



Hotel Booking System

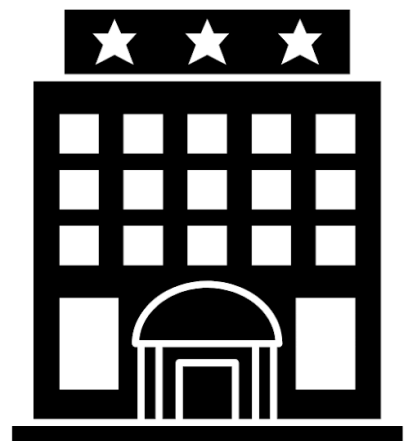
Deliverable 1

PREPARED BY :

22i-1291 Mishal Ali

22i-0861 Ayaan Mughal

22i-0832 Ayaan Khan



Introduction

The Hotel Booking System is a web-based platform designed to simplify hotel reservations for travelers, hotel management, and travel agents. Adopting the Scrum framework, the project emphasizes iterative development, continuous stakeholder feedback, and agile adaptation to ensure a seamless and efficient booking experience.

Vision

Our vision is to develop a robust, scalable, and user-friendly system that:

- **Enhances User Experience:** Streamlines search, booking, and management of reservations.
 - **Optimizes Operations:** Provides real-time updates, inventory control, and reporting tools for hotel staff.
 - **Supports Agile Delivery:** Uses Scrum to deliver incremental improvements, ensuring responsiveness to stakeholder needs throughout the project lifecycle.
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Intended Use of the System

Who Will Use the System

- **Travelers/Guests:** Search, book, and manage their hotel stays.
- **Hotel Management/Staff:** Update room availability, manage bookings, and access customer data.
- **Travel Agents:** Facilitate group or corporate bookings.

How the System Will Be Used

- **Intuitive Interface:** Accessible on desktop and mobile devices.
- **Real-Time Data:** Live updates for availability and pricing.
- **Self-Service Capabilities:** Options to modify or cancel bookings and access customer support.
- **Administrative Dashboard:** Tools for hotel management to monitor operations and generate detailed reports.

Stakeholders' Needs

- **Guests:** A secure, transparent, and easy booking process.
- **Hotel Management:** Efficient inventory control with detailed analytics.
- **Travel Agents:** Bulk booking features with flexible rate management.
- **Development Team:** Clear, well-documented requirements and a collaborative environment for agile iterations.

Features/Overall Functionality

What the System Will Do

- **Search & Filter:** Locate hotels by location, date, and preferences.
- **Reservation Engine:** Secure booking with real-time room availability and pricing.
- **Booking Management:** Create, update, or cancel reservations easily.
- **Payment Integration:** Secure processing through multiple payment options.
- **User Accounts:** Personalized profiles for managing bookings and loyalty programs.
- **Administrative Tools:** Back-end dashboard for hotel staff to manage operations.
- **Feedback System:** Allows guests to rate and review their stays.

How It Helps Users

- **For Guests:** Simplifies the reservation process, reduces comparison time, and streamlines payments.
 - **For Management:** Automates updates and offers real-time analytics to quickly address trends.
 - **For Agents:** Supports group booking and enhances efficiency for bulk reservations.
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User Stories and Sub-User Stories

- **US01: Searching and Filtering Hotels:** As a Guest, I want to search and filter hotels so that I can quickly find suitable accommodation.
 - **US01.1:** Allow guests to search hotels by entering location, check-in/check-out dates, and specific preferences (room type, budget, etc.).
 - **US01.2:** Enable filtering of search results based on amenities (Wi-Fi, breakfast, swimming pool, etc.) to enhance guest convenience.
 - **US01.3:** Provide sorting options by price, user ratings, or proximity to major landmarks or airports to streamline decision-making.
- **US02: Booking a Hotel Room:** As a Guest, I want to securely book a hotel room in real-time so that I have my accommodation confirmed to my liking
 - **US02.1:** Display comprehensive room details, including images, descriptions, pricing, and available dates.
 - **US02.2:** Offer guests the ability to select additional services such as breakfast, airport transportation, or special accommodations.
 - **US02.3:** Issue immediate booking confirmations and receipts upon successful payment transactions to assure guests of their reservations.

