Menoufia University
Faculty of Electronic Engineering
Computer Science and Engineering

Advanced Programming Languages

The Project: Airline reservation system

Team Members:

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Dr Ahmed Ghozia

Airline Reservation System Documentation

Project Idea:

The Airline Reservation System is a Java-based application with a JavaFX GUI that leverages Object-Oriented Programming (OOP) principles. The system is designed to cater to the needs of receptionists in airports, allowing them to manage various aspects of airline operations efficiently. The primary functionalities include user authentication, airport management, aircraft handling, flight management, reservation handling, ticket viewing, and system statistics.

Problem Description:

The airline industry involves complex operations, and managing reservations, flights, and airport details manually can be error-prone and time-consuming. Receptionists often face challenges in keeping track of flights, reservations, and aircraft details. This system aims to streamline these processes, reducing errors and improving efficiency. By incorporating OOP principles, the system ensures a modular and extensible design, making it easy to adapt to evolving airline requirements.

Explanation of the System:

1. User Authentication

Feature:

Login and Registration: Users can log in with their credentials or register for a new account.

Purpose:

Ensures secure access to the system, allowing only authorized personnel to perform various tasks.

2. Airport Management

Features:

Add and View Airports: Receptionists can add new airports to the system and view existing airport details.

Purpose:

Facilitates the addition and retrieval of airport information, ensuring accurate and up-to-date data.

3. Aircraft Handling

Features:

Add and View Aircrafts: Enables the addition of new aircraft details and provides a way to view existing aircraft information.

Purpose:

Allows receptionists to maintain an organized database of aircraft, aiding in flight scheduling and management.

4. Flight Management

Features:

Add and View Flights: Receptionists can add new flights, specifying details like departure and arrival times, airports, and aircraft.

Purpose:

Streamlines the process of flight scheduling and provides a comprehensive overview of the flight schedule.

5. Reservation Handling

Features:

Add and View Reservations: Receptionists can add new reservations for passengers and view existing reservation details.

Purpose:

Manages passenger reservations efficiently, ensuring accurate records and easy retrieval.

6. Ticket Viewing

Feature:

View Tickets: Allows receptionists to view tickets associated with reservations.

Purpose:

Provides a quick reference to the details of booked flights and reservations.

7. System Statistics

Features:

Generate System Statistics: Enables the generation of statistics such as the number of flights, reservations, and other relevant metrics.

Purpose:

Offers insights into the overall performance and utilization of the airline reservation system.

We didn't allocate specific tasks to each team member; instead, we collaboratively worked together on every aspect of the project simultaneously.

Project Design: