

TravelJet

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Transversal project VBA/MySQL

EPF Troyes

2, Rue Fernand Sastre, 10430
Rosières près Troyes

www.epf.fr
OK/CZ/JM

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Presentation of the client's activity

TravelJet is an airline company that owns several types of aircraft (Airbus A220, Airbus A320, Airbus A350) and offers short-haul flights (flights in metropolitan France and intra-Caribbean), medium-haul flights (flights in Europe and between Europe and North Africa) and long-haul flights (intercontinental flights). Each aircraft has a given capacity and must be strictly maintained on regular dates to ensure passenger safety.

When a user wishes to purchase an airplane ticket via the company's website, he or she must do a flight search by giving the departure airport, destination airport, travel dates, number of passengers and category of each passenger among the following:

- | | |
|--------------------------------------|------------------------------------|
| ▪ Senior (65 years and over) | ▪ Young (18-24 years old included) |
| ▪ Adult (25-64 years old included) | ▪ Young (12-17 years old included) |
| ▪ Student (18-29 years old included) | ▪ Child (2-11 years old included) |

The site then proposes several flights corresponding to these criteria. A price is displayed according to the characteristics of the flight (with or without stopover, departure and arrival date). For a given flight, several options are available that influence the price to be paid:

- 0, 1 or 2 checked baggage items (hand luggage is always included)
- Economy, business or first class

The price offered also depends on the number of seats remaining in the aircraft at the time of booking: If 25% of the total capacity of the aircraft is left, the basic price is increased by 10%, if there are 10% or fewer seats left, the basic price is increased by 25%.

Once the user has selected the flight options and given the names of the various passengers, he or she can choose to take out cancellation insurance. He must then create an account or log in to his account to validate his order. In particular, he must give his name, first name, date of birth, e-mail address and address as information. He can then choose his payment method (CC (Credit Card) or PayPal). Once the order has been paid for, its electronic tickets are available in its customer area. Each order is associated with an invoice.

Each user can have a loyalty card on which they earn Miles allowing them to have free tickets. The number of miles earned per flight depends on the distance flown and the class of the reserved space.

Presentation of the project

Need Analysis

The airline's director wants to develop a web interface so that users can book their tickets online.

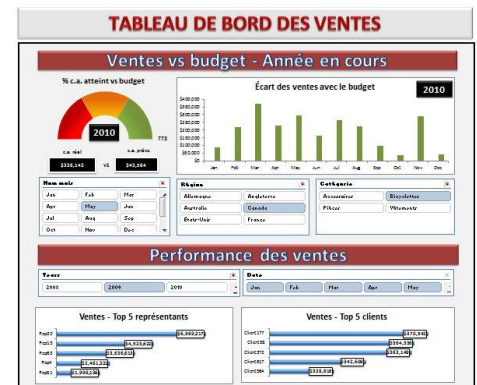
He also asks you to set up tools (database, dashboards...) to manage his activity. At any time, he must be able to follow sales, and therefore online bookings made by users. It must also manage the staff on board for each flight. On board, each aircraft must be present a pilot, a co-pilot, and a chief of the pacabin, flight attendants and stewards (1 per 50 full or incomplete passengers).

Depending on the duration of the flight, different types of meals can be served: snacks, breakfast, dinner.

The quantity of fuel required is determined by the distance to be traveled.

The director must have at his disposal a sales follow-up (sales per month, per year, per destination...) to have the evolution of his revenue in particular and to

be able to anticipate the requests. It must also be able to follow whether flights are on time, or late with the reasons associated with possible delays.



Project objectives

The objective of the project is to develop a tool to manage and monitor the client's activity before 8 January, at 6 pm.

The database will be developed under MySQL and should allow ensuring the functions requested in the specifications.

The data will be retrieved in an Excel file to create a user interface and a dashboard to track activity.

Each of these tools is supported:

- a user guide for a quick taking in charge of the tools by the customer
- an operating guide for any updates or developments of the tool by the customer



Specifications

You will create two graphical user interfaces in Excel (on the same file):

- 1) A customer interface (Traveljet), which will allow the company to visualize the proper functioning and performance of the company. For this reason, your tool must allow you to perform the following functions:
 - Annual sales report and comparison at the same time of n-1 year.
 - Sales report by flight category.
 - Flight quality indicators.
 - Display of safety and maintenance checks performed or not performed on each aircraft.
 - Alerting of late flights and late security checks.
 - Statistics on the reasons for delays.
 - Assigning or deleting a staff member to a flight.
 - List of flights of a flight category entered by the user, with the names of the associated passengers for each flight category.
 - Passengers who are registered for a given flight.
 - Personnel involved in a flight.
 - The departures assigned to a given aircraft for the coming week.
 - The number of flights by destination.
 - The average price of a given flight by destination.
 - A customer file with all the customer's characteristics as well as the flights he has already booked, and the associated invoices. The search must be able to be done on the full name or the first letter of the client's name.
 - Possibility to modify the database (add/remove a staff member, add a flight...).
 - Customers with more than 6000 miles, which allows them to have a free flight to mainland France, with the next flight they could claim.

- 2) An interface for future travelers (Traveljet customers), which must provide the following functions:
- Creation of a customer account that allows you to register and view your personal information (surname, first name, number of miles remaining...).
 - Search for a flight between two cities, display of all direct and indirect flights (1 stopover maximum) with travel time, flight time, total price, stopover cities.
 - Consultation of the flight characteristics corresponding to a journey (including departure and arrival times, planned meal on board, aircraft, stopover flight time included).
 - Booking a flight, possibly free of charge if the number of Miles allows it.
 - Access to its booked flights and the possibility of canceling them.
 - Access to its flights performed, with the associated invoice.
 - Any additional information (such as the number of flights flown, travel frequency, average mileage gain per month, etc.) will be appreciated.

Your graphical user interface should be pleasant to use, intuitive, user-friendly and ergonomic. The information requested by the user (whether the customer or the traveler) must appear clearly on the screen, and access to this information must be as simple as possible.

As your tool must be integrated into an information system that will also require SQL, all the queries you use must be made in SQL in order to be reused by the Traveljet IT team.

The airline's manager is also interested in the safety of its website and its users. Therefore, he asks you to study two particular attacks: identity theft via cookies and SQL injection. You will present these two attacks, as well as the possible means of protection.

Deliverables

Deliverables presentation

You will upload all the related deliverables of the project to Moodle. The table below summarizes all the deliverables to be submitted.

Tableau 1. Détail des livrables attendus

| Deliverables | Detail and nomenclature | Dead-line |
|--------------|--|------------|
| L1A-L1B* | User guide (.pdf) for Excel/VBA tools User guide (.pdf) for php/MySQL tools | 15/01/2020 |
| L2A-L2B* | Operating guide (.pdf) for Excel/VBA tools Operating guide (.pdf) for php/MySQL tools | 15/01/2020 |
| L3A-L3B* | Tool (.xlsm) Tool (.zip) | 15/01/2020 |

** Deliverables L1 to L3 are simultaneously uploaded to the same location in a.zip file*

Each deliverable respects the following nomenclature when it is uploaded to Moodle:

Name1_Name2_Name3_Name4_Name5.zip (or .pdf or .xlsm... according to the instructions mentioned in Table 1).

Contact information

The supervisors involved in this project are available below.

SQL Part : Marvin Chazelon, Bryan Levieux

VBA Part : Elnaz Asadollahi, Xixi Wang

Information about the company