

OBJECT-ORIENTED AND VISUAL PROGRAMMING REPORT
P2H (PULU-PULU HOTEL)



Lecturer:

Williem

Class:

CIT - 4

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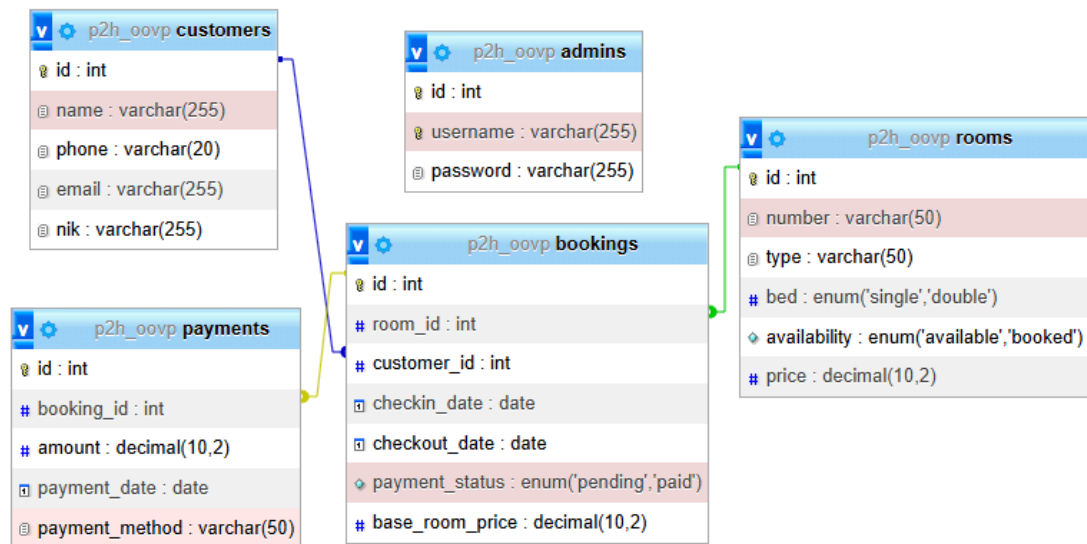
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CHAPTER A.

OOVP PROJECT'S REQUIREMENTS

A.1. Utilisation of a Database to Store the Data


This project consists of five tables: admins, customers, payments, bookings, and rooms.



A.2. CRUD Processes

A.2.1 Create

P2H use the create process in the Check-in section to collect customer and booking information (Name, NIK, Phone Number, Email, Check-In/Out dates, Room Type, Bed Type, Room Number, and Payment Method) when the staff clicks “Book Now”, the system will save this new data to the database. Furthermore, in the Room Management, create is used to insert a new room record into the database by clicking the “Add Room” button.

 **CHECK IN HOTEL**

Customer Data
Name:

NIK:

Phone Number:

Email:


Room Booking
Check-In:

Check-Out:


Room Number:

Guest:

Transfer Bank:

Message
 Customer and Booking Added Successfully

@anjelin.in

 **ROOM MANAGEMENT**


Room Number :

Room Type :

Room Bed :

Price :

Room Number	Type	Bed	Availability	Price
103	Deluxe	Double	available	Rp. 300.000.-
104	Deluxe	Double	booked	Rp. 750.000.-
105	Deluxe	Double	booked	Rp. 500.000.-
110	Deluxe	Double	available	Rp. 750.000.-
111	Deluxe	Double	available	Rp. 2.500.000.-
112	Deluxe	Double	booked	Rp. 300.000.-
113	Deluxe	Double	available	Rp. 20.-

Message
 Room Added

@anjelin.in

A.2.2 Read / Select

The implementation of the read/select process in this project is located in the Check-out section, which is to retrieve all customer and booking details by room number.

The screenshot shows the 'CHECKOUT HOTEL' interface. At the top, there is a search bar with the room number '101' and a 'Search Room Number' button. Below this, the form is organized into three columns. The first column contains fields for Name (Adellya), NIK (001122334477), Mobile Phone (08987654329), and Email (Del@gmail.com). The second column contains fields for Check In Date (2025-05-29), Room Type (Standard), Price Per D... (Rp. 300.000,-), and Total Amount (Rp. 300.000,-). The third column contains fields for Checkout Date (2025-05-31), Bed Type (single), and Payment Method (Transfer Bank). At the bottom, there are buttons for 'Back to Dashboard', 'Clear', and 'Checkout and Print Receipt'. The footer includes the text '@anjelin.ln'.

