js Oracle CRUD Example: Database Connection & SQL](https://www.techiediaries.com/node-oracle-database-crud/) [Queries | Techiediaries](https://www.techiediaries.com/node-oracle-database-crud/))
12. WebSocket introduction ([https://www.geeksforgeeks.org/what-is-web-socket-and-how-it-is-](https://www.geeksforgeeks.org/what-is-web-socket-and-how-it-is-different-from-the-http/) [different-from-the-http/](https://www.geeksforgeeks.org/what-is-web-socket-and-how-it-is-different-from-the-http/))
13. How web socket works (YouTube - <https://www.youtube.com/watch?v=pnj3Jbho5Ck>)
14. Socket.io documentation (<https://socket.io/docs/v3>)
15. Socket.IO with Nodejs + Express medium article ([Socket.IO with NodeJS + Express. Nowadays,](https://medium.com/kocfinanstech/socket-io-with-node-js-express-5cc75aa67cae) [most web developers want to… | by Sude Kılıç | Koçfinans Tech | Medium](https://medium.com/kocfinanstech/socket-io-with-node-js-express-5cc75aa67cae))

## Signatures of the Group Members

|  |  |  |
| --- | --- | --- |
| **Index No** | **Name** | **Signature** |
| 214092B | Jayatissa P.B.N. |  |
| 214135L | Munasinghe M.A.K.L. |  |
| 214122U | Madhushan H.M.N. |  |
| 214028L | Bandara H.M.A.P. |  |
| 214104R | Kaumadi G.S.B.D.D. |  |

**Supervisors’ Declaration**

I hereby declare that I have checked this project, and, in my opinion, this project is adequate in terms of scope and quality.

|  |  |  |  |
| --- | --- | --- | --- |
| 1. | Name of Supervisor | : | Mrs. Chandimali M.N. |
|  | Designation | : | Lecture, Department of Information Technology |
|  | Date | : | **/ /** 2023 |
|  | Signature | : |  |
|  | Any further comments | : |  |
| 2. | Name of Supervisor | : | Dr.(Ms) Ganegoda G.U. |
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