Mac n' Charlie's Restaurant Database

By Team 6

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Course: Database 3430

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Introduction

The Database Management System (DBMS) we have created is designed to provide a restaurant with a means of organizing and storing its records as well as a means for customers to make reservations online. With the help of our DBMS, a restaurant will be able to keep track of its employees, customers, reservations, and all of the items on its different menus. The DBMS was created through MySQL and is based in HTML and PHP.

Acknowledgement

Dr. T provided advice and assisted with the coding process.

**Conceptual Schema**

Employee

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| employeeFName | employeeLName | ssn | sex | birthDate | salary | employeePhone | address | employeeID |

MenuItem

|  |  |  |  |
| --- | --- | --- | --- |
| menuItemID | menuItemName | menuItemDescription | price |

Menu

|  |
| --- |
| menuType |

StaffRole

|  |  |
| --- | --- |
| roleID | section |

Reservation

|  |  |  |  |
| --- | --- | --- | --- |
| reservationID | date | time | partySize |

Customer

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| customerID | customerFName | customerLName | customerPhone | customerEmail |

**Relational Schema**

Employee

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| employeeFName | employeeLName | ssn | sex | birthDate | salary | roleID | employeePhone | address | employeeID |

StaffRole

|  |  |
| --- | --- |
| roleID | section |

MenuItem

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| menuItemID | menuType | menuItemName | menuItemDescription | price |

Menu

|  |
| --- |
| menuType |

Order

|  |  |
| --- | --- |
| customerID | menuItemID |

Customer

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| customerFName | customerLName | customerEmail | customerPhone | customerID |

Reservation

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| employeeID | customerID | reservationID | date | time | partySize |

Catalog

Table: EMPLOYEE

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute Name | Data Type | Indicated Not NULL as needed | Primary/Foreign Key |
| employeeFName | varchar(20) | NOT NULL |  |
| employeeLName | varchar(20) | NOT NULL |  |
| ssn | char(11) | NOT NULL |  |
| sex | char(1) | NOT NULL |  |
| birthDate | date | NOT NULL |  |
| salary | double | NOT NULL |  |
| roleID | varchar(15) | NOT NULL | Foreign Key |
| employeePhone | varchar(14) | NULL |  |
| address | varchar(60) | NOT NULL |  |
| employeeID | int(11) | NOT NULL | Primary Key |

Table: MENUITEM

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute Name | Data Type | Indicated Not NULL as needed | Primary/Foreign Key |
| menuItemID | int(11) | NOT NULL | Primary Key |
| menuType | varchar(40) | NOT NULL | Foreign Key |
| menuItemName | varchar(20) | NOT NULL |  |
| menuItemDescription | varchar(60) | NOT NULL |  |
| price | double | NOT NULL |  |

Table: MENU

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute Name | Data Type | Indicated Not NULL as needed | Primary/Foreign Key |
| menuType | varchar(20) | NOT NULL | Primary Key |

Table: STAFFROLE

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute Name | Data Type | Indicated Not NULL as needed | Primary/Foreign Key |
| roleID | varchar(15) | NOT NULL | Primary Key |
| section | varchar(30) | NOT NULL |  |

Table: RESERVATION

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute Name | Data Type | Indicated Not NULL as needed | Primary/Foreign Key |
| employeeID | int(11) | NULL | Foreign Key |
| customerID | varchar(15) | NOT NULL | Foreign Key |
| reservationID | varchar(15) | NOT NULL | Primary Key |
| date | date | NOT NULL |  |
| time | time | NOT NULL |  |
| partySize | int(3) | NOT NULL |  |

Table: Order

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute Name | Data Type | Indicated Not NULL as needed | Primary/Foreign Key |
| customerID | varchar(15) | NOT NULL | Foreign Key |
| menuItemID | int(11) | NOT NULL | Foreign Key |

Table: CUSTOMER

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute Name | Data Type | Indicated Not NULL as needed | Primary/Foreign Key |
| customerID | varchar(15) | NOT NULL | Primary Key |
| customerFName | varchar(20) | NOT NULL |  |
| customerLName | varchar(20) | NOT NULL |  |
| customerPhone | varchar(14) | NULL |  |
| customerEmail | varchar(40) | NULL |  |

Significant Programs Used in the Implementation of the Restaurant Database

-PuTTY (to access the student machine)

