DATABASE PROJECT

MakeMyTrip

For this project a travel agency database has been developed. The project started off with the rough idea that a travel agency database had to be created. How the database would function and how it would look like (the conceptual logical, the physical and the usage design) was up to the developers. The first step was to create an Entity Relationship Diagram (ERD), from which a database would be developed.

First the functional requirements for the database were discussed. The main criterion was that the travel agency should be able to offer flexible packages to its customers. A flexible package gives a customer the opportunity to put together a vacation anyway the customer pleases.

The next step was the development of the ERD and from there on the development of the database. Along the way several new possibilities for the database were encountered. This meant changing the ERD. This was a process of iterations which still has not ended. This process and the results will be discussed in detail in this document.

1. INTRODUCTION

Make my trip is a travel agency that offers its customers a full service for their vacation. The system is created to provide a full range of possibilities for the customers of Make my trip. Customers should be able to choose freely how to travel, where to stay and what to do. Of course the system is capable of offering the customers all the options they prefer, like a broad selection of accommodations and activities.

To be able to give the best service, the clerks must be able to interact with the system easily. It is important to fulfill the wishes of customers, without interference of problems occurring with the system. This is why the system is designed for easy interaction.

A lot of attention has been paid to the look and feel of the system, so working with the system feels natural and nice.

In this document the process of development of the system is explained. Firstly, the background of the project, the context and the requirements will be discussed. Secondly, the description of work will be given, meaning the project ideas and the undertaken steps. Thirdly, the final ERD and database schema, outline, are presented in the presentation of the program. Then the end results will be shown, followed by a scenario through the system, to show all of its functionalities. Finally, some conclusions about the project will be given

2. BACKGROUND OF THE PROJECT

Overview of the travel agency database application: Database server is a computer responsible for database storage access and processing, constituting a 2-tier client/server architecture. Two tier communication of the client and the database a direct connection with small data, which do not use a lot of space. The connection with the database is a direct connection, which improves the connectivity and reduces the chance of faults.

In the travel agency, the database application (see fig.1) will consist of several levels.

The lowest level in the application is the holiday package database, which will contain all the tables and information in the database.

The top layer of the application is the GUI (graphical user interface) this is for the user and built on top of the application. The GUI enables the clerk and the manager to interact with the database on more interactive matter but using a simple interface.

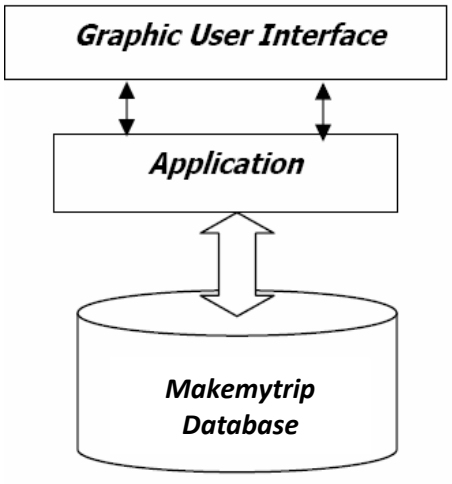


Figure 1 – Travel agency database application

To make the travel agency application we start by choosing a data model. Then we will use the data model to translate the requirements into a DB schema. After this, we will then choose the DBMS using the model we designed for our travel agency. The next step is then to Design the storage (physical) structure considering the DB requirements and implement the physical structure using the

DBMS. Designing the access constraints / facilities considering the DB requirements (e.g. views / access rights / constraints, etc.) and implement the usage facilities are the last steps that take place.

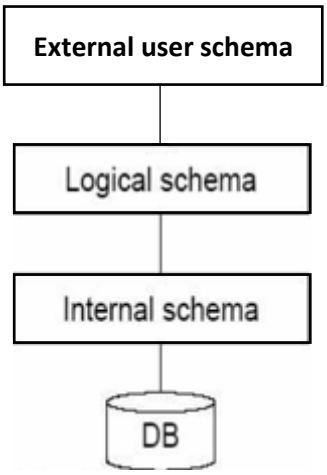


Figure 2 – Standard Architecture for a DBMS

The conceptual level design involves analysing users' needs in terms of the activities that need to be accomplished using a system and the objects and operations, which a user has to employ to accomplish the tasks.

