INSTITUTO POLITÉCNICO NACIONAL
ESCUELA SUPERIOR DE CÓMPUTO

DISTRIBUTED DATABASES

“Sales and Inventory System Manager (SGVI)”
Project Report

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Abstract

With report we will see the database design and modeling of a sales and inventory management system of a furniture called *Mueblerías Quetzal S.A de C.V.* Also we will make a description about the features and the design about the system being developed, along with the insight for why this system was created. Finally here is represented the database modeling, at conceptual and logical level, that describes this system.

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Introduction

The system is been developed for an enterprise, which name is **Mueblerías Quetzal S.A. de C.V.** The following paragraph describes the background, in which the project is been developed and the enterprise business conditions.

> *The organization is dedicated to producing furniture and distribute them across the Metropolitan Area of the México City. This organization wholesales furniture and retails to different client types, as people or enterprises.*

The purpose of this system is to develope an application which supports the inventory control, funiture retail (sales), the customer registration and brings to the enterprise a fast and efficient tool which helps to get into the e-commerce. All of this in order to reduce most of the human type mistakes in the information control, including the easier sell of furniture.

The scope of the project is to

- Adequate the sales process through information control protocols
- Improve the inventory process management
- Increase the sales using e-commerce
- Automate the delivery management process

Development Tools and Features

The development of the project is been made with the following features grouped in Database Server and Web Server.

Database Server Features

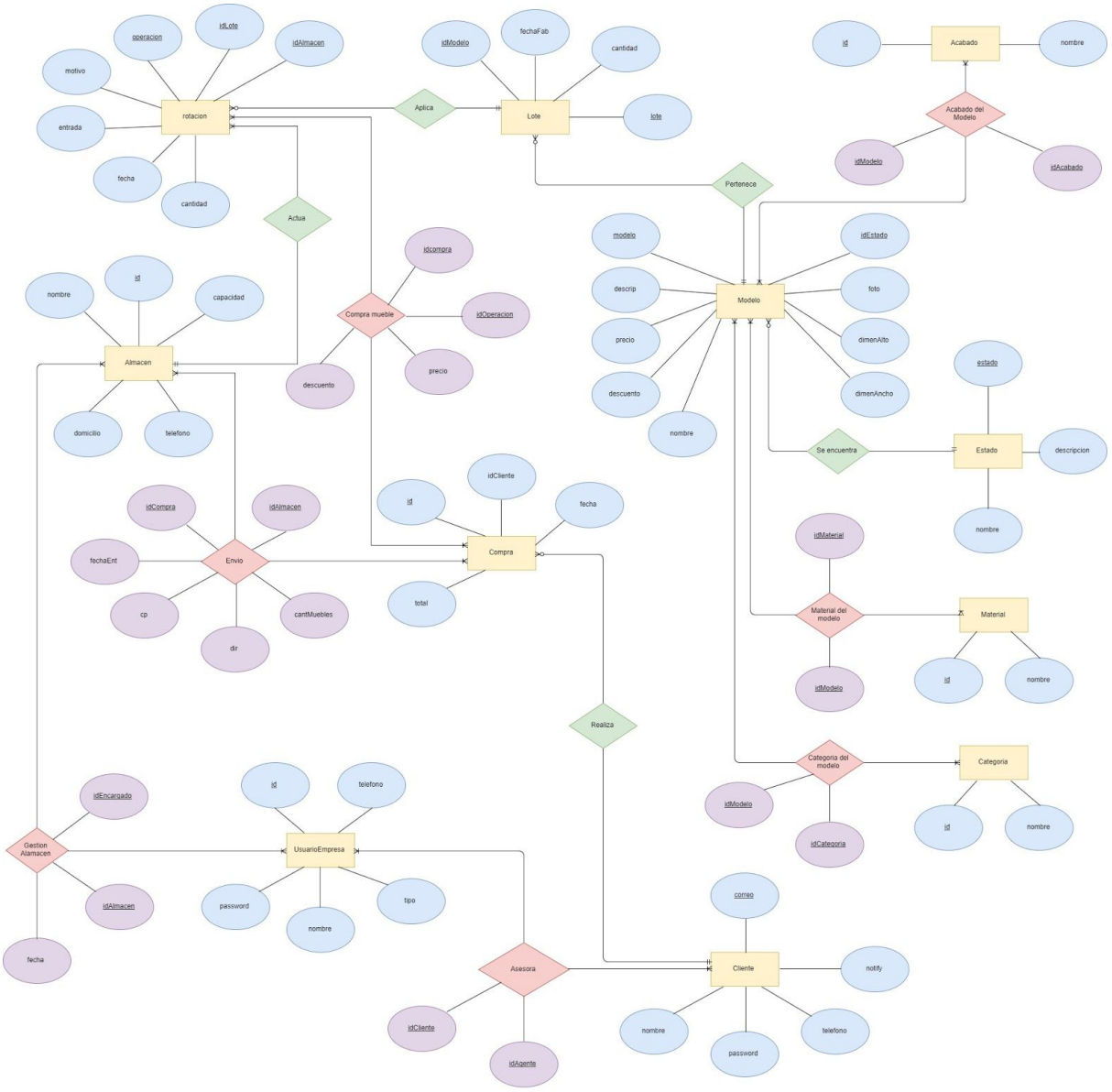
Apache/2.4.6 (CentOS) OpenSSL/1.0.1e-fips
Database client version: libmysql - mysqlnd 5.0.12-dev
PHP extension: MySQL Improved Extension (mysqli)
PHP extension: phpMyAdmin v4.6.6 o mayor
PHP version: 7.0.8

