

AIRLINE RESERVATION SYSTEM



A PROJECT REPORT

Submitted by

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BONAFIDE CERTIFICATE

Certified that this project report on “**AIRLINE RESERVATION SYSTEM**” is the bonafide work of **MADESHWARAN C (8115U23AD032)** who carried out the project work during the academic year 2024 - 2025 under my supervision.

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INTERNAL EXAMINER

EXTERNAL EXAMINER

DECLARATION

I declare that the project report on “**AIRLINE RESERVATION SYSTEM**” is the result of original work done by us and best of our knowledge, similar work has not been submitted to “**ANNA UNIVERSITY CHENNAI**” for the requirement of Degree of **BACHELOR OF TECHNOLOGY**. This project report is submitted on the partial fulfilment of the requirement of the completion of the course **CGB1201 - JAVA PROGRAMMING**.

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MADESHWARAN C

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DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

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7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
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12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

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- **PSO1:** To develop optimized Data Science Solutions, through analysis, design, implementation, and evaluation to give technological solutions for real-time societal issues.
- **PSO2:** To employ advanced analytic platforms in creating innovative career paths to become best data scientists.

ABSTRACT

The Airline Reservation System helps airlines to manage ticket bookings. The airline staff can book tickets for the customer and the customer can view their tickets by logging into their account. This application aims to develop a basic interface for airline reservation that implements functionality like user management, login, verifying username and password, ticket booking, saving ticket information and viewing the tickets. With user verification and ability to save ticket across logins, the java application presents a simple system for airline reservation. After integrating a database for the tickets and implementing encrypted login, this application can also be developed as a web server for online bookings.

ABSTRACT WITH POs AND PSOs MAPPING

ABSTRACT	POs MAPPED	PSOs MAPPED
This application aims to develop a basic interface for airline reservation	PO 2	
Implements functionality like user management, login, verifying username and password, ticket booking, saving ticket information and viewing the tickets.	PO 3	PSO 1
Integrating a database for the tickets and implementing encrypted login.	PO 5	PSO 2
It can also be implemented as a web server.	PO 12	

Note: 1- Low, 2-Medium, 3- High

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LIST OF ABBREVIATIONS

ABBREVIATIONS	EXPANSION
IMS	Inventory Management System
UI	User Interface
DB	Database
CRUD	Create, Read, Update, Delete
ID	Identifier
GUI	Graphical User Interface

CHAPTER 1

INTRODUCTION

1.1 Objective

The goal is to design and develop a basic Airline Reservation System using Java, providing features such as ticket booking, user account management, and secure login functionality. The application is intended to offer a straightforward interface for airline staff to efficiently manage bookings while enabling customers to easily view their tickets. This system aims to simplify the reservation process for both administrators and users, ensuring a smooth and user-friendly experience.

1.2 Overview

This project uses Java and the Swing library to create a desktop application that offers a simple interface for airline staff and customers. The application enables users to log in, book tickets, and view booked tickets. Login credentials and ticket details are managed as class members within the program. The interface is designed with multiple pages using various Swing components, providing a clean and intuitive user experience.

The application supports navigation between pages, making it easy for users to move through different functionalities. A dedicated ticket page is available, accessible from both the airline staff and customer logins. This page dynamically updates whenever a ticket is booked by the airline staff, ensuring real-time synchronization of ticket information.

By leveraging Swing, the project delivers a functional and visually organized interface while maintaining simplicity in its design. The application is structured to handle basic airline reservation tasks efficiently, with a focus on usability and seamless interaction between different roles within the system. This project demonstrates a practical implementation of Java and Swing for building an interactive and purpose-driven application.

An Airline Reservation System (ARS) is a software solution used by airlines to manage flight bookings, ticketing, and related services. It enables customers and travel agents to search for flights, make reservations, and purchase tickets efficiently. The system allows users to search for flights based on destination, dates, and price, after which passengers can select seats, provide necessary details, and confirm bookings. It then generates electronic or paper tickets, and securely processes payments via integrated gateways. The ARS also provides real-time flight information, including schedules,

1.3 Java Programming Concepts

Basics of Object Oriented Programming:

Object-Oriented Programming (OOP) in Java is a programming paradigm that organizes software design around objects, rather than functions or logic. The core concepts of OOP in Java are:

- **Class:** A blueprint for creating objects. A class defines the properties (fields) and behaviors (methods) that its objects will have. For example, a Car class could define fields like color, model, and speed, and methods like accelerate() and brake().
- **Object:** An instance of a class. It is created based on the blueprint provided by the class. An object represents real-world entities, for example, a specific car like a "red Ferrari."
- **Encapsulation:** The technique of hiding the internal details of an object and only exposing necessary parts. This is typically achieved by using private fields and providing public getter and setter methods to access and modify the values.
- **Inheritance:** A mechanism by which one class can inherit the properties and behaviors of another. The extends keyword is used to create subclasses, enabling code reuse. For instance, a SportsCar class can inherit from the Car class.
- **Polymorphism:** The ability for a single method to perform different behaviors based on the object it is acting on. This can be achieved through method overriding and method overloading.
- **Abstraction:** Hiding complex implementation details and showing only the essential features. Abstract classes or interfaces are commonly used for abstraction.

