Team: Akıllı Arayüzler (Group 9)

Orçun Özdemir

İsmet Erdem Demir

Emir Atışay

Bestflight.com

**Description:**

In this Project, we are going to design a web-based application for flight ticket-supply company like skyscanner to customers. In our company, we will be mediator between customer and certain airway companies. We will track both the customers and airway companies with ID numbers. In order to find the appropriate ticket and purchase it, customers have to register to the system by their e-mail addresses, which will be uniquely define for each customer, passwords, debit card information. In addition to that, airways also should have registered to the system to match customers with tickets according to their interest. For instances, a customer may order the tickets for the departure location, arrival location, cheapest, fastest, minimum or maximum number of stop. Airway company, should have indicates the time interval with respect to price, airplane type, flight date. When the customer buys more than 10 ticket, we will provide the following purchase with %50 discount.

**Overview:**

* In the system, there are two types of users: customers and airway companies.
* VIP customers can be informed about the latest discounts and can have special account for them to pay. Silver customers can also have information about the discounts, but they cannot have special account. Bronze customers can only pay with debit card.
* Customers will be departed as VIP, Silver, Bronze by their frequency of purchases.
* Ordinary customer is specified as Bronze in the system.
* Flights are classified with different parameters: cost, lasting, number of stops and seat type. Customers can specify his/her priority with respect to these parameters to have optimum flight.
* In addition to those, flight types are classified whether it is domestic or international. Since, international flights can be to neighbor cities, customer will be able to find flight to a country, regardless city.
* Our company does not responsible for the determining process of prices. Flight prices are predetermined by the responsible airway company.
* Companies can have special discount for specific flights, which can directly have transmitted to VIP and Silver customers. On the other hand, our company can have its own discounts for the frequent users. To illustrate, a customer that uses our company to buy tickets 5 times a month can have %15 discount for the following week or customer buys more than 10 ticket, we will provide the following purchase with %50 discount.
* Customers that are not able to pat the prices regardless of their user type will be banned and judicial process will be initiated 😊

**Functionality:**

Customers:

* Customers should register with their unique IDs and corresponding passwords.
* Customers can show their personal information; bank account, user type, first name, last name, phone number, e-mail address, purchase history and in addition to that.
* Customers can update the allowed parts.

Airway Company:

* Airway Companies can authenticate themselves as the customers with unique IDs and corresponding passwords.
* Companies are allowed to enter a new flight information via web-page.
* Companies can have entered discounts as they want.
* Companies can mark a flight as full or available.
* Companies are able to generate bill for customers. Billing procedure for each customer depends whether customer has special purchase account or debit card.

System:

* Airway companies, countries and cities should be created manually.
* The system should automatically find the cheapest and minimum stop with respect to the flight properties.
* The system should be able to find the shortest path regarding to beginning and ending time specified by the company.
* The system should automatically output to the optimum flight to customer by the customer’s priority.
* The system should assign unique IDs for each customer (number starting 1), company (number starting with 2) and flight (number starting with 0).

**Constraints:**

* Each plane has a unique Airline company, but one company can be associated with many planes.
* Each flight has a unique ID.
* Each customer and Airline company have distinct usernames.
* Each customer and Airline company should have valid passwords which include at least 6 alphanumeric characters.
* Each flight has one arrival and departure locations and may have one or more stops.
* Each Airline company has a unique ID.
* Each Airline company should have a headquarter address, an e-mail address and a phone number, which cannot be left blank.
* Each customer should have a home address, an e-mail address and a phone number, which cannot be left blank.
* The system should store the addresses as street name, district, city, and country.
* Each customer can buy one or more tickets, but each ticket belongs to a single customer.
* Each customer has a type (VIP, Silver, Bronze) and each flight has stops and seat type (Economy, Business).
* Cost of flight depends on the seat type and number of stops.
* Each location has one or more airports, but each airport has unique country.
* Each ticket must have the customer and airline company information with departure, arrival locations.
* Each flight has a discount percentage from 0% to 65%.

**Queries:**

* Find the customer who has been flighted the most distance in two years ago.
* Find the customer who has spent the most money on buying tickets last year.
* Sort the customers with a contract according to the DISTANCE OR MONEY they have spent on two years ago.
* Find the customer who has bought the longest duration of flight ticket.
* Find the Airline Company who has sold the shortest duration of flight ticket.
* Find the cities that received the most air traffic via company’s tickets in July 21, 2017 and June 12, 2018.
* Find the city that has received the most international flights.
* Find the city that has received the most domestic flights.
* Generate a ticket for each customer for the past month. The ticket includes the customer name, arrival and departure places, plane-id and departure, arrival times.
* Find the VIP customers’ names who purchased the most tickets.

Entities

* Airway
* Customer
* Country
* Airplane
* Flight
* Airport
* Usertype
* Payment
* Ticket
* Discount
* Address

Relations

* FliesTo
* FliesFrom
* UsesDiscount
* FliesWith
* Buys
* PaysWith
* UserAs
* HiresPlane
* UsedDiscount
* isKindOfUser
* Distance
* PlaceIn

**Sample Input/Output:**

VIP customers can pay their ticket prices by their special accounts while Silver and Bronze customers pay their prices by sale of ticket. Tickets are sorted by the billing date. Ticket includes customer ID, name, address, name, flight number, departure time and location, arrival time and location, airway company and price.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Customer ID, Name** | | | | | **Billing Date**  14.04.2018 |
| **Customer Address** | | | | |  |
| **Customer Phone Number** | | | | |  |
| **BESTFLIGHT.COM**  **WE ARE THE BEST** | | | | | |
| **Flight Number** | **Seat**  **Type** | **Departure Time**  **/Airport** | **ArrivalTime /Airport** | **Company** | **Price** |
| 121435 | Business | 15.04.2018, 14:00  Sabiha Gökçen | 15.04.2018, 20:00  Esenboğa | THY | 100.00 TL |
| 789234 | Economy | 24.04.2018, 04:00  Adnan Menderes | 26.04.2018, 19:00  JFK | Pegasus | 25.00 TL |
| 234654 | Economy | 10.05.2018, 18:40  Bodrum | 10.05.2018, 23:35  Gaziantep | AnadoluJet | 75.00 TL |
|  |  |  |  |  |  |
|  |  |  | **TOTAL** |  | 200.00 TL |