

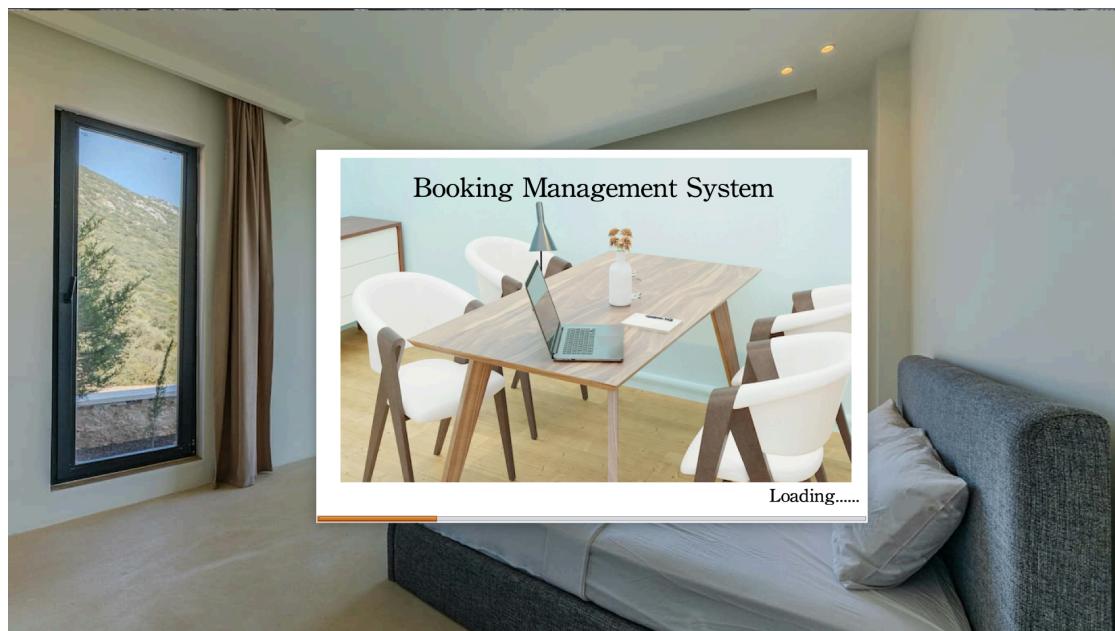
# Report Project OOVP (Booking Management System)