Web Server Features

Apache/2.4.6 (CentOS) OpenSSL/1.0.1e-fips item 20
PHP extension: MySQL Improved Extension (mysqli)
PHP version: 7.0.8
JavaScript Version: ECMAScript 6 (JS 2015)
CSS version: CSS 3.

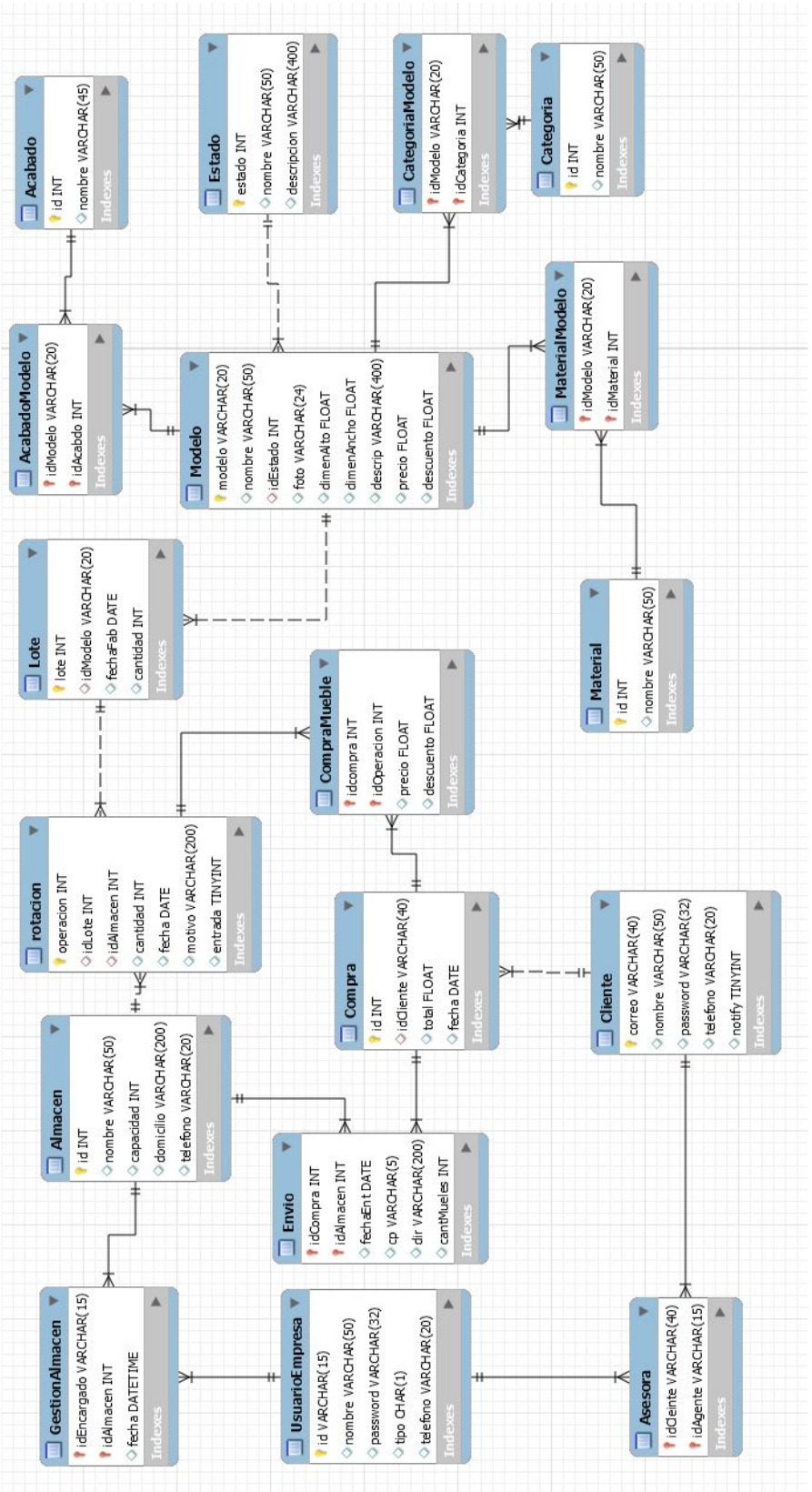
Modeling

Entity Relation Model



SGVI ENTITY - RELATION DIAGRAM

Relational Model



Queries made and their description

For “Catalogo” (Catalog)

- Know all the available models in our database,

```
SELECT * FROM Modelo
```

- Now we know all our models, we need to know how many we have of each model

```
SELECT A.idmodelo, (entradas - COALESCE(salidas,0)) AS existencias
        FROM
                ( SELECT idmodelo, SUM(Rotacion.cantidad) as entradas
                FROM Rotacion, Lote
                WHERE idlote=lote
                AND entrada=1
                AND idModelo='".$encode[$x]['modelo']."') AS A

                LEFT JOIN

                (SELECT idmodelo, SUM(Rotacion.cantidad) as salidas
                FROM Rotacion, Lote
                WHERE idlote=lote
                AND entrada=0
                AND idModelo='".$encode[$x]['modelo']."') AS B

                ON A.idmodelo=B.idmodelo;
```

Where **$encode[$x]['modelo']** is our specific model.

- After that, we need to know, the categories and the finishing touch of each model.

  ➔ Category

```
SELECT Categoria.nombreFROM CategoriaModelo, Acabado, Modelo
WHERE CategoriaModelo.idCategoria=Categoria.id