- **US03: Managing Bookings:** As a Guest, I want to manage my bookings so that I can adjust my travel plans easily and avoid miscommunication with the Hotel
 - **US03.1:** Provide guests with easy access to view their booking history and upcoming reservation details.
 - **US03.2:** Implement automated notifications via email or SMS to inform guests promptly of any booking changes, modifications, or cancellations.

- **US04: Providing Feedback:** As a Guest, I want to submit feedback about my stay so that service quality can be enhanced
 - **US04.1:** Allow guests to submit detailed reviews and ratings for hotels and rooms post-stay.
 - **US04.2:** Enable uploading of multimedia (photos/videos) with reviews to enhance feedback authenticity and usefulness.
 - **US04.3:** Provide the option for guests to edit or update previously submitted reviews.

- **US05: Facilitating Group Bookings:** As a Travel Agent, I want to manage bulk room reservations so that I can efficiently arrange group bookings
 - **US05.1:** Enable travel agents to manage bulk reservations efficiently.
 - **US05.2:** Allow easy assignment and management of individual rooms within group reservations.
 - **US05.3:** Implement a flexible system for applying and managing group discounts.

- **US06: Selecting Favourites/ Adding to the WishList:** As a Guest, I want to select and save hotels or specific rooms for future bookings so that I can reduce searching and filtering time
 - **US06.1:** Allow guests to add hotels or rooms to their favourites so that I can quickly access preferred options for future bookings.
 - **US06.2:** Enable easy removal of hotels or rooms from the favourites list so that I can manage my preferences efficiently.
 - **US06.3:** Ensure favourites are accessible in a dedicated tab so that I can conveniently review my saved options anytime.

- **US07: Enrolling in Loyalty Program:** As a Guest, I want to enroll in and participate in the loyalty program so that I can earn and redeem points or coupons for future bookings.
 - **US07.1:** Provide an option for eligible guests to join the loyalty program so that I can start accumulating rewards.
 - **US07.2:** Notify guests about their loyalty status and available rewards so that I can stay informed about my benefits.
 - **US07.3:** Allow guests to redeem earned points or coupons during bookings so that I can take advantage of my loyalty benefits.

- **US08: Register/Login:** As a User, I want to authenticate myself by logging in or creating a new account through signup so that I can book a room:
 - **US08.1:** Provide a registration option for new users so that I can create an account to access hotel booking services.
 - **US08.2:** Enable secure login with valid credentials so that I can access my account safely.
 - **US08.3:** Implement verification via a PIN for new signups so that I can ensure account security.
 - **US08.4:** Notify users of successful login so that I can confirm access to my account.
 - **US08.5:** Redirect users to the homepage upon successful authentication so that I can start browsing and booking rooms immediately.

- **US09: Managing Rooms:** As an Admin, I want to add and manage rooms so that I can optimise usage and costs
 - **US09.1:** Allow detailed entry of new room information including type, price, capacity, and special features.
 - **US09.2:** Facilitate easy updates to existing room details to keep information current.
 - **US09.3:** Provide functionality to remove rooms that are no longer available or in service.

- **US010: Viewing Booking Data:** As Hotel Staff, I want to access detailed booking data so that I can improve customer service and operational management.
 - **US010.1:** Facilitate quick retrieval of booking information based on guest name, booking dates, or room numbers for efficient customer service.
 - **US010.2:** Provide access to detailed guest profiles to personalize guest services and improve customer satisfaction.

- **US11: Manage Hotels:** As an Admin, I want to add and manage hotels within the system so that hotel information is accurate and reflective of available inventory
 - **US11.1:** Provide an intuitive interface for admins to add new hotels with necessary details like name, location, contact information, and amenities.
 - **US11.2:** Enable updating and editing of existing hotel information to ensure accuracy.
 - **US11.3:** Allow removal of hotel listings to maintain an up-to-date inventory.

- **US12: Manage Accounts:** As an Admin, I want to add, update, or remove user accounts so that I can ensure account information is accurate, secure, and up-to-date.
 - **US12.1:** Allow the creation of new user accounts so that I can grant system access to authorized users.
 - **US12.2:** Enable updating of existing user details so that I can keep account information current and accurate.
 - **US12.3:** Provide functionality to remove user accounts so that I can maintain security and restrict access when necessary.
 - **US12.4:** Ensure that all account modifications are logged so that I can track changes for auditing purposes.