## Group Members:

1. Daniel L. Tobing - 001202400142
2. Muhammad Nabil Indraprasta - 001202400186
3. Tentin Nofa Tuzika - 001202400134

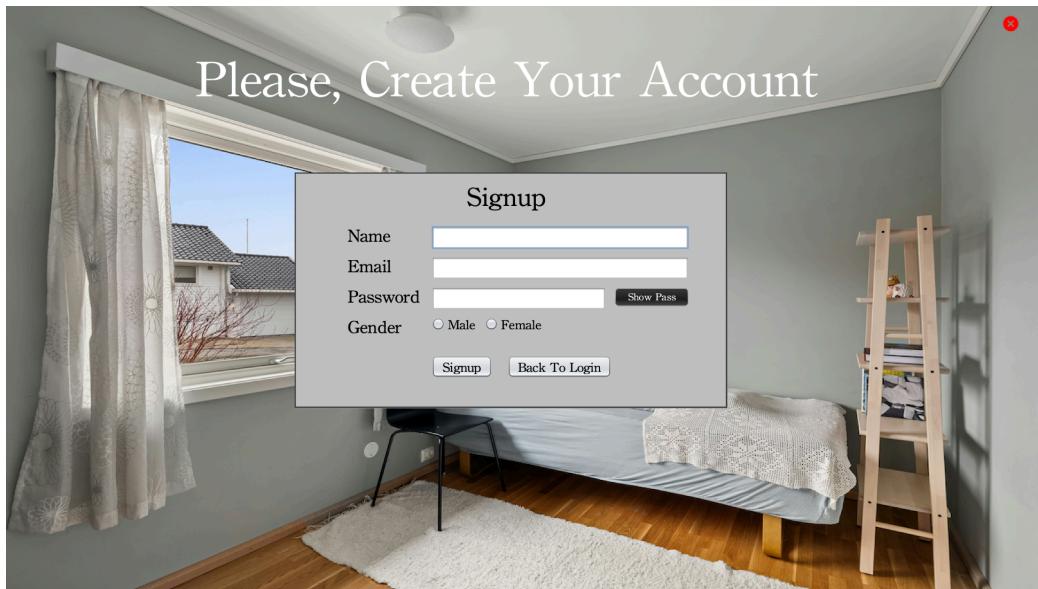
## A.1 OVERVIEW

This project aims to create a comprehensive Booking Management System that facilitates room booking, customer check-in/check-out processes, billing management, and administrative functions. The system is built using Java with NetBeans IDE and Java Swing for the user interface, providing a desktop-based solution for hotel operations management.



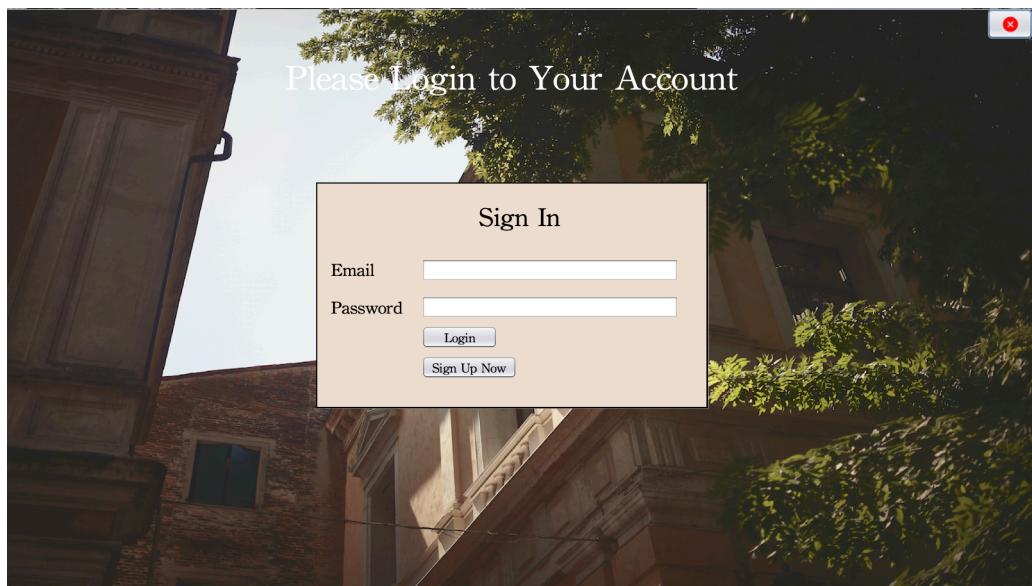
**Page A1.1 (Loading Page)**

Initial system loading screen that displays the hotel logo, system initialization progress, and provides a professional welcome interface while the application loads necessary resources and establishes database connections to the BM\_System MySQL database.



**Page A1.2 (Register Page)**

User registration page where new Staff members can create accounts by providing personal information including name, email, password, and gender selection. The system validates email uniqueness in the users table and ensures all required fields are completed before account creation.



**Page A1.3 (Login Page)**

Authentication page for registered staff to access their accounts using email and password credentials stored in the users table. The system authenticates users against the database and provides access to the hotel management functions upon successful login.



