SOFTWARE ENGINEERING
Hotel Management System
(SECTION-B)

Group Members-

1. Nikhil Chauhan (IIT2022133)
2. Ria Chugh (IIT2022135)
3. Srijan Jain (IIT2022159)
4. Prachi Modak (IIT2022172)
5. Mukul Singhal (IIT2022190)

A. How feasible is the project?

The project's feasibility is notably high with a cohesive team of five members. By strategically assigning roles, each individual's skills can be optimized – one focusing on backend development, another on frontend design, and the rest managing aspects like system testing, user experience, and documentation.

Regular team meetings and open communication channels play a pivotal role in facilitating collaboration and knowledge sharing. This ensures that the entire team is well-informed and aligned with the project's goals throughout its development.

Moreover, establishing clear milestones and deadlines is crucial for tracking progress and addressing any challenges that may arise promptly. This structured approach, coupled with a dedicated team and effective project management, strengthens the likelihood of successfully completing the hotel management system project within the designated semester timeframe.

B. How novel is the project?

The novel cause behind the project idea lies in effectively using technology to enhance and streamline the overall hotel management process, improving customer experience, and increasing operational efficiency.

In traditional methods, communication gaps are prevalent, and there are instances where tasks and services requested by customers may not be executed promptly. This results in customer dissatisfaction and unnecessary time wastage. At times, these issues lead customers to file complaints against staff members, putting their jobs at risk. To mitigate such risks and ensure real-time efficiency, with 100% customer satisfaction, we will design a comprehensive system that caters to the needs of customers, workers, and managers. The project aims to create a seamless and interconnected environment within the hotel.

The uniqueness of the problem lies in the conventional methods of hotel management, where communication gaps and delayed task execution often result in customer dissatisfaction and potential damage to the hotel's reputation. By prioritizing real-time communication between customers, workers, and managers, we aim to eliminate the traditional pitfalls that lead to dissatisfaction and ensures prompt and efficient service delivery, setting it apart from existing solutions in the world of hotel management.

Here's an explanation of how this project stands out(uniqueness):

1. Real-time Communication: In this system, Instant notifications are sent to workers when a customer requires a particular service, minimizing delays and enhancing overall efficiency.
2. Job Security measures: By addressing customer complaints promptly and enhancing service quality, the project aims to minimize the risk of staff members facing job insecurity due to customer dissatisfaction.
3. Post-Stay Feedback Mechanism and holistic customer experience: The project goes beyond basic room bookings, offering a comprehensive and interconnected environment for customers to access a wide array of hotel services through a single platform. Also, the inclusion of a post-stay feedback mechanism demonstrates a commitment to continuous improvement based on guest input.

C. Is the project challenging enough?

The development of the Hotel Management System (HMS) presents several challenges, underscoring its intricacy and the necessity for a cohesive team. Key challenges include:

1. Dynamic Real-time Data Management: Effectively managing dynamic data in real-time scenarios requires robust solutions to handle concurrent

updates, maintain data integrity, and ensure consistency across diverse modules.

2. Intuitive User Interface Design: Crafting an intuitive interface that caters to diverse user roles, including hotel staff, administrators, and guests, poses a challenge, necessitating seamless interaction and user satisfaction.
3. Adaptability to Varied Hotel Sizes and Types: Designing the Hotel Management System to cater to a diverse range of hotels, from boutique establishments to large chains. Each has unique operational needs, requiring the system to be adaptable and configurable to accommodate varied sizes and types of hotel businesses.
4. Remote Accessibility and Mobility: Ensuring secure remote accessibility and mobility for hotel staff and administrators. The system should allow for efficient management even when accessed from different locations, which is especially relevant in the context of global and chain hotels.
5. Stringent Security Measures: Safeguarding sensitive information and implementing secure authentication mechanisms are critical, demanding rigorous attention to prevent unauthorized access and protect data integrity.
6. Scalability and Performance Optimization: Designing the system to scale efficiently during peak demand while maintaining optimal performance requires foresight to anticipate usage patterns and implement scalable infrastructure.
7. Maintenance and Updates: The system's continuous adaptability relies on maintenance and updates to stay ahead of evolving standards, security challenges, and user requirements, emphasizing the need for an agile approach.

D. Can the project be applied to solve real-world problems?

Certainly, the project can be applied to address real-world problems effectively. Its potential lies in streamlining communication processes, reducing miscommunication, and shortening the communication cycle. By facilitating direct interaction between consumers and workers without intermediaries like reception or management layers, it simplifies the service delivery chain.

This streamlined approach not only makes it easier for consumers to access services but also simplifies the workflow for workers, enhancing overall efficiency. The reduction in the number of intermediaries results in a more cost-effective system, requiring a smaller managing team. Consequently, the project holds the

promise of making both the provision and receipt of services more efficient, ultimately benefiting both consumers and workers in a practical and impactful manner.

E. Informal list of Requirements (Functionalities):

- The spreadsheet showing the list of requirements: requirements_hms

On further advancements in this project creation states, more requirements will be added, as they keep unfolding with each stage.

F. Tools and Technologies Used:

- Frontend - React.js: JavaScript library for building user interfaces.
- Design - Figma: Collaborative design tool for creating user interfaces, prototypes, and design systems.
- Backend -
  - Node.js: JavaScript runtime for server-side development.
  - Express.js: Web application framework for Node.js, simplifying server-side development.

- Database - MongoDB: NoSQL database for storing and managing application data