- **US13: Adjust Prices:** As Hotel Management, I want to modify room pricing so that I can maintain competitive pricing and manage revenue effectively.
 - **US13.1:** Allow real-time adjustments to room pricing so that I can respond to changing market conditions.
 - **US13.2:** Provide an option to set automatic pricing rules based on predefined conditions so that I can streamline pricing updates.
 - **US13.3:** Ensure price changes are logged and documented so that I can maintain a history of adjustments for auditing and analysis.

- **US014: Generating Reports:** As Hotel Management, I want to generate detailed performance reports so that I can monitor progress
 - **US014.1:** Generate comprehensive occupancy and revenue reports to help management analyze performance.
 - **US014.2:** Allow reports to be exported in widely used formats such as Excel and PDF for better accessibility and review.

- **US15: Process Payment:** As Hotel Management, I want to process and verify payments so that I can ensure all financial transactions are handled securely and accurately.
 - **US15.1:** Integrate with secure payment gateways so that I can process transactions reliably.
 - **US15.2:** Validate and confirm payment details before processing so that I can prevent errors or fraud.
 - **US15.3:** Update booking statuses automatically upon successful payments so that I can ensure accurate records.
 - **US15.4:** Maintain detailed logs of all transactions so that I can support auditing and financial reconciliation.
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Structured Specifications

US01: Searching and Filtering Hotels

US01.1: Searching Hotels

Pre-condition: User inputs valid search criteria.

Post-condition: Hotels matching criteria are displayed.

Normal Flow: Enter location, dates → Search → Display results.

Alternative Flow: Notify if no results are found.

US01.2: Filtering Hotels by Amenities

Pre-condition: Hotels are listed from the initial search.

Post-condition: Filtered hotel results are displayed.

Normal Flow: Select amenities → Apply filter → Display updated results.

Alternative Flow: Alert if no matching amenities are found.

US01.3: Sorting Hotels

Pre-condition: Hotels are listed.

Post-condition: Hotels are sorted as per user choice.

Normal Flow: Choose sorting criteria → Display sorted results.

Alternative Flow: Default sorting if criteria are unspecified.

US02: Booking a Hotel Room

US02.1: Display Room Details

Pre-condition: User selects a hotel.

Post-condition: Comprehensive room details are displayed.

Normal Flow: Select hotel → View room details → Display images, descriptions, and pricing.

Alternative Flow: Notify if no rooms are available.

US02.2: Selecting Additional Services

Pre-condition: User is in the booking process.

Post-condition: Selected additional services are added to the booking.

Normal Flow: Choose additional services → Confirm selection → Update booking summary.

Alternative Flow: Notify if service is unavailable.

US02.3: Booking Confirmation

Pre-condition: Payment is successfully processed.

Post-condition: Booking confirmation and receipt are generated.

Normal Flow: Process payment → Generate confirmation → Send receipt via email/SMS.

Alternative Flow: Notify if payment fails.

US03: Managing Bookings

US03.1: Viewing Booking History

Pre-condition: User is logged in.

Post-condition: Booking history is displayed.

Normal Flow: Navigate to bookings → View past and upcoming reservations.

Alternative Flow: Notify if no booking history is available.

US03.2: Automated Notifications

Pre-condition: A booking is modified.

Post-condition: User receives a notification.

Normal Flow: Update booking → Send notification via email/SMS.

Alternative Flow: Notify if the message fails to send.

US04: Providing Feedback

US04.1: Submitting Reviews

Pre-condition: User has completed their stay.

Post-condition: Review is submitted successfully.

Normal Flow: Select stay → Enter review → Submit.

Alternative Flow: Notify if submission fails.

US04.2: Uploading Multimedia

Pre-condition: User is submitting a review.

Post-condition: Photos/videos are attached to the review.

Normal Flow: Select media → Upload → Attach to review.

Alternative Flow: Notify if the upload fails.

US04.3: Editing Reviews

Pre-condition: User has submitted a review.

