Project

Title: Airport Management system

Subject: Programming Fundamental

Semester:01

Department: BS Cyber Security

Ifza Rizwan
SAPID: 64281

Project Report

Project Title: Airport Management System

Developed By: Ifza Rizwan

Language: C++

Date: December 2024

Purpose: Console-based system for flight and ticket management

1. Introduction

The Airport Management System is a console-based project developed in C++ that simulates the operations of a small airport management scenario. This system helps to manage flights and passengers, book, update, and cancel tickets, and maintain input validation to prevent errors and crashes. It demonstrates the use of structures, arrays, loops, and safe user input handling.

2. Objectives

- Implement a functional flight management system.
- Allow users to view available flights and passenger seat availability.
- Enable ticket booking with validation to ensure correct date and destination.
- Provide options to update or cancel tickets.
- Handle invalid inputs gracefully without crashing.

3. Features

3.1 Flight Management

- Fixed monthly flight schedule.
- Displays flights with destination and date.
- Ensures that ticket booking only uses these flights.

3.2 Passenger Management

- Shows total seats per flight.
- Divides seats into Business Class and Normal Class.
- Provides information about available seats.

3.3 Ticket Booking

- Users can book a ticket by entering Ticket ID (numeric), Passenger Name, Destination (must match available flights), Departure Date (must match flight schedule).
- System validates input and displays an error if flight unavailable.

3.4 View, Update, and Cancel Ticket

- View all booked tickets with full details.
- Update ticket information (validated against flight schedule).
- Cancel tickets easily.

3.5 Input Validation

- Ensures numeric input for Ticket ID.
- Ensures date format is dd/mm/yyyy.
- Prevents booking invalid flights or dates.

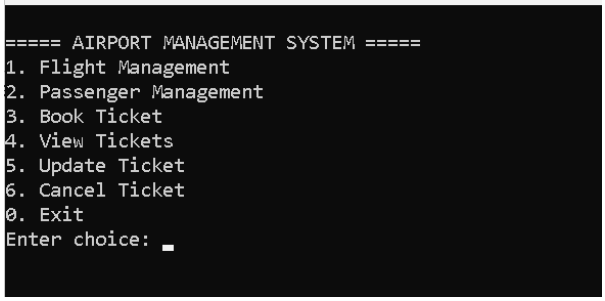
4. System Architecture

- Programming Language: C++
- Data Structure Used: Struct for Ticket
- Array: Fixed-size array to store up to 50 tickets
- Functions: flightManagement(), passengerManagement(), bookTicket(), viewTickets(), updateTicket(), deleteTicket()

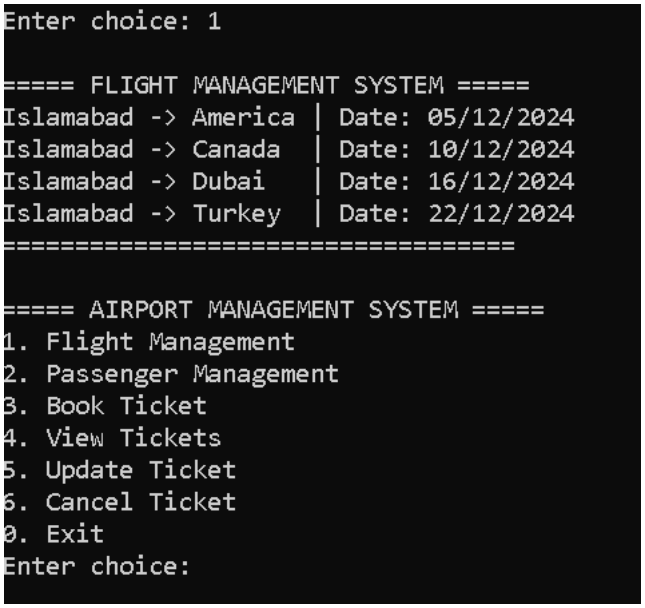
5. screen shots of working of code on dev c++

Airport management system

Enter a option to proceed



Here I choose 1 option:



Second choice:

```
Enter choice: 2

===== PASSENGER MANAGEMENT =====
Total Seats: 200 per flight
Business Class: 70 seats available
Normal Class: 55 seats available
==============================

===== AIRPORT MANAGEMENT SYSTEM =====
1. Flight Management
2. Passenger Management
3. Book Ticket
4. View Tickets
5. Update Ticket
6. Cancel Ticket
0. Exit
Enter choice:
```

Let's book a ticket from the given flight schedule

```
Enter choice: 3

===== TICKET BOOKING =====
NOTE: Choose destination & date from Flight Management only.
Enter Ticket ID (numbers only): 130
Enter Passenger Name: Ali Ahmad
Enter Destination (America / Canada / Dubai / Turkey): Turkey
Enter Departure Date (dd/mm/yyyy): 22/12/2024

? Ticket booked successfully!

===== AIRPORT MANAGEMENT SYSTEM =====
1. Flight Management
2. Passenger Management
3. Book Ticket
4. View Tickets
5. Update Ticket
6. Cancel Ticket
0. Exit
Enter choice:
```

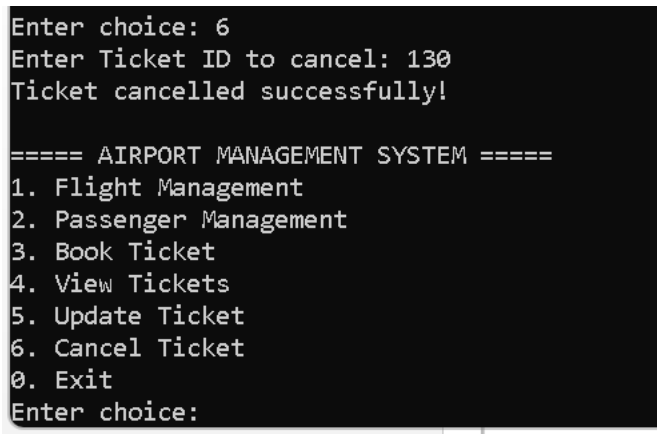
Now view the ticket that you book:

```
Enter choice: 4

===== BOOKED TICKETS =====
Ticket ID   : 130
Passenger   : Ali Ahmad
Destination : Turkey
Date        : 22/12/2024
--------------------------

===== AIRPORT MANAGEMENT SYSTEM =====
1. Flight Management
2. Passenger Management
3. Book Ticket
4. View Tickets
5. Update Ticket
6. Cancel Ticket
0. Exit
Enter choice:
```

Now delete the ticket:



This is the practical working of project.

THE END