AND CategoriaModelo.idModelo=Modelo.modelo
AND modelo.modelo like ".$encode[$x]['modelo']."";
```

Where **$encode[$x]['modelo']** is our specific model.

➔ Finishing touches

```
SELECT Acabado.nombre FROM AcabadoModelo, Acabado, Modelo
WHERE AcabadoModelo.idAcabado=Acabado.id
AND AcabadoModelo.idModelo=Modelo.modelo
AND modelo.modelo like ".$encode[$x]['modelo']."";
```

Where **$encode[$x]['modelo']** is our specific model.

For “inventario”

In “Inventario” we can see in which warehouse we have each model and from which lot it comes. What is more we need to know how many we have for each model.

- First of all we need to know all our Warehouses

```
SELECT * FROM almacen;
```

- The second more important thing, we need to know the existences for each model.

```
SELECT A.idmodelo, (entradas - COALESCE(salidas,0)) AS existencias
        FROM
                ( SELECT idmodelo, SUM(Rotacion.cantidad) as entradas
                FROM Rotacion, Lote
                WHERE idlote=lote
                AND entrada=1
                AND idModelo='".$encode[$x]['modelo']."') AS A

                LEFT JOIN

                (SELECT idmodelo, SUM(Rotacion.cantidad) as salidas
                FROM Rotacion, Lote
                WHERE idlote=lote
                AND entrada=0
                AND idModelo='".$encode[$x]['modelo']."') AS B

                ON A.idmodelo=B.idmodelo;
```

Where **$encode[$x]['modelo']** is our specific model.