Together, these concepts help in writing modular, reusable, and maintainable .

Inheritance and Polymorphism:

In this application, Java's principles of inheritance and polymorphism are utilized. Each page of the application is represented as a class that inherits from the JPanel class of the Swing library. This inheritance allows each page to have access to the features and functionalities of JPanel, such as layout management and event handling. The main class, which manages the overall functionality of the application, implements the ActionListener interface. This interface requires the implementation of the actionPerformed() method, which takes an ActionEvent as an argument. Through polymorphism, the actionPerformed() method can handle different button press events across the application, delegating actions based on which button was clicked. Inheritance and polymorphism are two fundamental concepts in object-oriented programming (OOP) that promote code reusability and flexibility. Inheritance allows one class (the subclass or child class) to inherit the properties and behaviors (methods) of another class (the superclass or parent class). This enables the subclass to reuse code from the parent class while adding or modifying its own specific features. For example, a class "Car" might inherit from a parent class "Vehicle," thus inheriting common attributes like "speed" and "engine type," while also defining additional features unique to cars, such as "air conditioning." Polymorphism, on the other hand, allows objects of different classes to be treated as objects of a common superclass, typically using methods with the same name but different implementations.

Class Variables and Static Variables:

Static variables play a significant role in storing the ticket details. These details are stored in static variables, meaning that they do not depend on an instance of the class. This makes the ticket details accessible globally, without needing to create objects of the class. The static nature of these variables ensures that the ticket data remains consistent throughout the application, regardless of the user session or page. Additionally, the textFields, buttons, and labels are instantiated as members of the JPanel class, which is essential for the user interface (UI) components.

Strings:

Strings are an integral part of the application. The username and password for logging into the system are hardcoded as strings. The equals() method is used to compare the entered username and password with the hardcoded values, ensuring that the correct credentials are used for authentication. Furthermore, strings are also employed to store and display ticket details. For example, the ticket information, such as the passenger's name, flight number, and seat number, is managed as strings for easy retrieval and display on the user interface.

Switch-Case Statements:

Switch-case statements are used to handle the button press events across the application. When a user interacts with any button, the event is passed to the actionPerformed() method, where a switch-case structure is used to differentiate between the various buttons. Each case corresponds to a specific action, such as navigating to a different page or booking a ticket. This approach helps in simplifying event handling, making the code more organized and efficient. It also provides an easy way to switch between pages and perform different actions based on user input.

Swing Library:

The Swing library in Java is extensively used in this application to develop the graphical user interface (GUI). Several components from the Swing library are employed to create the window and layout of the application.

- **JFrame:** The JFrame represents the main window of the Swing application. It serves as the container for the entire user interface. The title of the window can be set using the setTitle() method, allowing the application to display a relevant title, such as "Airline Reservation System." The add() method is used to add a panel to the JFrame, which houses the actual content of each page.
- **JPanel:** Each page in the application is implemented as a subclass of JPanel. The JPanel class serves as a container for components, such as buttons, labels, and text fields. The add() method is used to add these components to the panel. By extending JPanel, each page gains access to the functionality of this container, making it easier to organize and manage the layout of UI components.
- **JButton:** The JButton class defines the buttons used in the application. Each button has a label or text displayed on it, such as "Login" or "Book Ticket." To make the buttons interactive, the addActionListener() method is used to link each button to an action listener. This method ensures that when a button is clicked, the associated action is triggered, such as navigating to the login page or processing a ticket booking.
- **JLabel:** The JLabel is used to display text in the application. This can include informative messages, instructions, or error notifications. The setText() method is used to update the text displayed by the label. For example, the "Invalid username or password" message is shown using a JLabel, and its text can be dynamically changed based on user input or system responses.
- **TextField:** JTextField is used for inputting text, such as entering the username, password, or ticket details. The getText() method is used to retrieve the string entered by the user, which is then processed for authentication or displayed in the ticket details section.

- **BoxLayout:** The `BoxLayout` class is utilized to align components either horizontally or vertically. This layout manager helps in organizing the UI components efficiently, ensuring that elements such as buttons, labels, and text fields are neatly arranged

CHAPTER 2

PROJECT METHODOLOGY

2.1 Proposed Work

This project focuses on implementing basic login functionality for an Airline Reservation Application. The system allows both airline staff and customers to log in using their respective credentials. Once logged in, users gain access to the ticket details relevant to their role. Essential ticket information, such as passenger name, flight details, and seat number, is stored and displayed through a user-friendly interface.

Airline staff have the capability to book tickets by entering the necessary details into the system. This data is then saved and reflected on the tickets page, ensuring that all ticket-related information is up-to-date and accessible. Customers can subsequently log in to the application, navigate to the tickets page, and verify their ticket information with ease.