-MySQL

-PHP

-HTML

-CSS

Examples of how the database fulfills the goals of the project

The database we created set out to accomplish the tasks of keeping track of employees, staff roles, customer information, different menus, menu items and reservations. This will any prospective owner to run their restaurant more efficiently. Data from the restaurant will not have to have records written in pen but now have a simple digital way of keeping their records. We set out to create a user-friendly software that implements the restuarants data. The restaurants database will collect all relevant relations to between different data. It was important to us to create a database that would keep track of all the different “states” the restaurant undergoes when it comes to different occurrences the restaurant may go through. Such occurrences may include: employee’s income, number of customers, menu items, number of employees, etc. We wanted to easily be able to update the information if an employee gets fired or moves to a different house with a different phone number.

In summary we set out to create a simple, functional, and intuitive database that would allow a restaurant to easily store and dynamically update vital restaurant information.

We accomplished these goals in the following ways:

1. We constructed all the necessary diagrams and relational tables to ensure relational integrity.
2. We implemented tables that correlate to our goal of having entities for Employee, Reservation, Staff Role, Customer, Menu\_Items, and Menu.
3. We tested the integrity of the database by inserting values that a prospective restaurant might enter.(The owner/manager would enter data in a more simple way but the same ideas apply)
4. We created an attractive and user friendly web page to allow for simple entry of data. In addition, you are able to view data from the database.

Overall, we feel that we accomplished our main goals in creating a database that would allow for a restaurant owner/manager to store and update data relating to his/her establishment.

References

<http://css-snippets.com/simple-horizontal-navigation/>

<http://mrbool.com/how-to-create-menu-with-submenu-using-css-html/26146>

<http://www.w3schools.com/cssref/tryit.asp?filename=trycss_zindex>

Used building blocks from <http://www.w3schools.com/>

**QUERIES**

**Joe’s Queries:**

1. SELECT customerFname, customerLname, COUNT(\*)

FROM Customer, Reservation

WHERE Customer.customerID = Reservation.customerID

GROUP BY customerFname ASC

|  |  |  |
| --- | --- | --- |
| **customerFname** | **customerLname** | **COUNT(\*)** |
| Benjarvus | Elliot | 1 |
| Brenda | Wilson | 1 |
| Darth | Martin | 2 |
| Gene | Newton | 2 |
| Jack | Smith | 1 |
| Jane | Wall | 2 |
| Jimmy | Red | 1 |
| Martha | Dingle | 2 |
| Moona | Bleem | 1 |
|  |  |  |

2) SELECT menuItemName, menuType, price

FROM MenuItem

WHERE menuType = "Breakfast" AND price <= 5.00

GROUP BY price ASC

|  |  |  |
| --- | --- | --- |
| **menuItemName** | **menuType** | **price** |
| Jelly Toast | Breakfast [->] | 2.5 |
| Mac n Charlies Pancakes | Breakfast [->] | 3.99 |
| Chocolate Chip Pancakes | Breakfast [->] | 4.99 |

3) SELECT employeeFname, employeeLname, COUNT(\*)

FROM Employee, StaffRole

WHERE Employee.roleID = StaffRole.roleID AND salary > 40000

|  |  |  |
| --- | --- | --- |
| **employeeFname** | **employeeLname** | **COUNT(\*)** |
| Marin | Rosendo | 1 |

4) SELECT partySize, reservationID, date, time

FROM Reservation

GROUP BY partySize ASC

|  |  |  |  |
| --- | --- | --- | --- |
| **partySize** | **reservationID** | **date** | **time** |
| 2 | 10 | 2015-06-18 | 05:34:54 |
| 3 | 3 | 2015-12-31 | 05:16:54 |
| 14 | 4 | 2015-11-09 | 09:34:54 |
| 15 | 2 | 2015-09-22 | 03:59:12 |
| 18 | 5 | 2015-01-07 | 03:34:54 |
| 20 | 1 | 2015-07-21 | 03:34:54 |
| 24 | 15 | 2015-11-07 | 09:15:12 |
| 32 | 8 | 2015-04-23 | 04:59:12 |
| 45 | 11 | 2015-07-19 | 02:34:54 |
| 99 | 6 | 2015-02-08 | 08:15:12 |