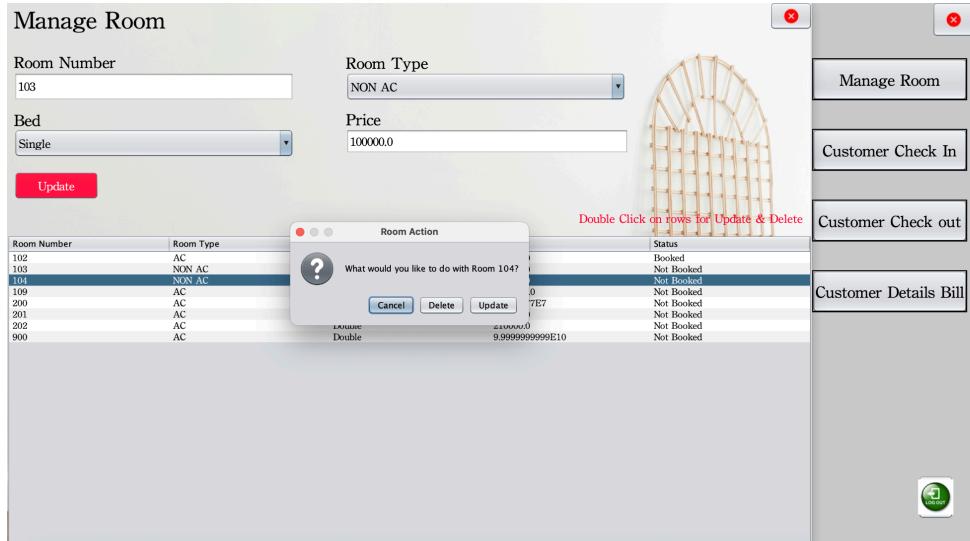
### Page A1.4 (Home Page)

The main dashboard displaying hotel overview information including total rooms, occupied rooms, available rooms, and current guest statistics. Provides navigation buttons to all major system functions including room management, customer check-in/out, and billing operations.

Manage Room					
Room Number	Room Type	Bed	Price	Status	
102	AC	Single	200000.0	Booked	
103	NON AC	Single	100000.0	Not Booked	
104	NON AC	Double	130000.0	Not Booked	
109	AC	Single	180000.0	Not Booked	
200	AC	Double	17777777E7	Not Booked	
201	AC	Single	180000.0	Not Booked	
202	AC	Double	210000.0	Not Booked	
900	AC	Double	9.999999999E10	Not Booked	

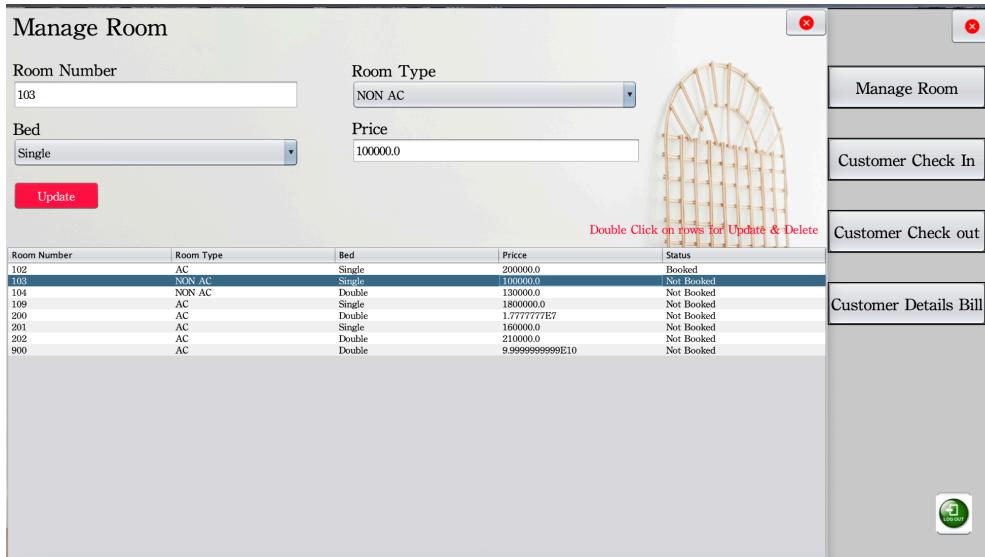
### Page A1.5 (Manages Room Page)

Administrative interface for managing the hotel's room inventory. Displays rooms from the room table in a tabular format showing room numbers, room types (AC/NON AC), bed configurations (Single/Double), daily prices, and current status (Booked/Not Booked). Staff can view and manage all room information.



### Page A1.5.1 (Manages Room Delete/Update)

Room management control panel allowing authorized staff to modify or remove rooms from the system. Provides options to delete room records or navigate to the update interface, with confirmation dialogs to prevent accidental data loss.



