

Classes:

1. Booking Exception:

- Custom exception class inheriting from `std::exception`.
- Used to handle exceptions related to flight booking.

2. Payment:

- Enum class representing payment methods (Cash or Card).

3. Passenger:

- Represents a passenger with attributes such as name, ticket price, and payment method.
- Constructor initializes passenger attributes.
- Provides methods to access passenger details.

4. Passenger Node:

- Node structure used in a linked list to store passengers.

5. Flight:

- Represents a flight with attributes such as flight number, origin, destination, capacity, base ticket price, and a linked list of passengers.
- Constructor initializes flight attributes.
- Methods to get flight details, book seats for passengers, and display passengers on the flight.

6. Node:

- Node structure used in a binary search tree (BST) to store flights.

7. Flight Manager:

- Manages flights using a BST.
- Provides methods to add flights, display available flights, book seats for passengers, and display passengers on a flight.

Main Function:

1. Sample Flights Initialization:

- Twenty sample flights are added to the Flight Manager object using the add Flight method.

2. User Input Handling:

- The program presents a menu for the user to choose between being a passenger or a manager, or to exit.
- Based on user choice:
 - For passengers: They can book a seat on a flight by providing flight number, passenger name, ticket price, and payment method (cash or card).
 - For managers: They can choose to display available flights or display passengers on a specific flight.
- The loop continues until the user chooses to exit.

Explanation of BST and Passenger Booking:

- The Flight Manager class uses a binary search tree (BST) to efficiently manage flights.
- Flights are added to the tree based on their flight numbers, allowing for quick retrieval and manipulation.

- When a passenger books a seat on a flight, the program searches for the flight using the flight number.
- If the flight is found, the passenger is added to the flight's list of passengers.
- If the flight is not found, an error message is displayed.

Explanation of Passenger Payment Method:

- When a passenger books a seat, they are prompted to choose a payment method: cash or card.
- The selected payment method is stored with the passenger's details.
- When displaying passengers, the payment method is also shown along with other details.

Program Flow:

1. Initialize sample flights.
2. Display a menu for user choice.
3. Based on the user's choice:
 - If the user is a passenger:
 - Prompt for flight details and book a seat for the passenger.
 - If the user is a manager:
 - Provide options to display available flights or display passengers on a specific flight.
4. Repeat until the user chooses to exit