5) SELECT roleID, section

FROM StaffRole

WHERE roleID = "Cook" and section = "Kitchen"

|  |  |
| --- | --- |
| **roleID** | **section** |
| Cook | Kitchen |

**Alex’s Queries**

**SELECT** reservationID, customerID, date, time

**FROM** Reservation

**WHERE** employeeID = 7;

|  |  |  |  |
| --- | --- | --- | --- |
| **reservationID** | **customerID** | **date** | **time** |
| 14 | 4321abc [->] | 2015-09-30 | 02:34:54 |
| 2 | 6969abc [->] | 2015-09-22 | 03:59:12 |
| 6 | 3423ala [->] | 2015-02-08 | 08:15:12 |
| 7 | 1209tot [->] | 2015-03-12 | 03:34:54 |

**SELECT** reservationID, customerID, date, time

**FROM** Reservation

**WHERE** partySize > 20;

|  |  |  |  |
| --- | --- | --- | --- |
| **reservationID** | **customerID** | **date** | **time** |
| 11 | 1234abc [->] | 2015-07-19 | 02:34:54 |
| 14 | 4321abc [->] | 2015-09-30 | 02:34:54 |
| 15 | 8888auu [->] | 2015-11-07 | 09:15:12 |
| 6 | 3423ala [->] | 2015-02-08 | 08:15:12 |
| 8 | 0932poo [->] | 2015-04-23 | 04:59:12 |

**SELECT** MenuItem.menuType, AVG(Price)

**FROM** MenuItem

**GROUP BY** MenuItem.menuType;

|  |  |
| --- | --- |
| **menuType** | **AVG(Price)** |
| Breakfast [->] | 5.92 |
| Dessert [->] | 4.16 |
| Dinner [->] | 9.53888888888889 |
| Drink [->] | 1.82666666666667 |
| Kids [->] | 6.16 |
| Lunch [->] | 6.55375 |

**Giao’s Queries**

**SELECT** employeeFName, employeeLName

**FROM** Employee, Reservation

**WHERE** Reservation.employeeID = Employee.employeeID;

|  |  |
| --- | --- |
| Smithy | Albert |
| Caroline | Greene |
| Katey | Hicks |

**SELECT** avg(Salary), section

**FROM**  StaffRole, Employee

**WHERE** Employee.roleID = StaffRole.roleID

**GROUP** BY section;

|  |  |
| --- | --- |
| [**avg(Salary)**](https://cs.appstate.edu/phpmyadmin/sql.php?db=3430-s15-t6&table=StaffRole&sql_query=SELECT+avg%28Salary%29%2C+section%0AFROM++StaffRole%2C+Employee%0AWHERE+Employee.roleID+%3D+StaffRole.roleID%0AGROUP+BY+section+ORDER+BY+avg%28Salary%29+ASC&session_max_rows=30&token=c9bdaf976b33e4d1ecb40792589acd9e) | [**section**](https://cs.appstate.edu/phpmyadmin/sql.php?db=3430-s15-t6&table=StaffRole&sql_query=SELECT+avg%28Salary%29%2C+section%0AFROM++StaffRole%2C+Employee%0AWHERE+Employee.roleID+%3D+StaffRole.roleID%0AGROUP+BY+section+ORDER+BY+%60StaffRole%60.%60section%60+ASC&session_max_rows=30&token=c9bdaf976b33e4d1ecb40792589acd9e) |
| 24950 | Dining Room |
| 20650 | Front |
| 29350 | Kitchen |
| 25000 | Restroom |

**SELECT** count(\*), employeeFName, employeeLName

**FROM** Employee

**WHERE** sex = 'M' AND salary > 30000;

|  |  |  |
| --- | --- | --- |
| **Count(\*)** | **employeeFName** | **employeeLName** |
| 1 | Marin | Rosendo |

**SELECT** menuItemName

**FROM**  MenuItem

**WHERE** price > 5.00 AND MenuType = 'Lunch';

|  |
| --- |
| **menuItemName** |
| Cheeseburger |
| Bacon Cheeseburger |
| Mushroom Swiss Burger |
| Garden Burger |
| Mac n Charlies Pizza |