Post-condition: Updated review is saved.

Normal Flow: Locate review → Edit content → Save changes.

Alternative Flow: Notify if editing is restricted.

US05: Facilitating Group Bookings

US05.1: Bulk Reservations

Pre-condition: Travel agent is logged in.

Post-condition: Group reservation is successfully created.

Normal Flow: Enter booking details → Assign rooms → Confirm booking.

Alternative Flow: Notify if room allocation is unavailable.

US05.2: Managing Assigned Rooms

Pre-condition: Group booking exists.

Post-condition: Individual room assignments are updated.

Normal Flow: Select booking → Update room assignment → Save changes.

Alternative Flow: Notify if rooms are unavailable.

US05.3: Managing Group Discounts

Pre-condition: Bulk reservation is eligible for a discount.

Post-condition: Discount is applied.

Normal Flow: Apply discount → Confirm price adjustment → Save booking.

Alternative Flow: Notify if the discount is invalid.

US06: Selecting Favourites/Adding to WishList

US06.1: Adding Hotels or Rooms to Favourites

Pre-condition: User is logged in.

Post-condition: Hotel/room is saved to favourites.

Normal Flow: Select hotel/room → Click add to favourites → Save.

Alternative Flow: Notify if the action fails.

US06.2: Removing Hotels or Rooms from Favourites

Pre-condition: User has items in favourites.

Post-condition: Item is removed from favourites.

Normal Flow: Open favourites → Select item → Remove.

Alternative Flow: Notify if the removal fails.

US06.3: Accessing Favourites

Pre-condition: User is logged in.

Post-condition: Favourites list is displayed.

Normal Flow: Navigate to favourites → View saved hotels/rooms.

Alternative Flow: Notify if the favourites list is empty.

US07: Enrolling in Loyalty Program

US07.1: Joining the Loyalty Program

Pre-condition: User meets eligibility criteria.

Post-condition: User is enrolled.

Normal Flow: Accept invitation → Enroll in program → Receive confirmation.

Alternative Flow: Notify if eligibility criteria are not met.

US07.2: Receiving Loyalty Status Updates

Pre-condition: User is enrolled in the program.

Post-condition: Loyalty status and rewards are displayed.

Normal Flow: Log in → Navigate to loyalty section → View status.

Alternative Flow: Notify if no loyalty data is available.

US07.3: Redeeming Points or Coupons

Pre-condition: User has available points.

Post-condition: Discount is applied to the booking.

Normal Flow: Select booking → Apply points/coupons → Confirm.

Alternative Flow: Notify if insufficient points.

US08: Register/Login

US08.1: User Registration

Pre-condition: User provides valid registration details.

Post-condition: Account is successfully created.

Normal Flow: Enter registration details → Submit → Receive verification PIN → Verify PIN → Account created.

Alternative Flow: Notify user if registration details are invalid or if the email/phone number is already in use.

US08.2: Secure Login

Pre-condition: User has a registered account.

Post-condition: User is successfully logged in.

Normal Flow: Enter login credentials → Authenticate → Redirect to homepage.

Alternative Flow: Notify user if login credentials are incorrect.

US08.3: PIN Verification for Signup

Pre-condition: User has successfully submitted registration details.

Post-condition: Account is verified and activated.

Normal Flow: System sends verification PIN → User enters PIN → Account activated.

Alternative Flow: Notify user if PIN is incorrect or expired.

US08.4: Successful Login Notification

Pre-condition: User has entered correct credentials.

Post-condition: User receives confirmation of login.

Normal Flow: Authenticate user → Notify successful login → Redirect to homepage.

Alternative Flow: Alert if login is from a new device and require additional verification.

US08.5: Homepage Redirection

Pre-condition: User is successfully authenticated.

Post-condition: Homepage is displayed.

Normal Flow: Authenticate → Redirect to homepage.

Alternative Flow: Redirect user to an onboarding page if first-time login.

US09: Managing Rooms

US09.1: Adding New Rooms

Pre-condition: Admin has the necessary permissions.

Post-condition: Room is successfully added to the system.

Normal Flow: Enter room details → Save → Confirm addition.

Alternative Flow: Notify if required fields are missing.