A.2.3 Update

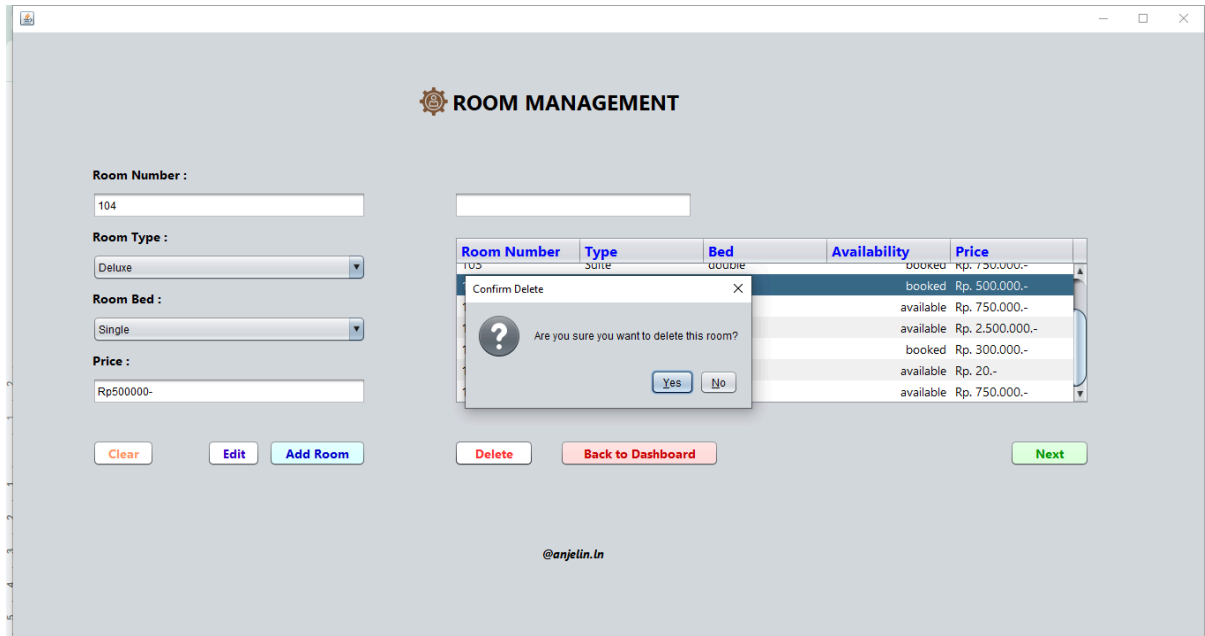
The update process is implemented in the Check-out part, where the room availability status changes from “Booked” to “Available” or otherwise in the backend. Next, in the Room Management, the update is used by selecting a row and clicking “Edit” to update the selected room’s details.

The screenshot shows the 'ROOM MANAGEMENT' interface. On the left, there are input fields for Room Number (105), Room Type (Suite), Room Bed (Double), and Price (Rp750000-). Below these are buttons for 'Clear', 'Edit', and 'Add Room'. On the right, there is a table with columns: Room Number, Type, Bed, Availability, and Price. The table contains several rows of data. A modal window titled 'Room Updated' is displayed over the table, indicating a successful update. The footer includes the text '@anjelin.ln'.

Room Number	Type	Bed	Availability	Price
105	Suite	Double	booked	Rp. 750.000.-
104	Single	Single	booked	Rp. 500.000.-
105	Single	Single	available	Rp. 750.000.-
110	Single	Single	available	Rp. 2.500.000.-
111	Double	Double	booked	Rp. 300.000.-
112	Double	Double	available	Rp. 20.-
113	Double	Double	available	Rp. 750.000.-

A.2.4 Delete

In the Room Management section, the delete process was implemented through “Delete” button to removes the selected room from the system.



A.3. Utilisation of Components

Pulu-Pulu Hotel use several components in order to accept user inputs, for instance:

A.3.1 JLabel

Almost a title for every section in this project uses JLabel to display the form title and icon. Next, field labels (e.g. Name, NIK, Phone, Email, etc) for text labels for inputs.

```
private javax.swing.JLabel jLabel1;  
private javax.swing.JLabel jLabel10;  
private javax.swing.JLabel jLabel11;  
private javax.swing.JLabel jLabel12;  
private javax.swing.JLabel jLabel13;  
private javax.swing.JLabel jLabel2;  
private javax.swing.JLabel jLabel3;  
private javax.swing.JLabel jLabel4;  
private javax.swing.JLabel jLabel5;  
private javax.swing.JLabel jLabel6;  
private javax.swing.JLabel jLabel7;  
private javax.swing.JLabel jLabel8;  
private javax.swing.JLabel jLabel9;
```