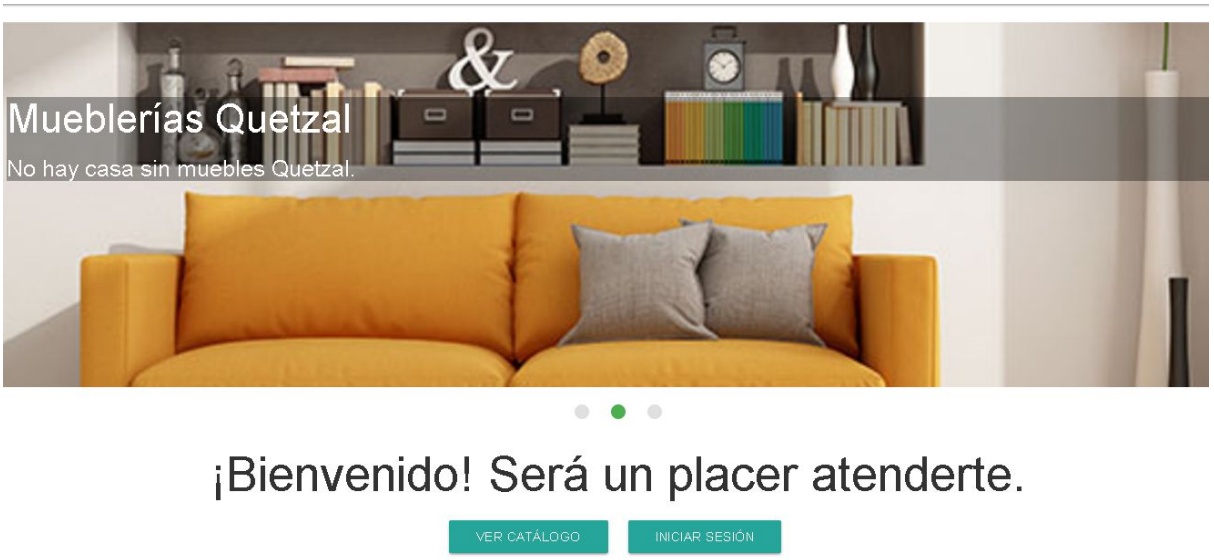
Then we need to know the Warehouse id, Warehouse name, lot, Warehouse capacity, of a specific model.

```
SELECT A.idAlmacen, A.almacen, A.idmodelo, A.elLote, (entradas -
        COALESCE(salidas,0)) AS existencias, A.capacidad
        FROM
                ( SELECT Almacen.id AS idAlmacen,Almacen.nombre AS
                        almacen,Almacen.capacidad AS capacidad, lote AS elLote,
                        idmodelo, SUM(Rotacion.cantidad) as entradas

                        FROM Rotacion, Lote, Almacen
                        WHERE idlote=lote
                        AND Almacen.id = Rotacion.idAlmacen
                        AND entrada=1
                        AND idModelo='".$modelo."'
                        GROUP BY 1, elLote) AS A

                        LEFT JOIN

                (SELECT Almacen.id as idAlmacen, idmodelo, Lote.lote AS elLote,
                        SUM(Rotacion.cantidad) as salidas

                        FROM Rotacion, Lote, Almacen
                        WHERE idlote=lote
                        AND Almacen.id = Rotacion.idAlmacen
                        AND entrada=0
                        AND idModelo='".$modelo."'
                        GROUP BY 1, lote) AS B

                        ON A.idmodelo=B.idmodelo AND
                        A.idAlmacen=B.idAlmacen AND A.elLote=B.elLote;
```

Where **$modelo** is our specific model.