### Page A1.5.2 (Manages Room Update)

Detailed room editing interface where staff can update room information including room type, bed configuration, daily rates, and availability status. Changes are immediately saved to the room table and reflected throughout the system.

Customer Check In

Name

Check IN Date (Today)  
2025/05/26

Mobile Number

Room Type  
AC

Email

Bed  
Single

Gender  
Male

Room Number

Nationality

Price

Address

Allote Room  
Clear

Manage Room  
Customer Check In  
Customer Check out  
Customer Details Bill

### Page A1.6 (Customer CheckIn Page)

Check-in processing interface where front desk staff can register new guests and assign rooms. Collects customer information including name, mobile number, email, nationality, gender, address, and assigns available rooms. Data is stored in the customer table with check-in date and room details.

Customer Check Out

Room Number  Search

Customer Name  Customer Mobile Number  Email

Price Per Day  Number of Days  Total Amount to Collect From Customer

Check in Date  Check out Date(Today)  Check Out  
2025/05/26  Clear

Name	Mobile Number	Email ID	Check IN Date	Nationality	Gender	Address	Room Number	Bed	Room Type	Price Per Day
daniel	099999999999	daniel@gmail.com	2025/05/25	Indonesia	Male	Jababeka Cikarang	101	Double	AC	150000.0
pusri	08123456789	pusri@gmail.com	2025/05/26	Malaysia	Female	Bukit Tinggi	102	Single	AC	200000.0

Manage Room  
Customer Check In  
Customer Check out  
Customer Details Bill

### Page A1.7 (Customer CheckOut Page)

Check-in processing interface where front desk staff can register new guests and assign rooms. Collects customer information including name, mobile number, email, nationality, gender, address, and assigns available rooms. Data is stored in the customer table with check-in date and room details.

**Customer Details Bill**

Search by CheckOut Date

Double Click on row to Open Bill

Bill ID	Room Nu...	Name	Mobile N...	Nationality	Gender	Email	Address	Check in ...	Check ou...	Bed	Room Type	Price	Number ...	Total Am...
1	201	tentin	088888888...	Indonesia	Female	tentin@g...	Jababeka ...	2025/05/25	2025/05/2...	Single	AC	1	160000.0	
8	103	nabil	08129522...	Indonesia	Male	nabil1@g...	Jababeka ...	2025/05/26	2025/05/2...	Single	NON AC	1	100000.0	

### Page A1.8 (Details Bill Page)

Comprehensive billing interface displaying itemized customer charges including room information, daily rates, number of days stayed, and total amount. Shows complete customer details and stay information retrieved from the customer table for billing purposes.

**Customer Details Bill**

Search by CheckOut Date

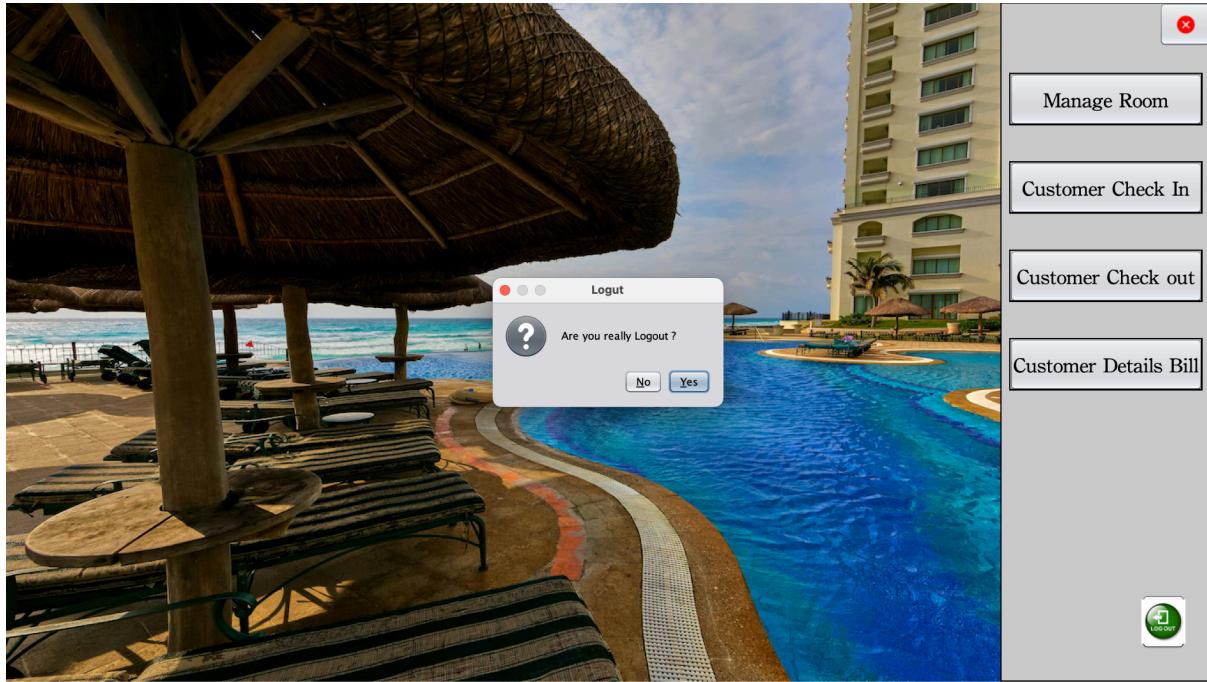
Bill ID	Room Nu...	Name	Mobile N...	Nationality
1	201	tentin	088888888...	Indonesia
8	103	nabil	08129522...	Indonesia

: Booking :

\*\*\*\*\*  
Bill ID: 1  
Customer Details:  
Name: tentin  
Mobile Number: 088888888888  
Email: tentin@gm...  
\*\*\*\*\*  
Room Details:  
Room Number: 201  
Type: AC  
Bed: Single  
Price: Non  
Check IN Date=2025/05/25  
Check OUT Date=2025/05/25  
Number of Days=1  
Total Amount=160000.0  
\*\*\*\*\*  
Thank You. Please Visit Again.

### Page A1.9 (Bill Calculate)

Automated billing calculation system that computes total charges based on room daily rates (priceperday) and length of stay (days). The system calculates the final amount automatically and updates the customer record with billing information.



### Page A1.10 (LogOut)

Secure logout functionality that terminates the current user session, clears any cached data, and returns to the login screen. Ensures proper session management and security for the desktop application.

## A.2 BUSINESS FUNCTIONS

### Staff/User Functions

- User Registration (Create new staff accounts in users table)
- Login/Logout (Authenticate staff using email and password)
- Room Management (Add, update, delete room information in room table)
- Customer Check-in (Register new guests and assign rooms)
- Customer Check-out (Process departures and calculate final bills)
- View Room Status (Monitor room availability and booking status)
- Customer Management (View and manage guest information)
- Billing Operations (Generate and calculate customer bills)
- Room Availability Tracking (Update room status between Booked/Not Booked)
- Guest Information Management (Maintain customer records and history)

### Administrative Functions

- User Account Management (Manage staff login credentials)
- Room Inventory Control (Maintain room database and pricing)
- Guest Record Management (Maintain customer history and billing records)
- System Configuration (Configure room types, pricing, and policies)
- Data Backup and Maintenance (Ensure data integrity and system reliability)

## A.3 DATA REQUIREMENTS

- User Account Information (id, name, email, password, gender)
- Room Data (roomnumber, roomtype, bed, price, status)
- Customer Booking Data (billid, name, mobile, email, date, nationality, gender, id, address, roomnumber, bed, roomtype, price, status, outdate, days, amount, priceperday)