**SELECT** MenuType, avg(price)

**FROM**  MenuItem

**GROUP** BY menuType;

|  |  |
| --- | --- |
| [MenuType](https://cs.appstate.edu/phpmyadmin/sql.php?db=3430-s15-t6&table=MenuItem&sql_query=SELECT+MenuType%2C+avg%28price%29%0AFROM++MenuItem%0AGROUP+BY+menuType+ORDER+BY+%60MenuItem%60.%60MenuType%60+ASC&session_max_rows=30&token=c9bdaf976b33e4d1ecb40792589acd9e) | [avg(price)](https://cs.appstate.edu/phpmyadmin/sql.php?db=3430-s15-t6&table=MenuItem&sql_query=SELECT+MenuType%2C+avg%28price%29%0AFROM++MenuItem%0AGROUP+BY+menuType+ORDER+BY+avg%28price%29+ASC&session_max_rows=30&token=c9bdaf976b33e4d1ecb40792589acd9e) |
| Breakfast | 5.92 |
| Dessert | 3.99 |
| Dinner | 8.9.5388888888889 |
| Drink | 1.82666666666667 |
| Kids | 6.16 |
| Lunch | 6.55375 |

**Jonathan’s Queries**

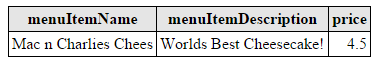
SELECT menuItemName, menuItemDescription, price

FROM ‘MenuItem’

WHERE menuItemDescription LIKE “%!%”

AND menuItemDescription LIKE “%Cheese%”

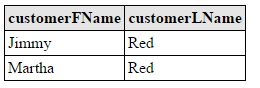
AND price < 5.00



**SELECT** customerFName, customerLName

**FROM** ‘Customer’

**WHERE** customerLName = "Red"



**SELECT** customerFName, customerLName

**FROM** Customer

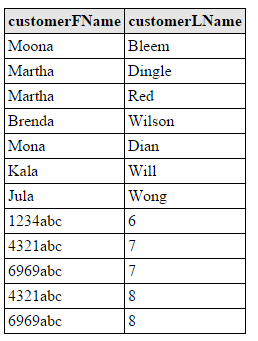
**WHERE** customerFName LIKE "%a"

**UNION**

**SELECT** customerID, employeeID

**FROM** Reservation

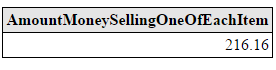
**WHERE** customerID LIKE "%bc%"



SELECT SUM(price)

AS AmountMoneySellingOneOfEachItem

FROM MenuItem ;



SELECT \*

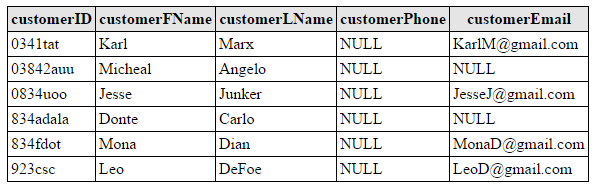
FROM Customer

WHERE customerID

IN (SELECT customerID

FROM Customer

WHERE customerPhone LIKE "NULL")



**Summary**

The DBMS we have created will allow a restaurant to keep track of its employees’: first names, last names, SSNs, sexes, date of births, salaries, roles/jobs, phone numbers, addresses, and unique employee IDs; as well as its customers’: first names, last names, phone numbers, email addresses, and unique customer IDs. The DBMS will also allow a restaurant to keep track of reservations, storing the date, time, and party size of each reservation, as well as the ID of the customer who made the reservation and the ID of the employee who approved the reservation. It will also help keep track of each reservation by storing a unique reservation ID every time a reservation is made. Finally, the DBMS will help manage all of the restaurant’s different menus, storing the name, description and price of each menu item for the different menu types, while keeping track of the menu items by assigning them a unique menu item ID. We have also created a webpage where customers can make reservations.

**Manual: Navigation of the Website**

The home page of our website, <http://student.cs.appstate.edu/3430/151/team6/Project2/site.html>, has six navigation buttons located on the top of the page. In addition, there is a title heading for the restaurant’s name and a background image. The site.html, sets the Home view active and has other buttons for “Add”, “View”, “Contact”, and “About Us”. The file, site.html, imports a datastyles.css file, which includes all of the fancy styles and navigation for sub-menus. Each sub-menu on the homepage represents a class, each linking to a php or html file. When the user is on the homepage, they are able to add a reservation time, if they wish. The customer should go to the Contact page for the phone number in order to reach Mac n’ Charlie’s Restaurant to call in advance to book a reservation time. After the call, the customer should enter the data for the desired reservation time along with unique identification numbers. Every php file has a simple query that displays the data on the html page. This is a very simple website to navigate. The purpose of our website is to demonstrate our Restaurant's collected data on a user-friendly website.