

**Programming Fundamental LAB**

**Section:**

BSE-1A

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**Introduction:**

This project highlights a travel management app system which significantly highlights the features of booking flights, hotels and managing the system of a travel management. It provides an efficient platform for both the customer and the manager in accordance of making easy bookings and balancing the life of the customer and on the other hand helping the manager in a managing all the updating system of the database.

**Purpose:**

The purpose of this system is for the user to easily log in to book a flight, choose destinations, and select hotels based on their budget, while managers can log in separately to oversee bookings and update travel options.

The key features of this code are:

* Flight booking
* Hotel management
* Customer information storage
* Manager system

**Core Functions:**

* **Login/Signup**: Users can create accounts or log in, with all data stored in files for persistent tracking.
* **Flight Booking**: Users select One-Way or Two-Way flights, set budgets, and choose from available options. Booking is facilitated with switch cases and menu-driven logic.
* **Hotel Booking**: After flight booking, users can choose to book hotels using an array-based system, streamlining travel planning under one interface.
* **Manager Portal**: Managers can log in to oversee and update flights, enhancing system efficiency.

**Significance of the code:**

The main focus of this code was to make a useful environment for the user to manage a travel system. This code provides user-friendly access and understandable features that are easy to dealt with. Moreover it also provides manager controls that helps to manage the system and keep it up to date all the time.

**Manager Controls:**

The code has allowed the manager to make several changes i.e. update, delete, add and remove entries. A proper structure has also been defined in the code for access.

**Managers sign up and login (manager\_signup):**

* The code allows the manager to either login or sign up.
* The code also enables email validation and prompts the manager to enter an email in the correct format.
* Enforces password confirmation and validates, so that the user enters the correct password two times.

**Dashboard (dashboard):**

This is the function which allows the manager to edit several things as given below:

1. **View function:** This function allows the manager to see all the customer bookings. It allows the manager to read all of the customer bookings from the Travel\_management.txt and then copies the data into the file of manager.txt so that it could be accessed easily by the manager.
2. **Update function:**

This function allows the manager to update the following things:

* hotels by using updateHotels:

This function allows the user to update the hotels by printing the existing hotels of a city and allows the manager to update hotels in a selected city.

* ticket prices of Airlines by using update\_airlines:

This function allows the manager to update the ticket prices by selecting any airline.

1. **Remove function:**

This function enables the manager to remove several things:

* hotels by using remove\_hotels:

Removes selected hotels from the system by setting their descriptions to NULL.

* Airlines by using remove\_airlines:

Removes airlines from the system by setting their ticket price to “0”.

#### **User Interaction:**

The Travel Management System provides a seamless and interactive experience for users by offering clear and intuitive prompts. Users can interact with the system to book flights or hotels by entering details like the type of trip (one-way or round-trip), the number of passengers, and preferences such as travel class or accommodation type.

The program displays essential information to assist in decision-making. For instance:

* The displayCities function shows available cities for travel, allowing users to make informed choices based on their destinations.
* The displayAirlines function lists airlines and their respective details, such as available classes and fares.

Additionally, the system supports customization to cater to various user preferences and budgets:

* Users can select from budget-friendly, mid-range, or luxury options for both flights and hotels.
* Discounts are automatically applied where applicable, providing cost-effective solutions without compromising quality. The final cost calculation, including any discounts, is handled by the discountedCost function, ensuring transparency and accuracy.

#### **Billing System:**

The billing process in the program is user-centric and precise. It adapts to the user’s trip details and calculates the total cost accordingly. Two key functions drive this functionality:

* **generateBillOneWay**: Calculates the total cost for one-way trips, taking into account the number of adults and children, as well as the class of flight selected.
* **generateBillRoundTrip**: Handles billing for round trips, considering similar variables while also accounting for the return journey.

The billing functions factor in all user inputs, including:

* Number of passengers (adults and children).
* Travel class (economy, business, or first).
* Discounts for specific scenarios, such as group bookings or promotional offers.

This comprehensive billing system ensures users are charged fairly, with clarity in every step of the calculation.

#### **3. Conclusion:**

In conclusion, the Travel Management System is a robust and user-friendly tool designed to streamline the travel planning process. It enables users to customize their trips according to their preferences, offers a wide range of options for flights and accommodations, and ensures cost transparency with its accurate billing system.

The program's ability to present detailed information, handle complex cost calculations, and offer discounts makes it an invaluable tool for travelers seeking convenience and affordability. By integrating essential travel services into one system, it simplifies planning and enhances the overall travel experience.

**EXAMPLE OUTPUT:**