The physical level design concerns embedding the conceptual model of the system in a physical structure.

3. DISCRIPTION OF WORK

The process of developing and implementing a travel agency consists of several steps;

1. Design a conceptual data wireframe
2. Database Design and Development;
2. Database GUI Design;
3. Database User Interface Development;

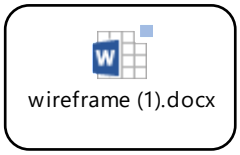
The Database Design and Development, is coming up with an idea of how the travel agency should look like. In this phase it is all about design at the conceptual level and this includes the development of the ERD and the development of the diagrams which have been done in MySQL. The database application has the capability to store, search and retrieve information related to holiday packages.

On conceptual level, the purpose of the travel agency is to offer different options, which can be chosen by a customer and made into a complete holiday package.

These options are the entities used in the ERD:

- Transportation including type and number
- Stay (hotel choice) including type
- Location including name and number
- User including: name, number
- Activities including name, number and description
- Customer including: name, number, address, telephone number, zip code and
- Package including name and number
- Amenities including name and number

All of the entities in the ERD database are optional except for the location, which is obligatory in every package. With this in mind, a rough sketch was first made of how the ERD would look like.(Double click the icon below to see wireframe.)



Development of the database, the logical design, was done using the data definition language (DDL) MySQL which is also a data manipulation language.

Every entity is inserted into the database which is represented in the ERD and related to customers, transportation etc.

The database Design, is used by the clerk and the manager of the travel agency. This means that they have to be able to perform certain basic functionalities with the data. The functionalities add, update, delete, list, clear and search.

This enables the user to find data and insert new data. A DBMS used to perform error checking and to insert data into the database. The Database, User Interface Development, is more at the physical level of the design in which was decided how the actual design would look like for the user. This is what the user will work with.