US09.2: Updating Room Details

Pre-condition: Room exists in the system.

Post-condition: Updated details are saved.

Normal Flow: Select room → Edit details → Save changes.

Alternative Flow: Notify if update fails due to missing or incorrect data.

US09.3: Removing Rooms

Pre-condition: Admin has necessary permissions.

Post-condition: Room is removed from active listings.

Normal Flow: Select room → Remove → Confirm deletion.

Alternative Flow: Notify if the room cannot be deleted due to active bookings.

US10: Viewing Booking Data

US10.1: Retrieving Booking Information

Pre-condition: Hotel staff is logged in.

Post-condition: Booking details are displayed.

Normal Flow: Search by guest name, booking dates, or room number → Display results.

Alternative Flow: Notify if no matching records are found.

US10.2: Accessing Guest Profiles

Pre-condition: Booking exists for the guest.

Post-condition: Detailed guest profile is displayed.

Normal Flow: Select guest name from booking list → View profile.

Alternative Flow: Notify if the profile is incomplete or missing.

US11: Manage Hotels

US11.1: Adding New Hotels

Pre-condition: Admin has necessary permissions.

Post-condition: Hotel is successfully added to the system.

Normal Flow: Enter hotel details → Save.

Alternative Flow: Notify if details are incomplete or if the hotel already exists.

US11.2: Updating Hotel Details

Pre-condition: Hotel exists in the system.

Post-condition: Updated details are saved.

Normal Flow: Select hotel → Edit details → Save changes.

Alternative Flow: Notify if update fails.

US11.3: Removing Hotels

Pre-condition: Admin has necessary permissions.

Post-condition: Hotel is removed from active listings.

Normal Flow: Select hotel → Remove → Confirm deletion.

Alternative Flow: Notify if hotel has active bookings and cannot be removed.

US12: Manage Accounts

US12.1: Creating User Accounts

Pre-condition: Admin is logged in.

Post-condition: User account is created.

Normal Flow: Enter user details → Assign role → Save.

Alternative Flow: Notify if details are invalid.

US12.2: Updating User Details

Pre-condition: User account exists.

Post-condition: Updated details are saved.

Normal Flow: Select user → Edit details → Save.

Alternative Flow: Notify if the update fails.

US12.3: Removing User Accounts

Pre-condition: Admin has necessary permissions.

Post-condition: Account is removed.

Normal Flow: Select user → Remove account → Confirm deletion.

Alternative Flow: Notify if the user has active reservations or permissions preventing deletion.

US12.4: Logging Account Changes

Pre-condition: Any modification is made to a user account.

Post-condition: Change is recorded in the system.

Normal Flow: Admin modifies an account → System logs change.

Alternative Flow: Notify if logging fails due to a system issue.

US13: Adjust Prices

US13.1: Modifying Room Pricing

Pre-condition: Admin has necessary permissions.

Post-condition: Price changes are reflected in the system.

Normal Flow: Adjust pricing → Confirm changes → Save.

Alternative Flow: Notify if the update fails.

US13.2: Setting Automated Pricing Rules

Pre-condition: Admin has access to pricing management.

Post-condition: Automatic pricing rules are applied.

Normal Flow: Define conditions → Save → System updates prices accordingly.

Alternative Flow: Notify if rules conflict with existing settings.

US13.3: Logging Price Adjustments

Pre-condition: Price changes are made.

Post-condition: Adjustments are recorded in the system.

Normal Flow: Modify price → Save → Log entry created.

Alternative Flow: Notify if logging fails.

US14: Generating Reports

US14.1: Generating Occupancy and Revenue Reports

Pre-condition: Admin is logged in.

Post-condition: Report is generated.

Normal Flow: Select report type → Generate → Display.

Alternative Flow: Notify if report generation fails.

US14.2: Exporting Reports

Pre-condition: Report is generated.

Post-condition: Report is downloaded in the selected format.

Normal Flow: Choose format (PDF/Excel) → Export → Download.

Alternative Flow: Notify if export fails.

US15: Process Payment

US15.1: Processing Transactions

Pre-condition: Secure payment gateway is available.

Post-condition: Payment is successfully processed.

