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PROJECT

Airline

Management System

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**1. Introduction**

The Airline Management System is a software application developed to automate and manage various processes within an airline. It provides users with an interactive menu-driven interface to carry out tasks such as signing up, logging in, viewing flight details, booking flights, managing account information, and accessing customer support. The system simplifies the airline’s operations by allowing users to easily search for flights, make bookings, and view their accounts through a command-line interface.

The project is implemented using C++, leveraging basic programming concepts like functions, loops, and control structures. The core functionalities include user registration and login for personalized access, flight search based on user preferences, and a booking system that ensures a seamless experience. The system also incorporates a helpline feature for users seeking assistance. This project provides a foundation for building more advanced systems by integrating additional features like payment gateways, databases, and graphical interfaces in the future.

In essence, the Airline Management System aims to reduce manual intervention, enhance operational efficiency, and improve the overall user experience in managing airline-related tasks.

**2. Objective**

The primary objectives of this project are as follows:

* **User Registration and Login:** To enable users to register and log in to their accounts for personalized access to flight-related services.
* **Flight Search and Booking:** To allow users to search for available flights based on their preferences and book flights online.
* **Account Management:** To provide users with the ability to view and manage their account details, such as personal information and booking history.
* **Helpline and Assistance:** To offer a helpline feature for users to get assistance in case of issues or queries.
* **System Interaction:** To create a smooth and intuitive interaction between the user and the system through the command line interface.

By implementing these features, the project aims to improve the user experience and reduce manual intervention in airline operations.

## 3. Methodology

The development of the Airline Management System follows a structured and modular approach. The following key components were used in the development:

* **Programming Language:** The system is implemented in C++, which is known for its efficiency and object-oriented programming capabilities.
* **User Interface:** The user interface is based on the command-line, where users input their choices from a menu system. The system processes these inputs and executes the relevant functions.
* **Modular Design:** The program is designed using functions to handle different operations. Each operation (e.g., signing up, logging in, viewing flights) is encapsulated within a function, making the code easy to manage and extend.
* **Control Structures:** A menu-driven interface is used with a switch statement to direct the user to the appropriate functionality based on their input.
* **Looping and Input Validation:** A do-while loop is employed to continuously display the menu until the user chooses to exit (choice 8). Input validation is done to ensure that the user enters valid choices, providing a robust user experience.

### Key Functions:

* **signUp()** – Handles user registration.
* **login()** – Manages user login.
* **viewFlights()** – Displays available flights.
* **searchFlights()** – Allows users to search for flights based on their criteria.
* **bookFlight()** – Facilitates flight booking.
* **accountDetails()** – Displays user account information.
* **helpline()** – Provides support information to users.

Each function is invoked through the switch statement in the main menu loop, ensuring that users can navigate through the system efficiently.

## 4. Future Work

While the current system is functional, there are several improvements and features that could be implemented to make it more advanced and user-friendly:

* **Graphical User Interface (GUI):** Moving from a command-line interface to a GUI would improve user experience significantly by offering a more intuitive and visually appealing interface.
* **Database Integration:** The system could be integrated with a backend database to store user data, flight schedules, and booking information, making it possible to maintain persistent data between sessions.
* **Payment Gateway Integration:** Adding a payment gateway for online payment processing would enable users to complete flight bookings with payment.
* **Flight Cancellation and Modification:** The system could allow users to cancel or modify their bookings, which is a critical feature for a real-world application.
* **Multi-Language Support:** Implementing multi-language support would broaden the accessibility of the system for non-English speaking users.

## 5. Conclusion

The Airline Management System provides a practical and effective solution for managing the core functionalities of an airline. It covers user registration, login, flight search, booking, and account management in a simple and modular way. This project demonstrates the application of basic programming concepts such as functions, loops, and control structures in solving real-world problems.

While the current version of the system is functional, there is ample room for future improvements, including the integration of databases, payment systems, and enhanced user interfaces. The system lays the foundation for a more complex airline management solution, capable of supporting a wide range of airline operations in the future.

## 6. Reference

Inspired from : https://youtu.be/KVM6isw\_-wk?si=1svVpHBZQ8UMlzqK