Hossainul Karim
Sunrise Hotel Group
12/A, Green View Complex
Banani, Dhaka-1213

Dear Hossainul Karim,

Re: Enclosed Application Agreement for Sunrise Hotel Management System.

At TechVision Solutions, we understand that developing a client-focused **Hotel Management System** requires a blend of technical expertise and effective communication. Our dedicated team works diligently to ensure you receive the highest quality service. We recognize that every business is unique, and we aim to deliver a solution that is both innovative and cost-effective, with timely and reliable implementation.

In response to your business requirements, we have designed the **Sunrise Hotel Management System** tailored to streamline hotel operations, including reservations, billing, customer management, and reporting. The enclosed agreement outlines the system's features and all its components. Please review it carefully, and if it meets your expectations, kindly sign and confirm the agreement.

Yours sincerely,
Jannatun Naim Ema
Head
Software Development Division
TechVision Solutions

1. Project Overview

In today's fast-paced hospitality industry, technology plays a vital role in enhancing guest experiences and streamlining operations. The **Sunrise Hotel Management System** is designed to simplify daily hotel tasks, improve customer service, and manage operational workflows efficiently. This system includes user-friendly interfaces for both guests and staff, ensuring seamless management of reservations, billing, housekeeping, and reports.

2. Obstacles

- **Understanding the Requirements**: Aligning system capabilities with hotel-specific needs.
- **User Role Management**: Differentiating permissions for front desk staff, managers, and admin users.
- **Data Storage**: Ensuring secure and structured storage using Object-Oriented Programming (OOP) principles.
- **Complex Data Integration**: Handling room availability, customer details, and financial records effectively.

3. System Features

User Roles and Permissions:

- **Customer/Guest**: Registers, browses rooms and services, makes bookings, manages cancellations, and provides feedback.
- **Receptionist**: Manages check-ins/check-outs, updates room availability, and assists with bookings.
- **Admin/Manager**: Updates room inventory, oversees bookings, tracks performance, and manages staff tasks.

Detailed Workflows

Customer/Guest Workflow

- **Registration/Login**: React forms with validation for creating accounts or logging in securely.

- **Room Browsing**: Displays available rooms, pricing, and amenities with real-time updates from the backend.
- **Booking Management**: Allows customers to book, modify, or cancel reservations using state management (React Context or Redux).
- **Payment Processing**: Secure payment component integrated with a third-party payment gateway.
- **Booking Status Tracking**: Real-time updates on booking status using WebSocket or asynchronous polling.

Receptionist Workflow

- **Guest Management**: Handles guest check-ins and check-outs via a dashboard.
- **Booking Assistance**: Manages room reservations, modifies bookings, and handles cancellations for walk-in or phone-in guests.
- **Payment Collection**: Processes in-person payments or verifies online transactions.

Admin Workflow

- **Room Inventory Management**: Adds, updates, or removes rooms and their details via React forms.
- **Booking Oversight**: Monitors all reservations, cancellations, and guest profiles from a dashboard.
- **Report Generation**: Generates financial and occupancy reports for management review.

4. Project Requirement

4.1. Front-End Requirements

The front-end will provide an intuitive, responsive interface for users, ensuring a seamless experience for guests, staff, and managers. Built using a combination of **HTML**, **CSS**, and **JavaScript**, it will handle the user interface and interactions.

Technologies:

- **HTML5**: For structuring web pages and content.
- **CSS3**: For styling, including layouts, animations, and responsive design.
- **JavaScript**: For handling client-side interactivity such as dynamic forms, real-time data updates, and validation.

Technical Requirements:

- **Cross-Browser Compatibility**: Fully functional across modern browsers (Chrome, Firefox, Safari, Edge).
- **Performance Optimization**: Efficient use of resources to ensure fast loading times and smooth navigation.
- **Client-Side Validation**: Ensure inputs (e.g., booking forms) are validated before submission to reduce server load.

4.2. Back-End Requirements

The back-end will handle all system logic, data processing, and interactions with the database, ensuring secure and efficient data management.

Technologies:

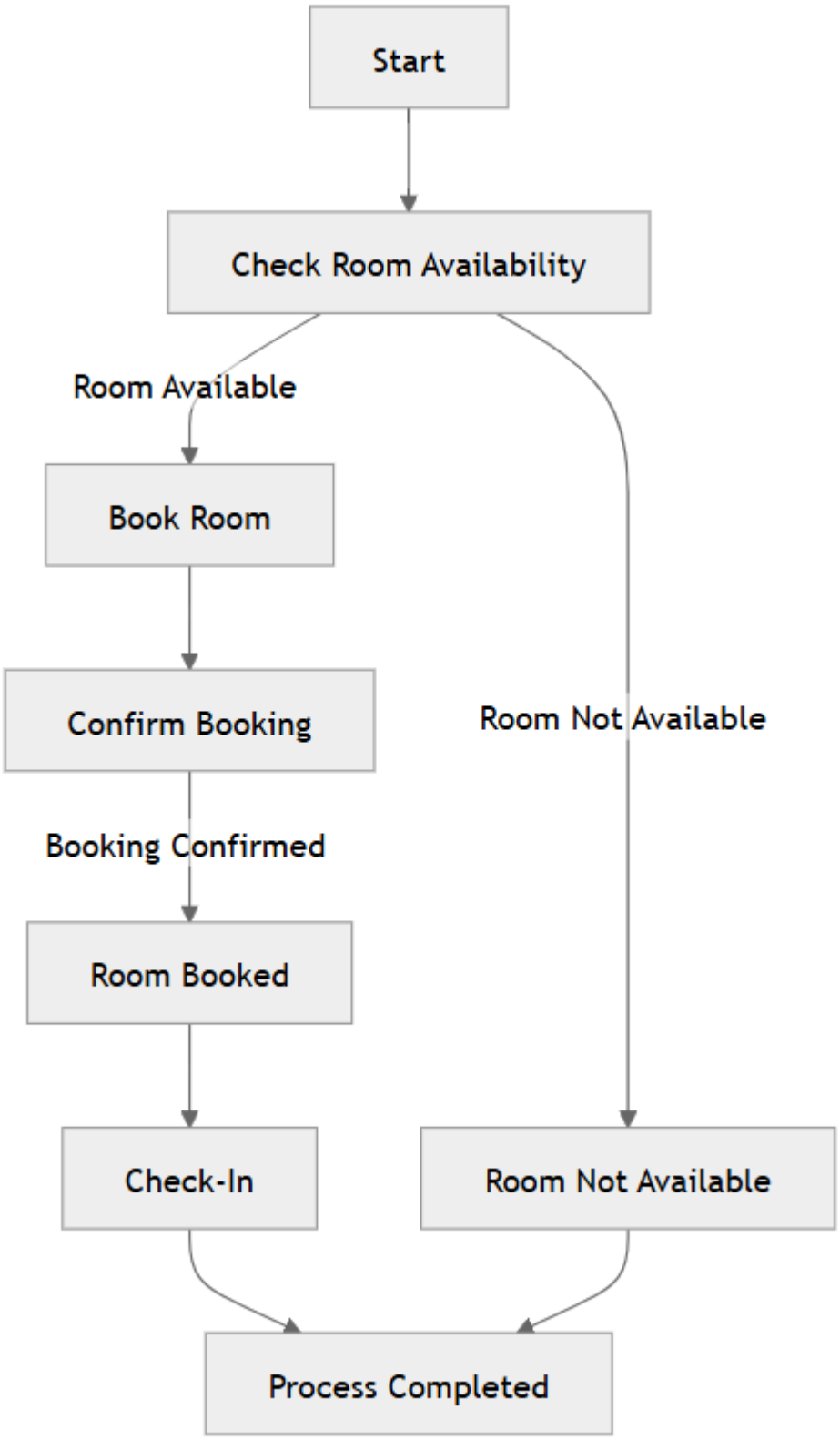
- **Node.js**: JavaScript runtime for server-side scripting, enabling scalable and event-driven operations.
- **Express.js**: Framework to build RESTful APIs for seamless communication between the front-end and database.
- **MySQL**: Relational database for storing and managing hotel data, including reservations, user information, and payments.

Technical Requirements:

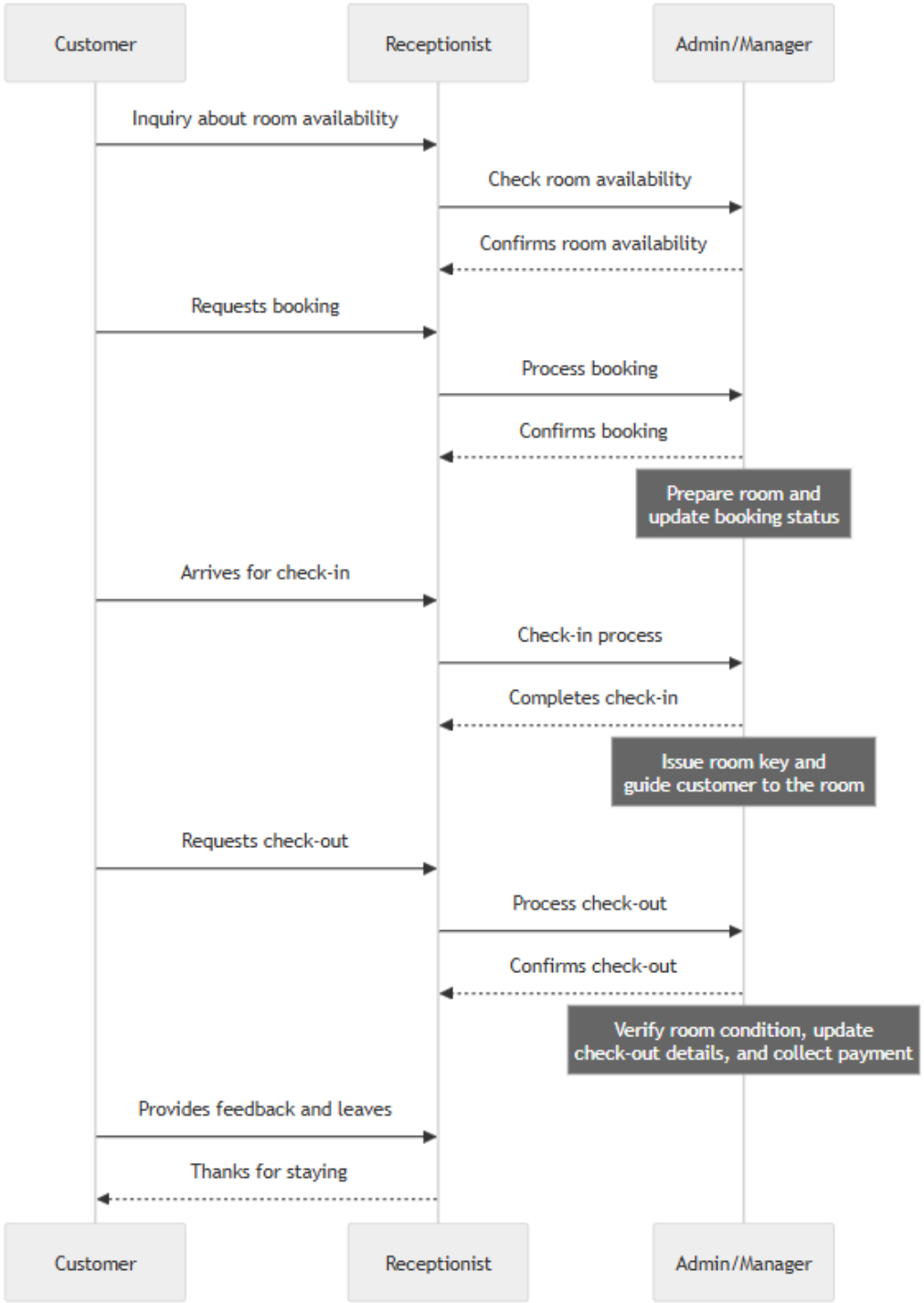
- **Database Optimization**: Use indexing and query optimization for efficient data retrieval.
- **Middleware Implementation**: For request logging, error handling, and security (e.g., CORS, Helmet for headers).
- **Session Management**: Handle user sessions securely using tokens and session expiry.