A.3.2 JTextField

JTextField is used to enter customer data (Name, NIK, Phone, Email). Next, in the login page, a JTextField is used for capturing the user's username.

```
private javax.swing.JTextField txtBed;  
private javax.swing.JTextField txtCheckin;  
private javax.swing.JTextField txtCheckout;  
private javax.swing.JTextField txtEmail;  
private javax.swing.JTextField txtNIK;  
private javax.swing.JTextField txtName;  
private javax.swing.JTextField txtPaymentMethod;  
private javax.swing.JTextField txtPhone;  
private javax.swing.JTextField txtPrice;  
private javax.swing.JTextField txtRoomNumber;  
private javax.swing.JTextField txtRoomType;  
private javax.swing.JTextField txtTotalPrice;
```

A.3.3 JDateChooser

This components is from external and use For check-in/out dates.

```
private com.toedter.calendar.JDateChooser jDateChooser1;  
private com.toedter.calendar.JDateChooser jDateChooser2;
```

A.3.4 JComboBox

JComboBox is used for dropdown selections for room preferences (room type, room bed, and room number) and payment method in the check-in section.

```
private javax.swing.JComboBox<String> cmbBed;  
private javax.swing.JComboBox<String> cmbType;
```

A.3.5 JButton

Buttons like “Back to Dashboard”, “Clear”, “Book Now”, “Login” are using JButton for navigation and submission.

```
private javax.swing.JButton Back;  
private javax.swing.JButton ClearForm;  
private javax.swing.JButton DeleteRoom;  
private javax.swing.JButton EditRoom;  
private javax.swing.JButton Next;  
private javax.swing.JButton btnAddRoom;
```

A.3.6 JTable

JTable is used to display room records with columns: Room Number, Type, Bed, Availability, and Price.

```
private javax.swing.JTable roomTable;
```

Room Number	Type	Bed	Availability	Price

A.3.7 JScrollPane

JScrollPane is used for the JTable's scrollable wrapper.

```
private javax.swing.JScrollPane jScrollPane1;
```


CHAPTER B.

OOVP DESIGN CASE STUDY

B.1. Overview of the Case Study

P2H (Pulu-Pulu Hotel) Management System is a desktop-based application developed using Java Swing to assist hotel staff in efficiently handling core operational tasks such as guest check-in, check-out, and reservation management. This system is designed to streamline the front-desk workflow and provide a user-friendly interface for hotel administrators to manage customer data and room bookings with ease.

Main Features:

- Check-In Module: Allows staff to input customer information, select room types, specify check-in and check-out dates, and calculate the total cost automatically.
- Check-Out Module: Enables staff to retrieve reservation data using the room number, verify details, and process payments.
- Receipt Generation: Provides functionality to print a receipt upon check-out for customer records.
- Dashboard Navigation: Central control to navigate between system modules (Check-In, Check-Out, Dashboard).

Technology Stack:

- Java Swing for GUI development
- MySQL for data storage
- External Libraries such as **JDateChooser** for date inputs

This system provides a foundation for automating and digitizing hotel front-office operations, improving data accuracy, and enhancing customer service efficiency.

B.2. Business Logic

1. Room Management

- Rooms are identified by unique room numbers.
- Each room has attributes: type (Standard, Deluxe, Suite), bed type (Single, Double),

price, and availability status.

- Staff can: Create a new room entry, update room details (e.g., type, price), delete a room entry, view all available/occupied rooms in a table.

Business Rule:

Room cannot be marked as “available” if it is currently booked.

2. Customer Check-In

- Customers provide personal information: Name, NIK (ID), phone number, email.
- Staff selects check-in/check-out dates, room type, and payment method.
- The system calculates the total cost based on the number of days and room price per day.
- The selected room’s availability is updated to “booked”.

Business Rule:

- $\text{Total amount} = \text{Room Price per Day} \times \text{Number of Nights}$
- Check-in date must be before check-out date.

3. Customer Check-Out

- Room number is used to retrieve the reservation data.
- Displays the guest’s full booking information (name, dates, room type, total price, payment method).
- Upon confirmation, the room availability is updated to “available” again.
- Option to print a receipt for the guest.

Business Rule:

Checkout cannot occur before the registered check-in date.