The project leverages a straightforward interface to facilitate seamless interaction between the airline staff and customer functionalities. By enabling efficient booking and retrieval of ticket details, the application demonstrates a functional approach to managing basic airline reservation tasks. This system highlights the integration of user-specific features, ensuring that both airline staff and customers can effectively perform their respective operations within the application.

2.2 Block Diagram

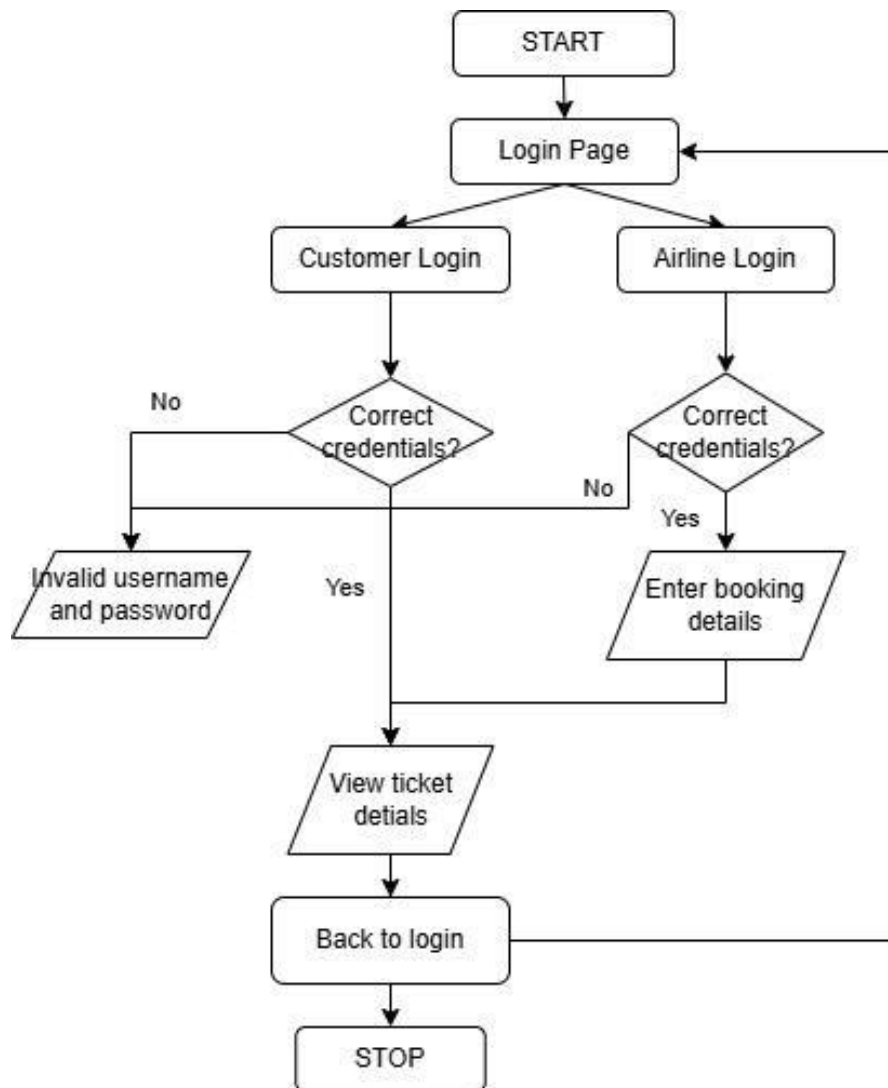


Fig 2.2.1 Block Diagram For ARS

CHAPTER 3

MODULE DESCRIPTION

3.1 Module 1 LoginType

This module implements the first page of the Airline Reservation Application, serving as the entry point for users. It inherits from the JPanel class and provides an intuitive interface for users to choose between two login options: Airline login and Customer login. The page offers clear options for both airline staff and customers to proceed based on their role. When the user selects "Airline login," the system directs them to the Airline login page, where they can enter their credentials. Alternatively, if the user clicks "Customer login," they are taken to the customer login page to input their details. The page is designed to ensure smooth navigation between these two login options, providing a straightforward and user-friendly experience. By presenting these two choices, the module ensures that users can easily access the appropriate login page, whether they are airline staff or customers. The use of JPanel allows for a clean layout and seamless integration of the login options. This module sets the foundation for the application's functionality by enabling the user to quickly identify their role and proceed with the relevant login process.

3.2 Module 2 – LoginPage

This module implements the login page of the Airline Reservation Application, allowing users to enter their username and password to gain access. Upon submission, the system verifies the provided credentials to determine if they are correct. If the entered username and password match the stored credentials, the user is granted access to the system. However, if the credentials are incorrect, the application displays an error message stating, "Invalid username and password," notifying the user of the mismatch. The verification process is carried out through a simple string comparison, where the input values for the username and password are compared against pre-defined valid credentials. If

the entered data does not match the stored information, the system responds by indicating an authentication failure. This straightforward approach ensures that only users with the correct credentials can access the system, maintaining security for both airline staff and customers.