## A.4 BUSINESS RULES

1. Staff Authentication: All staff must register with unique email addresses and authenticate using valid credentials stored in the users table.
2. Room Identification: Each room must have a unique room number. Room information including type, bed configuration, and pricing must be maintained accurately.
3. Room Availability: Room status must be updated in real-time. When a room is assigned to a guest, status changes to "Booked". Upon check-out, status returns to "Not Booked".
4. Customer Registration: Guest information must be collected during check-in including name, mobile number, email, nationality, gender, and address.
5. Room Assignment: Available rooms (status = "Not Booked") can be assigned to checking-in guests. Booked rooms cannot be double-assigned.
6. Check-in Process: Guest check-in requires complete customer information and room assignment. The system records check-in date and updates room status.
7. Billing Calculation: Guest bills are calculated based on room's daily rate (priceperday) multiplied by the number of days stayed.
8. Check-out Process: During check-out, the system calculates total stay duration, generates final bill amount, and updates customer record with check-out date.
9. Room Pricing: Each room type has different daily rates. AC rooms are priced higher than NON AC rooms. Double bed rooms cost more than single bed rooms.
10. Data Integrity: Foreign key relationships are maintained between customer room assignments and room inventory.
11. Status Management: Customer status is updated to "check out" upon departure. Room status reverts to "Not Booked" for future bookings.
12. Bill Generation: Each customer transaction generates a unique bill ID (billid) for tracking and accounting purposes.
13. Contact Information: Customer mobile numbers and email addresses are required for communication and emergency contact.
14. Nationality Tracking: Guest nationality information is collected for reporting and regulatory compliance purposes.
15. Address Records: Complete guest address information is maintained for legal and communication requirements.

16. Date Format Standardization: All dates are stored in YYYY/MM/DD format for consistency and sorting.
17. Gender Information: Both staff and guest gender information is recorded for statistical and service purposes.
18. Price Consistency: Room prices in the customer table (priceperday) should match the current rates in the room table.
19. Unique Email Policy: Staff email addresses must be unique in the users table to prevent authentication conflicts.
20. Room Type Categories: Only predefined room types (AC, NON AC) and bed types (Single, Double) are allowed in the system.
21. Automatic Calculations: The system automatically calculates stay duration and total amounts to prevent manual calculation errors.

## A.5 CRUD Operations Implementation

### Create Operations

- Staff Registration: Insert new user records into users table with unique email validation
- Customer Check-in: Create new customer records with complete guest information
- Room Addition: Add new rooms to the room table with pricing and configuration
- Billing Records: Generate new bill entries during guest stays
- Transaction Logging: Create audit trails for all system operations

### Read/Select Operations

- Staff Authentication: Query users table for login verification
- Room Availability: Display available rooms with current status and pricing
- Customer Information: Retrieve guest details for check-in/check-out processes
- Billing Display: Show itemized bills with stay details and calculations
- Room Status Monitoring: Real-time room occupancy and availability reports

## Update Operations

- Room Status Changes: Update room availability between "Booked" and "Not Booked"
- Customer Information: Modify guest details during their stay
- Room Pricing: Update daily rates and room configurations
- Billing Updates: Calculate and update final amounts during check-out
- Status Management: Change customer status upon check-out completion

## Delete Operations

- Room Removal: Delete room records from inventory (with proper validation)
- User Account Deactivation: Remove staff access when no longer needed
- Data Cleanup: Archive or remove old customer records as per policy
- System Maintenance: Clean up temporary data and optimize database performance
- Error Correction: Remove incorrect entries with proper authorization

## A.6 Utilization of components

- JFrame: Main application windows for each functional page (Loading, Login, Home, etc.)
- JPanel: Container components for organizing UI elements and creating layouts
- JButton: Interactive buttons for navigation and action triggers (Login, Check-in, Check-out, Update, Delete)
- JTextField: Input fields for data entry (name, email, room number, pricing)
- JComboBox: Dropdown selections for predefined options (gender, room type, bed type)
- JTable: Data display grids for showing room inventory and customer information
- JLabel: Text labels for form fields and information display
- JPasswordField: Secure password input for staff authentication
- JTextArea: Multi-line text input for addresses and notes
- JDateChooser: Date selection components for check-in/check-out dates
- JScrollPane: Scrollable containers for data tables and large content areas, enabling users to view extensive room lists, customer records, and billing information
- JProgressBar: Loading indicators during system initialization, database operations, and data processing tasks