Normal Flow: Enter payment details → Process transaction → Confirm booking.

Alternative Flow: Notify if payment fails.

US15.2: Validating Payment Details

Pre-condition: User enters payment details.

Post-condition: Payment is validated.

Normal Flow: System checks card details → Validate with bank → Confirm.

Alternative Flow: Notify if card is declined.

US15.3: Updating Booking Status

Pre-condition: Payment is successful.

Post-condition: Booking status is updated.

Normal Flow: Confirm payment → Update booking record → Notify user.

Alternative Flow: Notify if status update fails.

US15.4: Maintaining Payment Logs

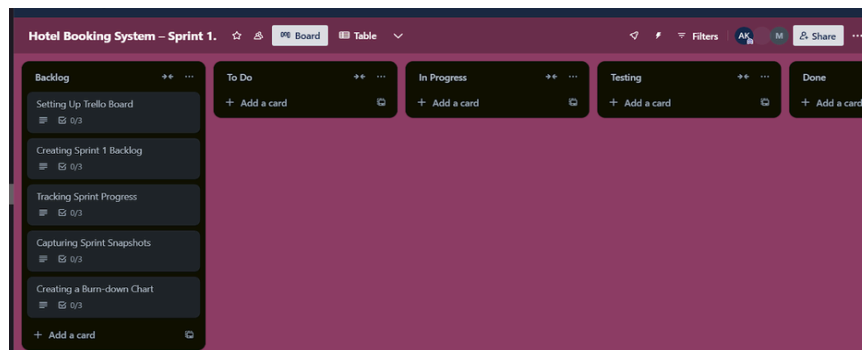
Pre-condition: A transaction is completed.

Post-condition: Transaction is logged for auditing.

Normal Flow: Process payment → Save transaction details.

Alternative Flow: Notify if logging fails.

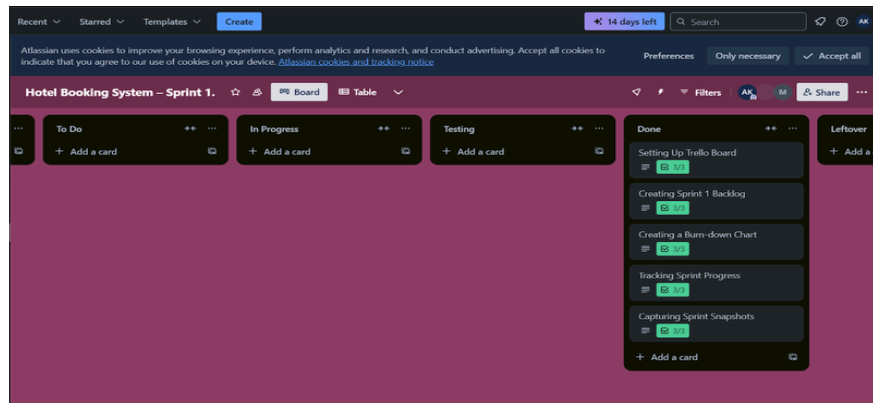
Scrum Board (Trello)



NFR Specification:

- **Performance:** Pages load within 2 seconds under normal load.
 - **Reliability:** 99.5% uptime monthly.
 - **Scalability:** Capable of supporting a growing user base without degradation.
 - **Security:** Adheres to industry standards (PCI-DSS, GDPR) for data and payment processing.
 - **Usability:** Interfaces are intuitive and accessible.
 - **Maintainability:** Code is modular, well-documented, and easy to update.
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Iteration 1 implementation



Work Division

Ayaan Khan (Team Lead, Project Manager, Tester, Scrum Master):

Oversees overall project management, coordinates scrum activities (Trello board, sprint planning, daily stand-ups, retrospectives), and conducts testing/quality assurance.

Ayaan Mughal (Developer, UI Designer):

Develops front-end components and designs a user-friendly interface, ensuring smooth integration with back-end systems.

Mishal Ali (Developer, Requirement Analyst/Architect):

Gathers and documents requirements, designs the system architecture, and develops back-end functionalities to ensure scalability and maintainability.

Collaboration:

Team members meet daily and review progress in sprint reviews and retrospectives to ensure timely issue resolution and alignment with project goals.