By using basic string comparison for validation, this module provides a simple yet effective method for managing user authentication. It is designed to offer clear feedback to users in case of incorrect login attempts, improving the overall user experience while ensuring a secure login process. This module is a key component of the application's authentication system.

3.3 Module 3 – Booking

This module is responsible for implementing the ticket booking functionality within the Airline Reservation Application. It is designed to be accessible exclusively to airline staff, who can enter the necessary details for booking tickets. The staff is required to input information such as the passenger's name, flight number, and seat number. Once the airline staff enters this data and confirms the booking, the details of the booked ticket are saved and displayed on the Ticket page.

After successfully booking the ticket, the system automatically redirects the airline staff to the Ticket page, where they can verify the details of the ticket they just booked. This ensures that the staff can review and confirm the ticket information, including the passenger's name, flight, and seat number, before finalizing the process.

The ticket booking functionality is a crucial part of the system, allowing airline staff to efficiently manage reservations. By storing the ticket details on the Ticket page, the application ensures that all information is readily available and easily accessible for verification. This module helps streamline the booking process, providing both security and efficiency while ensuring that customers' ticket details are correctly recorded and displayed for verification.

3.4 Module 4 – Ticket

This module represents the Ticket page of the Airline Reservation Application, which is accessible to both the airline staff and the customer. It displays essential ticket details, including the passenger's name, flight number, and seat number. If no ticket has been booked, the page shows a message stating, "Tickets not booked," indicating that no reservation has been made yet.

The Ticket page also includes a button that allows the user to navigate back to the login page. Importantly, the Ticket page is not destroyed when the user logs out, ensuring that the data remains intact. When the user logs in again, the previously displayed ticket details are restored, providing a seamless experience for the user.

This design enhances the convenience of ticket booking and airline management by allowing users to easily verify their ticket information after logging in. For airline staff, it simplifies the process of managing bookings, while customers can quickly access their ticket details. The persistent nature of the Ticket page ensures that users don't lose their ticket information, making it easier for both customers and staff to track and manage bookings efficiently. This functionality contributes to a smoother, more user-friendly experience for all parties involved.

3.5 Module 5 – AirlineReservation

This is the main class of the Airline Reservation Application, responsible for implementing the ActionListener interface to handle all button clicks. The class acts as the central controller, delegating tasks to other classes and managing the flow of the application. It initializes the window and manages user interface interactions using Swing components, ensuring smooth navigation between different parts of the application.

The main class serves as the core of the program, maintaining instances of all the pages, including the login, booking, and ticket pages. By overriding the `actionPerformed()` method of the `ActionListener` interface, it listens for and processes button click events, triggering the appropriate actions for each event, such as transitioning between pages or performing operations like ticket booking.

As the entry point of the application, this class contains the `main()` function, which starts the execution of the program. This function is responsible for setting up the application window and launching the user interface. The main class plays a vital role in coordinating the various modules, ensuring the proper functioning of the entire system. It provides the necessary structure for interaction, effectively managing user actions and providing a seamless experience for both airline staff and customers.

Cancellation and Refund Module:

This module allows customers to cancel bookings and request refunds, adhering to the airline's policies. It ensures that the system reflects the changes in the flight schedule and seat availability, as well as processes any applicable refund amounts.

Reporting and Analytics Module:

Airlines use this module for generating reports on bookings, revenue, flight performance, customer preferences, and other key metrics. It helps in decision-making, pricing strategies, and monitoring the overall performance of the reservation

Admin and Airline Management Module:

This module is used by airline staff and administrators to manage flight schedules, ticket prices, promotions, and other operational tasks. It also allows for monitoring customer feedback, handling customer service issues, and managing the system's configuration.

Customer Support and Service Module:

This module enables customer service representatives to assist customers with inquiries, bookings, changes, cancellations, or special requests. It can include live chat, phone support, and automated helpdesk features.

Customer Profile Management Module:

This module stores customer details such as name, contact information, booking history, preferences, and loyalty program data. It allows users to access and update their profiles, including adding frequent flyer numbers, meal preferences, or special requests.

Inventory Management Module:

The inventory management module tracks seat availability for various flight routes, class categories (economy, business, first class), and ticket types (one-way, round-trip, multi-city). It ensures that the seat allocation is updated in real-time as bookings are made and cancellations occur.

CHAPTER 4

CONCLUSION & FUTURE SCOPE

4.1 CONCLUSION

This application enables both the airlines and the customer to book tickets seamlessly. It manages login credentials, ticket details and helps them to manage ticket booking using a desktop interface. The Airline Reservation System provides a foundational framework for managing airline ticket bookings and user accounts. By implementing features such as secure login, ticket booking, and ticket viewing, the application addresses essential requirements for an efficient reservation process. Als With future enhancements like database integration and encryption for user data, the system can achieve higher reliability and security. Furthermore, transitioning to a web-based platform can expand its usability, enabling seamless online bookings and scalability to meet the demands of modern airline services. This project demonstrates a practical approach to building a robust reservation system while offering potential for further development.