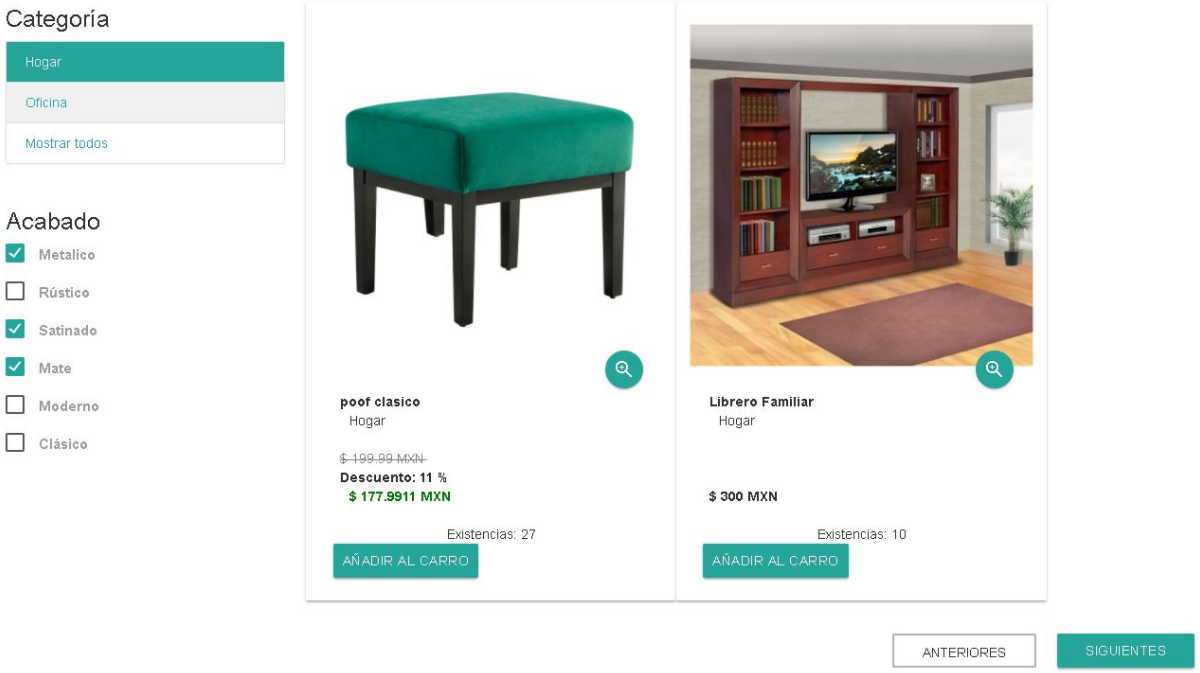
NOTE; *We wrote down the queries of the modules we considered most interact with the database.*

Screenshots



¡Bienvenido! Será un placer atenderte.

VER CATÁLOGO INICIAR SESIÓN




Modelo específico
Modelo:
H-0001
BUSCAR
Almacenes
Azcapotzalco
Cuauhtémoc
Almacén: Azcapotzalco
Modelo: H-0001
Lote: 1
Existencias del mueble en el almacén: 17
Todas las existencias: 27
Capacidad del almacén: 300
Almacén: Cuauhtémoc
Modelo: H-0001
Lote: 1
Existencias del mueble en el almacén: 10
Todas las existencias: 27
Capacidad del almacén: 1000

Conclusions

With this project we remembered the topics of the Database subject and the importance of know how to create good queries as we can see in inventory, because if we didn't specify the selection conditions we didn't get the values that we need. Also we improved our knowledge of how to use the Relational model, because we use a lot of data types and it is important to know theirs characteristics.

David Flores Casanova

This project show to us the fundamentals of design and implementation of a database applied to a real application, we reminded how to create an ER model, translating it to its equivalent relational model and then use this model to implement a database using the DBMS mysql. Also this project will allow us to implement furthermore complex and complete systems which will be able to communicate with others as well.

Eric Alejandro López Ayala

We started developing in this project, which was previously designed, in the older design we found that the database was not correctly designed because there was no way we could find from which lot was a furniture produced, so we modify the database relational model structure in order to manage the information correctly. Then after, we got to modify the coded queries on source files of the application.

Daniel I. Ortega

This project helped me to better understand the concepts of databases and the importance of a normalized database because with that reduce the errors in insert or update of registers. Also I remembered how create a web page and the connexion with a database using php code. For me that proyect is good but I think that it could be better with the things that we'll learn in class.

Evelyn Gabriela Reyes Jimenez