

Code-

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#include <iostream>

using namespace std;

struct Passenger {

    string name;

    int age;

};

struct Node {

    Passenger passenger;

    Node* next;

};

struct Queue {

    Node* front;

    Node* rear;

    int size;

    Queue() {

        front = nullptr;

        rear = nullptr;

        size = 0;

    }

    void enqueue(const string& name, int age) {

        Node* newNode = new Node;

        newNode->passenger.name = name;
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newNode->passenger.age = age;
newNode->next = nullptr;
if (isEmpty()) {
    front = newNode;
    rear = newNode;
} else {

    rear->next = newNode;
    rear = newNode;
}
size++;
}

void dequeue() {
    if (!isEmpty()) {
        Node* temp = front;
        front = front->next;
        delete temp;
        size--;
        if (isEmpty()) {
            rear = nullptr;
        }
    }
}

bool isEmpty() {
    return size == 0;
```

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    }

    void clear() {
        while (!isEmpty()) {
            dequeue();
        }
    };

    struct Stack {
        Node* top;

        int size;

        Stack() {
            top = nullptr;

            size = 0;
        }

        void push(const string& name, int age) {
            Node* newNode = new Node;

            newNode->passenger.name = name;

            newNode->passenger.age = age;

            newNode->next = top;

            top = newNode;

            size++;
        }

        void pop() {
            if (!isEmpty()) {
                Node* temp = top;

                top = top->next;

                delete temp;
            }
        }
    };

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        size--;

    }}

bool isEmpty() {

    return size == 0;

}

void clear() {

    while (!isEmpty()) {

        pop();

    }

}

};

struct Flight {

    int flightNumber;

    string origin;

    string destination;

    string departureTime;

    string arrivalTime;

    int capacity;

    int bookedSeats;

    Queue waitingList; // Using queue to manage waiting list

    Stack cancellationStack; // Using stack to manage cancellations

};

void initializeFlight(Flight& flight) {

    cout << "Enter Origin: "; cin >> flight.origin;

    cout << "Enter Destination: "; cin >> flight.destination;

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    cout << "Enter Departure Time: "; cin >> flight.departureTime;

    cout << "Enter Arrival Time: "; cin >> flight.arrivalTime;

    cout << "Enter Capacity: "; cin >> flight.capacity;

    flight.bookedSeats = 0;
}

void addPassenger(Flight& flight, const string& name, int age) {
    if (flight.bookedSeats < flight.capacity) {
        flight.bookedSeats++;

        cout << "*****" << endl;

        cout << "Seat booked successfully!" << endl;

        cout << "Flight number - 69" << endl;

        cout << name << " " << age << " " << "years" << endl;

        cout << flight.origin << " " << "TO" << " " << flight.destination << endl;

        cout << "Departure time" << " " << flight.departureTime << endl;

        cout << "Arrival time" << " " << flight.arrivalTime << endl;

        cout << "*****" << endl;
    } else {
        cout << "Flight is full. Adding to waiting list..." << endl;

        flight.waitingList.enqueue(name, age); // Add to waiting list
    }
}

void cancelBooking(Flight& flight) {
    if (!flight.waitingList.isEmpty()) {
        flight.waitingList.dequeue();

        cout << "Booking cancelled successfully!" << endl;
    } else {

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        cout << "No passengers in waiting list." << endl;
    }
}

void processCancellations(Flight& flight) {
    if (!flight.cancellationStack.isEmpty()) {
        flight.cancellationStack.pop();
        cout << "Cancellation processed successfully!" << endl;
    } else {
        cout << "No cancellations to process." << endl;
    }
}

int main() {
    Flight flight1;

    cout << "Enter Flight Details:" << endl;
    initializeFlight(flight1);

    cout << "Enter number of passengers: ";
    int numPassengers;
    cin >> numPassengers;

    for (int i = 0; i < numPassengers; ++i) {
        string name;
        int age;

        cout << "Enter Passenger " << i + 1 << " Name: "; cin >> name;
        cout << "Enter Passenger " << i + 1 << " Age: "; cin >> age;
        addPassenger(flight1, name, age);
    }

    cancelBooking(flight1);
}
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    processCancellations(flight1);  
    cout << "**THANK YOU FOR VISITING GURJAR AIRLINES**";  
    return 0;  
}
```