4. Validation and Error Handling

- All input fields must be filled before processing check-in or check-out.
- NIK and phone number must follow valid formats (numerical values only).
- Email field must contain a valid email format.

5. Navigation & Data Flow

- Seamless transitions between modules (Check-In, Check-Out, Room Management, Dashboard).
- Data consistency is maintained across modules (e.g., room availability updates reflected in all views).

CHAPTER C.

IMPLEMENTATION OF JAVA-BASED DATABASE APPLICATION

C.1. Overall Website



A screenshot of a web browser window displaying a login page. The page has a solid yellow background. In the center, the word "LOGIN" is written in large, bold, green capital letters. Below this, there are two input fields: "USERNAME" with the text "admin1" and "PASSWORD" with a masked password "*****". Below the input fields are two buttons: a pink "Close" button and a blue "Login" button.

Figure 1. Login Page

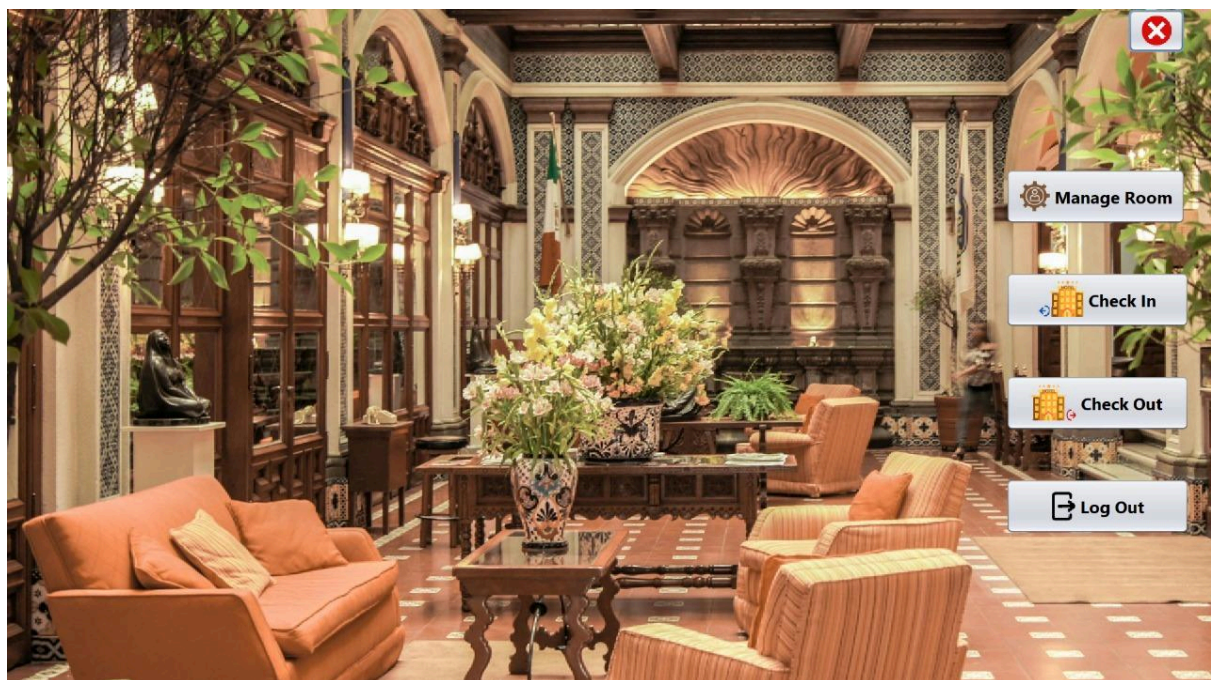


Figure 2. Dashboard


ROOM MANAGEMENT

Room Number :

Room Type :

Deluxe

Room Bed :

Single

Price :

Room Number	Type	Bed	Availability	Price
110	Deluxe	double	available	Rp. 550.000.-
111	Suite	single	booked	Rp. 550.000.-
112	Suite	double	booked	Rp. 600.000.-
113	Standard	single	available	Rp. 350.000.-
114	Standard	double	available	Rp. 400.000.-
115	Deluxe	single	available	Rp. 450.000.-
116	Deluxe	double	available	Rp. 500.000.-

Clear
Edit
Add Room

Delete
Back to Dashboard

Next

@anjelin.in

Figure 3. Manage Room Section


CHECK IN HOTEL

Customer Data

Name:

NIK:

Phone Number:

Email:

Room Booking

Check-In

Check-Out:

Room Type :

Suite

Room Bed :

single

Room Number:

