AMAL JYOTHI
COLLEGE OF ENGINEERING
(A U T O N O M O U S)

INTELLISTAY MANAGEMENT

23MCA245 - Mini Project

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AJC23MCA-2055
R-MCA 2023-25 S3

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ABSTRACT

The IntelliStay Management System (IMS) project aims to create an integrated solution to manage the diverse aspects of hotel operations efficiently. This system incorporates several key modules, including reservation management, guest check-in/check-out processes, room management, billing and invoicing, inventory control, housekeeping management, and customer relationship management (CRM). These modules collectively ensure smooth and seamless hotel operations, enhancing both guest satisfaction and operational efficiency.

Key features of the HMS include:

1. **Reservation Management**: Streamlines the booking process, handles cancellations, and manages room availability.
2. **Guest Check-In/Check-Out**: Facilitates quick and efficient guest registration, room allocation, and departure processes.
3. **Room Management**: Tracks room status, maintenance schedules, and ensures optimal utilization of rooms.
4. **Billing and Invoicing**: Automates billing procedures, generates invoices, and supports multiple payment options.
5. **Inventory Control**: Monitors stock levels of hotel supplies, automates reorder processes.
6. **Housekeeping Management**: Schedules and tracks housekeeping tasks, ensuring rooms are clean and ready for guests.
7. **Customer Relationship Management (CRM)**: Manages guest profiles, preferences, and feedback to deliver personalized services and improve guest loyalty.

In addition to these core features, the HMS project leverages Machine Learning (ML) and Artificial Intelligence (AI) to implement advanced functionalities. These include:

- **Predictive Analytics for Demand Forecasting**: Uses historical booking data to predict future occupancy rates and optimize pricing strategies.
- **Personalized Guest Experience**: Analysis guest preferences and behaviours to provide tailored recommendations and services.
- **Dynamic Pricing Models**: Adjusts room rates in real-time based on market demand, competition, and other relevant factors.
- **Chatbots and Virtual Assistants**: Enhances guest interaction by providing 24/7 support for inquiries, bookings, and concierge services.
- **Sentiment Analysis**: Monitors online reviews and feedback to gauge guest satisfaction and identify areas for improvement.

Differentiation of Functionalities and Features Based on Different End Users:

1. **Hotel Managers and Administrators:**
   - **Reservation Management**: Oversee all bookings, manage room availability, and handle cancellations.
   - **Billing and Invoicing**: Generate detailed financial reports, oversee billing procedures, and manage revenue.
   - **Room Management**: Tracks room status, maintenance schedules, and ensures optimal utilization of rooms, adding new rooms etc.
   - **Housekeeping Management**: Schedules and tracks housekeeping tasks, ensuring rooms are clean and ready for guests.
2. **Front Desk Staff:**
   - **Guest Check-In/Check-Out**: Manage guest arrivals and departures efficiently, allocate rooms, and handle special requests.
   - **CRM**: Access guest profiles to offer personalized services and handle guest inquiries.
3. **Housekeeping Staff:**
   - **Housekeeping Management**: Receive task schedules, update room status, and report maintenance issues.

- o **Inventory Control**: Track cleaning supplies and request replenishments as needed.
4. **Guests:**
   - o **Reservation Management**: Book rooms online, view availability, and manage their reservations.
   - o **Personalized Guest Experience**: Receive tailored service recommendations based on preferences.
   - o **Chatbots and Virtual Assistants**: Access 24/7 assistance for inquiries, bookings, and concierge services.
   - o **Feedback and Sentiment Analysis**: Provide feedback and reviews to help improve services.
5. **Maintenance Staff:**
   - o **Room Management**: Monitor room maintenance schedules and address reported issues.
   - o **Inventory Control**: Manage maintenance supplies and ensure timely reordering.

 Functionalities and Features for Mini Project:

1. **Reservation Management**: Basic module for handling bookings and cancellations.
2. **Guest Check-In/Check-Out**: Simple interface for managing guest arrivals and departures.
3. **Room Management**: Adding new rooms, Basic tracking of room status and availability.
4. **Billing and Invoicing**: Generate and print invoices for guest stays.
5. **Housekeeping Management**: Basic task scheduling and status updates.
6. **Inventory Control**: Simple inventory tracking and management.
7. **Customer Relationship Management (CRM)**: Basic guest profile management and feedback collection.

Functionalities and Features for Main Project:

1. **Advanced Reservation Management**: Integration with online booking platforms and dynamic availability updates.
2. **Comprehensive Billing and Invoicing**: Support for multiple payment methods, detailed financial reporting, and automated billing.
3. **Predictive Analytics for Demand Forecasting**: Utilize ML algorithms to predict occupancy and optimize resource allocation.
4. **Personalized Guest Experience**: Implement AI-driven recommendations and personalized services based on guest profiles.
5. **Dynamic Pricing Models**: Real-time room rate adjustments using AI-driven models.
6. **Chatbots and Virtual Assistants**: Implement AI chatbots for 24/7 guest support and service inquiries.
7. **Sentiment Analysis**: AI tools to analyze online reviews and feedback for service improvement.
8. **Comprehensive Inventory Control**: Automated reorder processes, detailed tracking.