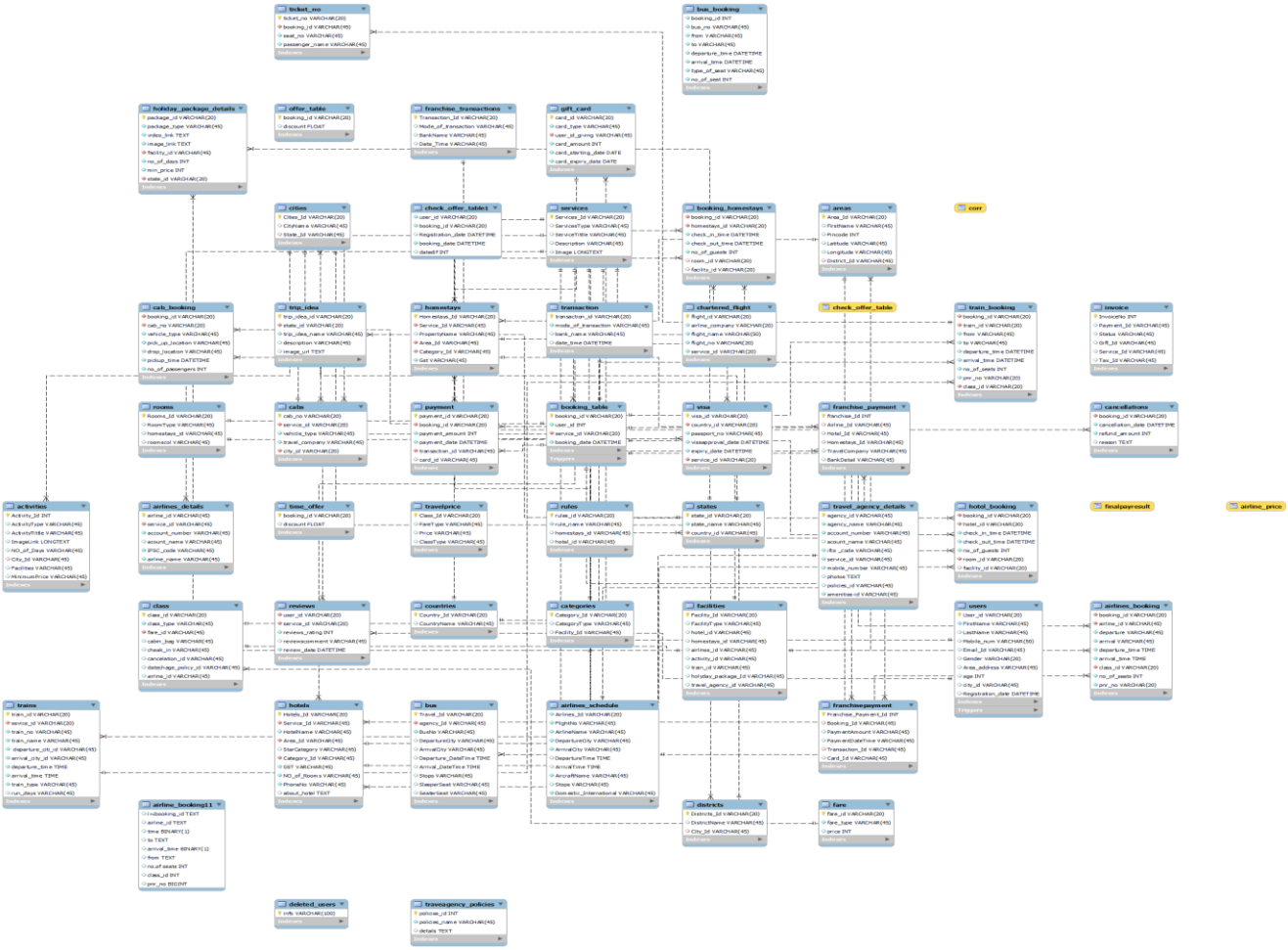


Figure 3 – ER diagram

To develop the above schema we need to follow following steps

1. **first of all create a database in your local root in my sql to create a db run following query**

   “create database makemytrip ;”

2. **now we need to run the create table query to create tables in makemytrip database** (click on icon)

   mmt.rar

3. **we will create the stored procedure to reduces the traffic between application and database server**

   stored procedure.txt

4. **Now next step in our database is to create trigger, triggers will help us to perform checks of values to be inserted into a table or to perform calculations on values involved in an update.**

5. **Views to see the simplified data**

7.Automation

In automation we tried to automate user experience by connecting MySQL with python with the help of MySQL connector library in python. In this one can get quick access to tables, triggers, stored procedure and views in our database. Users can test our triggers and stored procedures by entering input in it.

8. CONCLUSION

The process of development of the database two week long project has had its ups and downs. The first step in the process, the development of conceptual and logical design (the requirements and the ERD) went very well. There were a lot of positive discussions and through good cooperation the requirements, the initial ERD and the overall conceptual idea of the database were acquired. The main criterion was the flexibility of packages. This was kept in mind throughout the development.

The next step was the creation of the physical database. Here the first iterations in the design of the ERD took place. It was decided to first create the tables of the database that would provide the minimal functionality for the system. These were the tables customer, location, stay, transportation and package. These entities and their relations would give the minimal functionality for the system. After the creation of the database and adding some data into it, the usage design began. For every entity an abstract class was designed, because the functionalities of the entities were basically the same and could be inherited from one abstract class. The basic functionalities were adding, updating and deleting. Later on finding ‘previous’ and ‘next’ and ‘clearing’ were added.

In this stage of the project some problems occurred with the database and SQL syntax. The usage of preparation of triggers gave some problems with the database interaction. The problems were fixed and after a few days the project was back on track.

Since there was still time it was possible to add some extra features to the system. This meant once again changing the ERD and changing the database. The system was extended with the possibility for groups to book packages, a number of accommodations, adding amenities to accommodations and the possibility to book activities. This also meant a lot of more work for the GUI design, but by using abstract classes, the amount of work was lessened. Then we try to add automation in our project which took 3 days we learnt some new skills in it. What still is missing and which could be further developed in the future is the possibility of adding customers to groups by dragging and dropping the names in the group box. Each group would then show all the customers which are part of a group also a checkbox could have been added which then would show the main booker, the person who will be paying and should be contacted about the payment.

Finally the look and feel of the system was optimized. The interface was made user friendly by giving the users the ability to drag and drop entities to create a package. The end results of the project suffice the requirements and more.

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