5. Feature Analysis

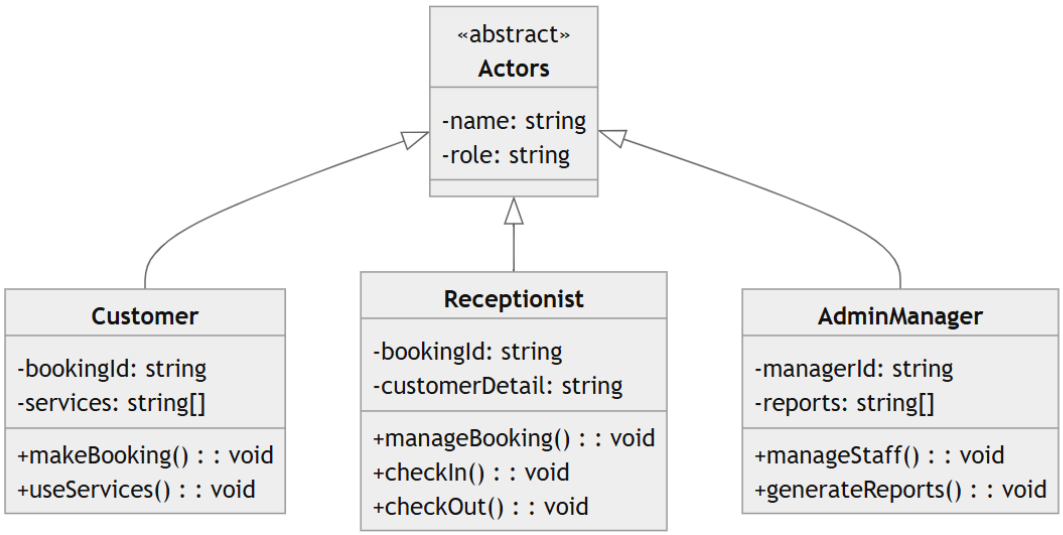
Flowchart Diagram:



Sequence Diagram:



Class Diagram:



6. Testing Process

To ensure the **Hotel Management System** operates flawlessly, the following testing processes will be implemented:

- **Unit Testing**:

  Component-level testing using **Jest** to verify the functionality of individual back-end and front-end units.

- **Integration Testing**:

  Testing interactions between different modules and components (e.g., reservation system interacting with payment gateway). Backend API calls will be tested using **Postman** or automated testing tools like **Supertest**.

- **End-to-End Testing (E2E)**:

  Cypress will be used to simulate real-world workflows, such as booking a room, checking in/out, and generating invoices, ensuring that the entire system works as expected.

- **User Acceptance Testing (UAT)**:

  A test group of hotel staff and real users will use the system to provide feedback on usability, performance, and overall satisfaction before deployment.

7. Support and Maintenance

- **Support Services**:
  - **24/7 Customer and Technical Support**: Dedicated support team available around the clock.
  - **Service-Level Agreements (SLAs)**: Guaranteed response and resolution times for critical issues based on pre-defined SLA tiers.
- **Maintenance Plan**:
  - **Regular Updates**: Periodic updates for security patches and performance enhancements.
  - **Bug Fixes**: Timely resolution of bugs identified during or post-deployment.
  - **Feature Enhancements**: Implementation of new features based on evolving business requirements or user feedback.