4.2 FUTURE SCOPE

The future scope of the Airline Reservation System includes integrating a robust database for persistent storage, enabling real-time flight availability, and expanding it into a web-based application for online booking. Enhanced security features like advanced encryption and two-factor authentication can be implemented. By the insten Additionally, payment gateway integration, mobile app development, and advanced features like customer feedback systems and dynamic pricing can be added. The system can also be expanded to support internationalization, allowing for multiple languages and currencies. These enhancements will improve user experience, scalability, and security, transforming the system into a comprehensive solution for modern airline reservations.

APPENDIX A

(SOURCE CODE)

```
import java.awt.*;
import java.awt.event.ActionEvent; import
java.awt.event.ActionListener; import
javax.swing.*;
import javax.swing.border.EmptyBorder;

class LoginType extends JPanel {
    BoxLayout boxlayout = new BoxLayout(this, BoxLayout.Y_AXIS); JButton
customer_login = new JButton("Customer Login"); JButton airline_login =
new JButton("Airline Login"); LoginType() {
    this.customer_login.setAlignmentX(CENTER_ALIGNMENT);
    this.airline_login.setAlignmentX(CENTER_ALIGNMENT);
    this.setLayout(boxlayout);
    this.setBorder(new EmptyBorder(new Insets(100, 150, 100,
150)));
    this.add(customer_login);
    this.add(airline_login);
}
}

class LoginPage extends JPanel { static String
login_type = "";
    BoxLayout boxlayout = new BoxLayout(this, BoxLayout.Y_AXIS); JTextField
user_name = new JTextField(16);
    JTextField password = new JTextField(16); JButton
login_button = new JButton("Login");
    JLabel label = new JLabel("Enter "+login_type+" Login"); LoginPage() {
    this.user_name.setAlignmentX(CENTER_ALIGNMENT);
    this.password.setAlignmentX(CENTER_ALIGNMENT);
    this.login_button.setAlignmentX(CENTER_ALIGNMENT);
    this.label.setAlignmentX(CENTER_ALIGNMENT);
    this.setLayout(boxlayout);
    this.setBorder(new EmptyBorder(new Insets(100, 150, 100,
150)));
    this.add(user_name);
    this.add(password);
    this.add(login_button);
    this.add(label);
}
```

```
}
```

```
class Booking extends JPanel {  
    BoxLayout boxlayout = new BoxLayout(this, BoxLayout.Y_AXIS); JLabel l1 =  
    new JLabel("Name");  
    JTextField name = new JTextField(16); JLabel l2 =  
    new JLabel("Flight"); JTextField flight = new  
    JTextField(16); JLabel l3 = new JLabel("Seat No");  
    JTextField seat_no = new JTextField(16);  
    JButton booking_button = new JButton("Book Tickets"); JButton  
    view_tickets = new JButton("View Ticket"); Booking() {  
        this.l1.setAlignmentX(LEFT_ALIGNMENT);  
        this.name.setAlignmentX(CENTER_ALIGNMENT);  
        this.l2.setAlignmentX(LEFT_ALIGNMENT);  
        this.flight.setAlignmentX(CENTER_ALIGNMENT);  
        this.l3.setAlignmentX(LEFT_ALIGNMENT);  
        this.seat_no.setAlignmentX(CENTER_ALIGNMENT);  
        this.booking_button.setAlignmentX(CENTER_ALIGNMENT);  
        this.view_tickets.setAlignmentX(CENTER_ALIGNMENT);  
        this.setLayout(boxlayout);  
        this.setBorder(new EmptyBorder(new Insets(100, 150, 100,  
150)));  
        this.add(l1); this.add(name);  
        this.add(l2); this.add(flight);  
        this.add(l3); this.add(seat_no);  
        this.add(booking_button);  
        this.add(view_tickets);  
    }  
}
```

```
class Ticket extends JPanel {  
    BoxLayout boxlayout = new BoxLayout(this, BoxLayout.Y_AXIS); static  
    boolean tickets_booked = false;  
    static String name; static String  
    flight; static String seat_no;  
    JLabel n = new JLabel();  
    JLabel f = new JLabel(); JLabel  
    s = new JLabel(); JLabel l =  
    new JLabel();  
    JButton home = new JButton("Back to login");
```

```

        void update_ticket() { this.setLayout(boxlayout);
            this.setBorder(new EmptyBorder(new Insets(100, 150, 100,
150)));
            if(tickets_booked==false) { l.setText("Tickets not
                booked");
                l.setAlignmentX(CENTER_ALIGNMENT);
                home.setAlignmentX(CENTER_ALIGNMENT);
                this.add(l);
                this.add(home);
            }
            else if (tickets_booked==true)
                { n.setText(name); f.setText(flight);
                s.setText(seat_no); l.setText("Tickets
                Booked");
                n.setAlignmentX(CENTER_ALIGNMENT);
                f.setAlignmentX(CENTER_ALIGNMENT);
                s.setAlignmentX(CENTER_ALIGNMENT);
                l.setAlignmentX(CENTER_ALIGNMENT);
                home.setAlignmentX(CENTER_ALIGNMENT);
                this.add(n);
                this.add(f);
                this.add(s);
                this.add(l); this.add(home);
            }
        }
    }
}

public class AirlineReservation implements ActionListener { static JFrame
    frame;
    static LoginType lt; static
    LoginPage lp; static
    Booking bk;
    static Ticket tk = new Ticket(); static
    AirlineReservation main_class;
    public static void main(String[] args) { try {

        UIManager.setLookAndFeel(UIManager.getSystemLookAndFeelClassName());
    }

    catch(Exception e) { System.out.println("Invalid
        Platform.");
    }
    main_class = new AirlineReservation(); frame = new

