**Programming Project**

**Flight management**

**Kendall Retana Madrigal**

**Jeniffer Martínez Sequeira**

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**Software Engineering.**

**Programming II.**

**Flight management**

**Administrator section.**

**Login**

• The user and the administrator password must be registered in the database.

• In the graphical interface, the password must be encrypted.

• In the database the password must be encrypted.

• All the information in the administrator's section can only be seen by him, that is, a user can not access any part of that section.

• The system must allow to close session.

**User section.**

**User’s login.**

• Users must register with the system.

ID number, Name, Password

• Once the user has registered, they can login to the system.

• In the graphical interface, the password must be encrypted.

• In the database the password must be encrypted.

• Both the administrator and the users must be in a single table in the database.

**CRUD Countries.**

• Countries must appear in alphabetical order.

• For countries, the following information must be registered in the database:

Identifier, Name, Flag

**CRUD Places.**

• This section manages the places where there is an airport according to each country.

• The places must appear in alphabetical order.

• For places, the following information must be registered in the database:

Identifier,Name

**CRUD Airports.**

• This CRUD must be developed only using the DataGridView element; that is, from the element, insert, modify, delete and display information.

• It must be considered that a country can have more than one airport.

• Airports must appear in alphabetical order.

• For airports, the following information must be registered in the database:

Identifier,Name,Location,IATA

**CRUD Routes.**

• For the routes, the following information must be registered in the database:

Identifier,

Origin, country,Destination country,Length

**CRUD Hotels.**

• Consider that each room in any hotel has a maximum capacity for 4 people.

• For hotels, the following information must be registered in the database:

Identifier, Name, Photo, Country, Place, Rooms

**CRUD Hotel rates.**

• For hotel rates, the following information must be registered in the database:

Identifier, Price

**CRUD Flight rates.**

• For flight rates, the following information must be registered in the database:

Route, Price

**CRUD Vehicles.**

• The brands, models and types that are proposed in the box are examples, investigate which are the ones that are adapted for this type of business.

• For vehicles, the following information must be registered in the database:

Brand,Model,Type,Price,Quantity

**Section only for lodging.**

• The user must choose the destination, this filter can be by city, country or hotel name.

• The user chooses the dates for the booking.

• The user chooses the number of rooms he needs and indicates the number of adults and children (remember that the rooms are for a maximum of 4 people). Both the rooms and the people must use the spinner control.

• Once the filters are done, the hotels are shown. The hotels must be arranged in such a way that the best qualified are first.

• You must contemplate that, if the filter was by city or by country, only the hotels that are registered in that city and in that country will appear. In the case of the filter by hotel name, the search is specific and only that should be displayed.

• Moreover, the user can order the hotels by the following filters: for the highest price, for the lowest price or for the place.

**Section for flights**

• For flights, the user can choose the origin and destination, despite of the start and end date of the trip.

• There must be options to add a hotel and / or a vehicle.

• In the case that the flight is the only thing the user needs, the screen displays the origin, destination, start date, end date and the number of passengers (adults and children).

• If it is the case of flight and adding a hotel, the screen displays the origin, destination, start date, end date, number of passengers (adults and children) and the number of rooms you need. Obviously, the hotels that are going to be deployed are the ones that match the destination country.

• If it is the case of flight and adding vehicle, the screen displays the origin, destination, start date, end date, the number of passengers (adults and children) and the list of vehicles, which should leave only those that they adapt to the conditions.

• In the event that the user needs a flight, hotel and vehicle, the screen displays the origin, destination, start date, end date, the number of passengers (adults and children), and the number of rooms needed and the list of vehicles.

**Booking preview.**

• All matches must be shown according to the searches the user performs, either from the only lodging section or the flight section.

• You must show the start date with your country of origin and country of destination, in addition to the final date with your country of origin and destination country, the stopover you must do with your respective country, the name of the hotel and the vehicle. For the hotel and the vehicle, you must be able to open an additional window to see the complete information.

• Additional you must show the total price of the flight plus the total price of the hotel plus the total price of the vehicle plus the tax of 13%, which gives a final total of the purchase.

• It is possible to order searches for the shortest time, for fewer scales, for higher price and for lower price.

**Purchase section and my booking.**

**• My Reservation:** there is the possibility that the user can temporarily save the possible purchase, with all the characteristics that it has; you can even log out that when you log in again you can go to the My Booking section to check it and be able to buy if it is the case, or you can delete the reservation.

• **Purchase:** the user can buy according to the characteristics that he has chosen, this purchase must be registered in the database; the purchase can be only about hotels or a full flight.

• If a user makes the purchase, he can qualify a hotel. The way to qualify hotels is free to do it.

**Reports.**

* Reports should be generated using graphics.
* The following reports should be generated:
  + Show the number of times each of the hotels have been booked.
  + Show the number of people who have been to the hotel.
  + Show the percentage of visit by country. Only those who have visitors are considered.
  + Show the number of adults who have traveled in a range of dates.
  + Show the number of children who have traveled in a range of dates.
  + Show the brands of the most rented vehicles.
  + Show the names of the countries in which stopover has been done.