117

TOTAL :

Rp. 4.950.000.-

Payment :

Unique Payment Card (UPC)


Back to Dashboard

Clear
Book Now

<
>

@anjelin.in

Figure 4. Check-in Section

 **CHECKOUT HOTEL**

Name <input type="text" value="anjelin"/>	Check In Date <input type="text" value="2025-06-01"/>	Checkout Date <input type="text" value="2025-06-10"/>
NIK <input type="text" value="00111111005"/>	Room Type <input type="text" value="Suite"/>	Bed Type <input type="text" value="single"/>
Mobile Phone <input type="text" value="082260272758"/>	Price Per Day <input type="text" value="Rp. 550.000,-"/>	Payment Method <input type="text" value="Unique Payment Card (UPC)"/>
Email <input type="text" value="aln@gmail.com"/>	Total Amount Rp. 4.950.000,-	

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Figure 5. Check-out Section

PULU-PULU HOTEL

Ababeka Education Park
Jl. Ki Hajar Dewantara, Kota Jababeka,
Cikarang Baru, Bekasi 17550, Indonesia

28 May 2025 | 06:13:37 PM

Dear anjelin,

Thank you for staying with us. We are pleased to provide you with the official bill for your recent stay at PULU-PULU HOTEL. Please find below your billing details:

Guest Information

Full Name : anjelin
NIK : 00111111005
Phone Number : 082260272758
Email Address : aln@gmail.com

Room Details

Room Number : 117
Room Type : Suite
Bed Type : single
Price/Night : Rp 550000
Price/Night : Rp 550.000.-
Check-in Date : 2025-06-01
Check-out Date : 2025-06-10
Total Charges : Rp 4.950.000.-

PAID

We sincerely hope you had a pleasant stay with us. Should you have any further inquiries, please do not hesitate to contact our front desk. We look forward to welcoming you again soon.

Best regards,

P2H
Owner

Figure 6. Receipt PDF Sample

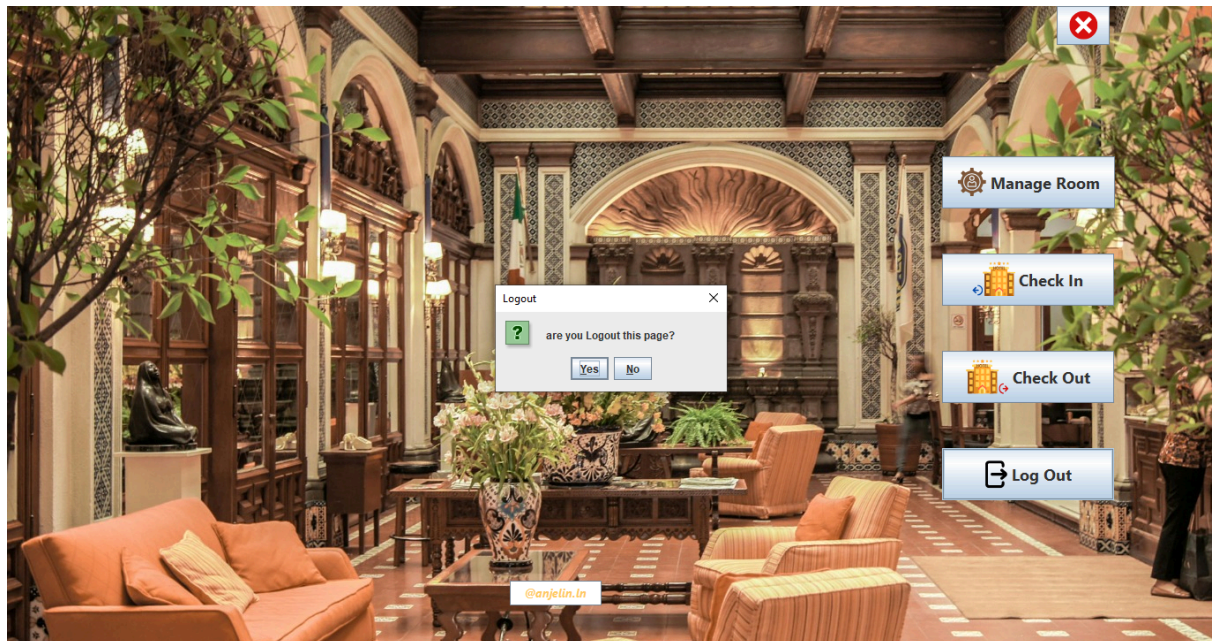


Figure 7. Logout