```

```

JFrame("AirlineReservation");
frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE); lt =
new LoginType(); lt.customer_login.addActionListener(main_class);
lt.airline_login.addActionListener(main_class);
tk.home.addActionListener(main_class); tk.update_ticket();
frame.add(lt); frame.pack();
frame.setVisible(true);
}
@Override
public void actionPerformed(ActionEvent e) { String s =
    e.getActionCommand();
    switch (s) {
        case "Customer Login": lp.login_type =
            "customer"; lp = new LoginPage();
            lp.login_button.addActionListener(this); frame.remove(lt);
            frame.add(lp);
            frame.pack(); break;
        case "Airline Login": lp.login_type =
            "airline"; lp = new LoginPage();
            lp.login_button.addActionListener(this); frame.remove(lt);
            frame.add(lp);
            frame.pack(); break;
        case "Login":
            String un = lp.user_name.getText(); String pw =
            lp.password.getText();

            if(lp.login_type.equals("customer")&&un.equals("passenger")&&pw.equals("123")){
                tk.update_ticket();
                frame.remove(lp); frame.add(tk);
                frame.pack();
            }

            if(lp.login_type.equals("airline")&&un.equals("staff")&&pw.equals("123")){
                bk = new Booking();

```

```

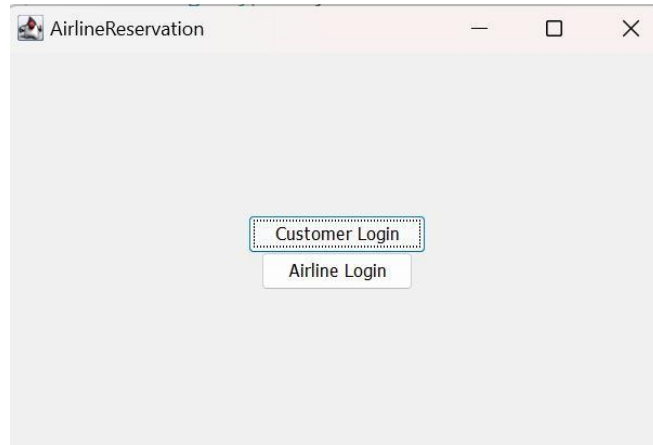
        bk.booking_button.addActionListener(this);
        bk.view_tickets.addActionListener(this); frame.remove(lp);
        frame.add(bk);
        frame.pack();
    }
    else {
        lp.label.setText("Invalid Username and
Password.");
    } break;
case "Book Tickets": tk.tickets_booked =
    true;
    tk.name = "Name: "+bk.name.getText(); tk.flight =
    "Flight: "+bk.flight.getText(); tk.seat_no = "Seat No:
    "+bk.seat_no.getText(); tk.update_ticket();
    frame.remove(bk);
    frame.add(tk);
    frame.pack(); break;
case "Back to login":
    frame.remove(tk);
    frame.add(lt);
    frame.pack(); break;
case "View Ticket":
    tk.update_ticket();
    frame.remove(bk);
    frame.add(tk);
    frame.pack(); break;
default:
    break;
}
}
}

```

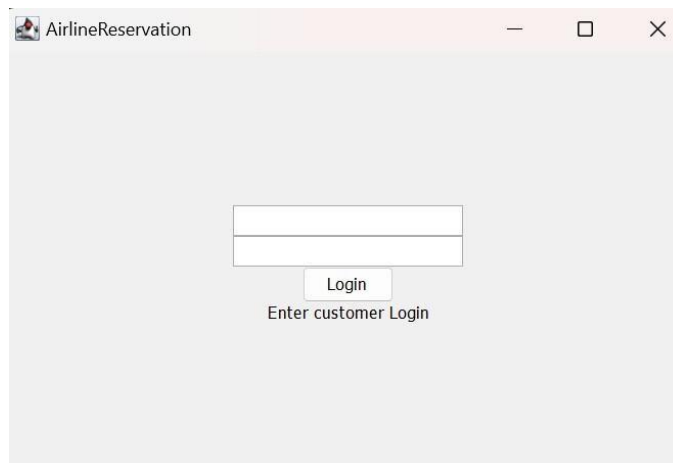

APPENDIX B

(SCREENSHOTS)