8. Cost Analysis

1. Development Costs

One-time cost for designing, building, and testing the system.

Category	Details	Estimated Cost (BDT)
System Development	Front-end, Back-end, Testing	৳600,000
Total Development		৳600,000

2. Deployment Costs

Cost for setting up and hosting the system.

Category	Details	Estimated Cost (BDT)
Cloud Deployment	Includes hosting and setup	৳100,000/year
Domain & SSL	Domain registration and SSL certificate	৳20,000/year
Total Development		৳120,000/year

3. Maintenance Costs

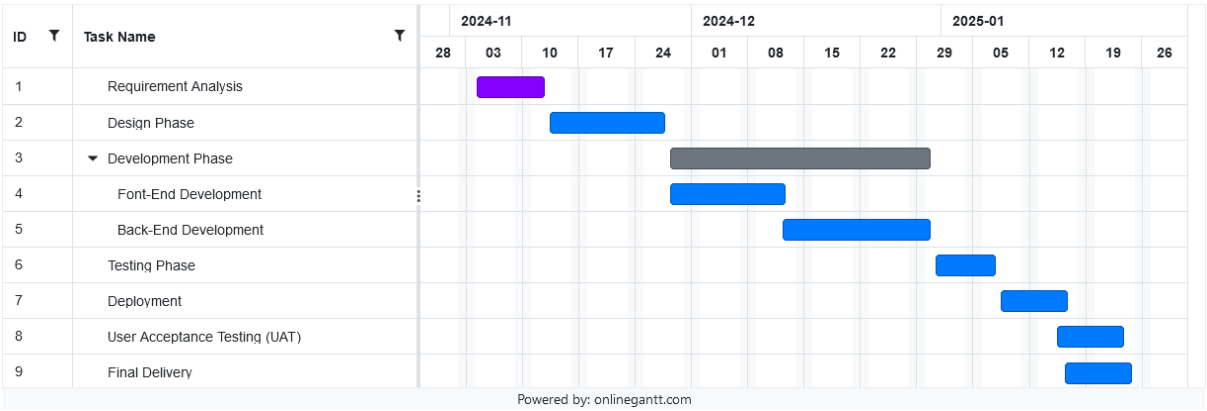
Annual costs for system updates, bug fixes, and support.

Category	Details	Estimated Cost (BDT)
System Maintenance	Updates, bug fixes, feature addition	৳300,000/year
Support	24/7 technical support	৳100,000/year
Total Development		৳400,000/year

Summary of Costs

Category	Estimated Cost (BDT)
Development	৳600,000
Deployment	৳120,000/year
Maintenance	৳400,000/year

9. Milestones and Timeline



10. Pricing and Payment Terms

- **Total Project Fee**: **৳1,200,000 BDT**
- **Payment Schedule**:
  - **20%** (৳240,000) upon completion of requirement analysis.
  - **40%** (৳480,000) upon completion of initial development and UI/UX design.
  - **30%** (৳360,000) after successful testing and User Acceptance Testing (UAT).
  - **10%** (৳120,000) upon final deployment and system handover.

11. Roles and Responsibilities (Shortened)

- **Client**: Provide project requirements, timely feedback, and approvals.
- **Frontend Developer**: Develop responsive UI using **HTML**, **CSS**, and **JavaScript**; handle user interactions and form validation.
- **Backend Developer**: Build and integrate APIs using **Node.js** and **MySQL**; ensure secure data management and server-side logic.
- **Project Manager**: Oversee project execution, manage timelines, and ensure deliverables meet quality standards.

Contact Us

You can reach us through any of the following methods:

- **Phone**: +880 1819025884
- **Email**: techvisionsolutions@gmail.com
- **Website**: www.techvisionsolutions.com

We look forward to hearing from you soon!