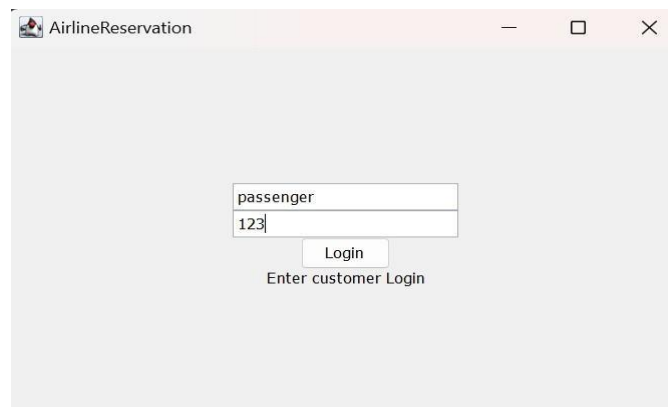
Starting window to choose between Customer Login and Airline Login:



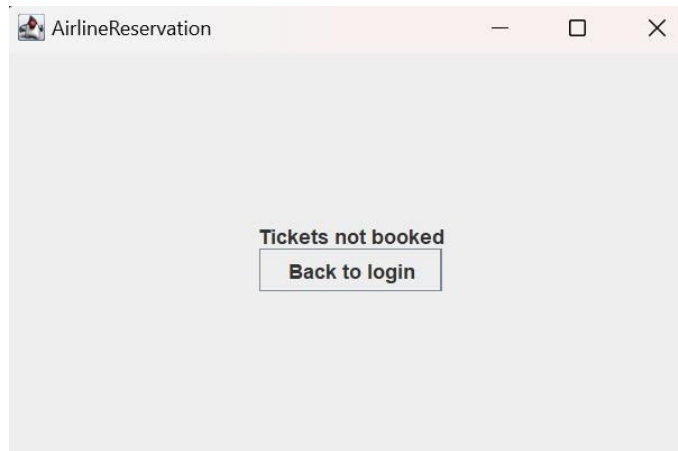
Customer Login:



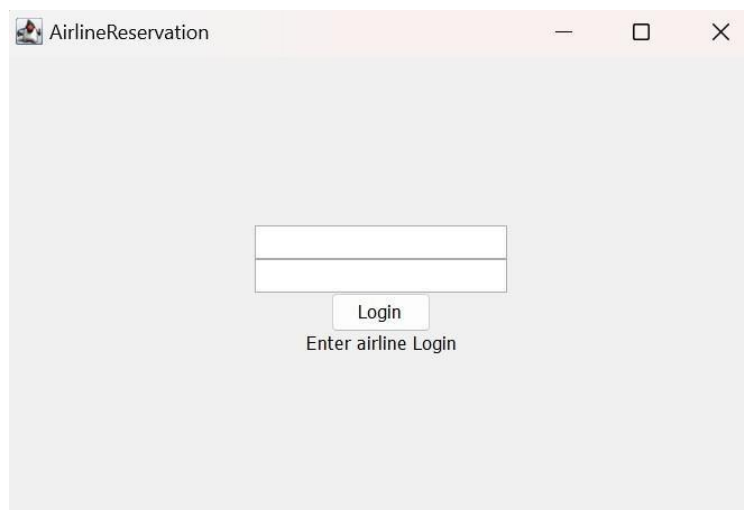
Correct credentials:



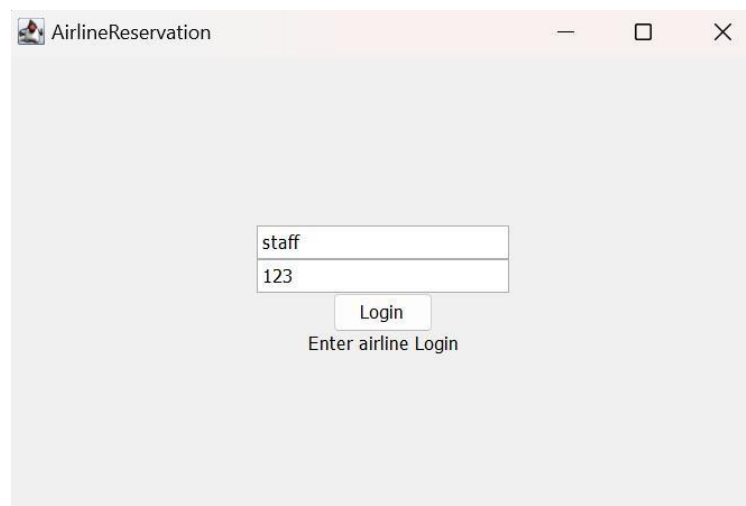
Ticket window without tickets:



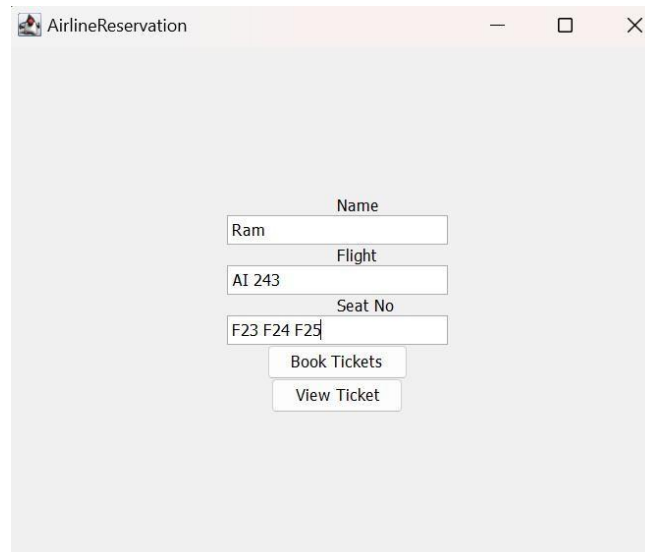
Back to login displays the starting window:



Correct credentials:



Booking page with booking for 3 seats:



A screenshot of a web application window titled "AirlineReservation". The window contains a booking form with the following fields and values:

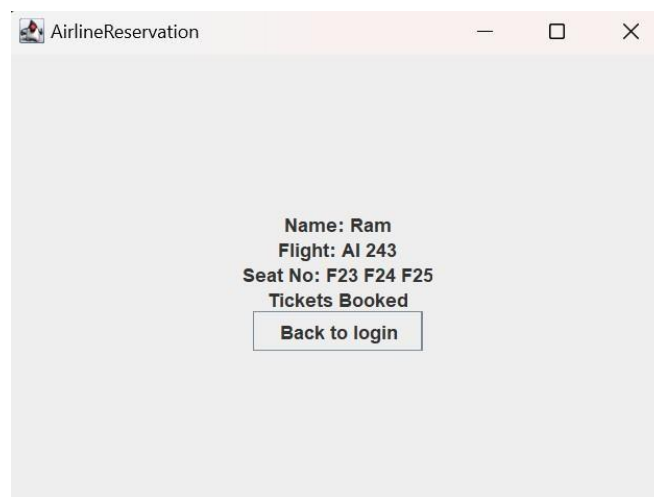
Name
Ram

Flight
AI 243

Seat No
F23 F24 F25

Below the form are two buttons: "Book Tickets" and "View Ticket".

Ticket page after booking:

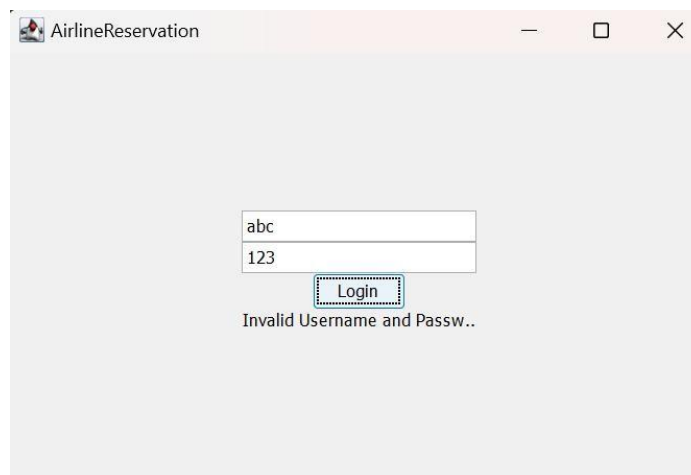


A screenshot of the "AirlineReservation" window after a successful booking. The confirmation details are displayed as follows:

Name: Ram
Flight: AI 243
Seat No: F23 F24 F25
Tickets Booked

Below the details is a button labeled "Back to login".

Incorrect credentials:



A screenshot of the "AirlineReservation" window showing a login attempt with incorrect credentials. The input fields contain "abc" for the username and "123" for the password. A "Login" button is highlighted with a dashed border. Below the button, an error message reads: "Invalid Username and Passw..".

REFERENCES:

1. Somerville, I. (2011). "Software Engineering" (9th ed.).

This textbook offers a detailed overview of software engineering principles and applies them to the design and implementation of systems, including airline reservation systems. It explores system development methodologies, including those used in complex applications like airline booking systems.

2. Sivakumar, S., & Ramesh, S. (2013). "Airline Reservation System using Cloud Computing." In this research paper, the authors explore how cloud computing can be utilized to improve the functionality, scalability, and efficiency of airline reservation systems. The paper discusses the architecture and advantages of using cloud services for handling large-scale data and providing real-time updates in such systems.

3. Griffiths, R., & Griffiths, D. (2008). "A Guide to Computer-based Airline Reservation Systems." This guide offers an in-depth look into the inner workings of airline reservation systems. It explores both the technical and business aspects, detailing how airline reservation systems evolved and what current systems include.

4. Chakrabarti, A., & Roy, P. (2017). "Design and Implementation of an Airline Reservation System." This paper focuses on the process of designing and implementing a basic airline reservation system. It explains the architecture, design principles, and features such as booking, cancellations, and seat selection, offering a practical approach for building reservation systems.

5. Rathod, R., & Jadhav, P. (2015). "Study of Airline Reservation System Architecture." This study covers various types of reservation systems, including online and offline models.