

# CP363: Databases I

## Final Project

Group #18

CP363, WLU, 2022

Instructor: Syed Nasir Danial

Due: Friday, March 25th, 2022

Nishant Tewari

190684430

[tewa4430@mylaurier.ca](mailto:tewa4430@mylaurier.ca)

Esha Panchal

190682410

[panc2410@mylaurier.ca](mailto:panc2410@mylaurier.ca)

Kelvin Kellner

190668940

[kell8940@mylaurier.ca](mailto:kell8940@mylaurier.ca)

Chaitanya Bhavsar

190427300

[bhav7300@mylaurier.ca](mailto:bhav7300@mylaurier.ca)

Dhari Gandhi

190500730

[gand0730@mylaurier.ca](mailto:gand0730@mylaurier.ca)

Jiten Aylani

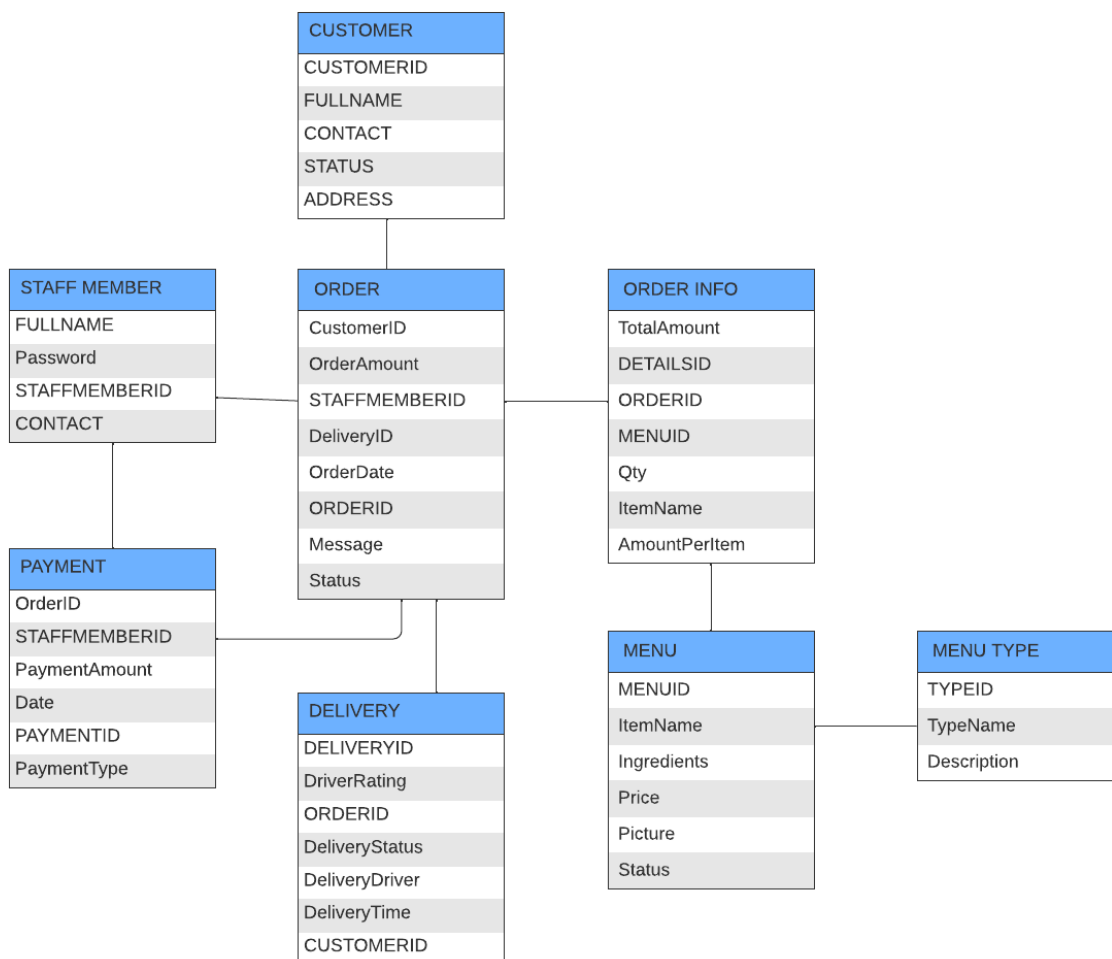
190469460

[ayla9460@mylaurier.c](mailto:ayla9460@mylaurier.ca)

## Problem Definition

For today's generation, the Food Delivery management system is usually a mandatory database system. Many students prefer food delivery since it saves them time and effort when it comes to meal preparation. One of the reasons for using the food delivery management system for database development is because of this. This database management system is essential for businesses and retailers that provide food delivery services, as it aids in the understanding of all aspects of data administration in the service industry. For restaurant employees, the system would provide managerial functions. The food delivery DBMS has the potential to have a significant impact on the industry. Because food delivery is one of the fastest growing businesses in the world, this system can benefit all users. This approach will benefit restaurants by making it easier to examine data about the most popular, least popular, and most consistent menu items, as well as provide feedback to management.

## Project ERD



## Achieved Normalization

### Tables

#### Customer

CUSTOMERID	FULLNAME	CONTACT	STATUS	ADDRESS

The achieved normalization level is the second normal form as all non-key columns of tables are dependent on the Primary Key (CUSTOMERID) and all the partial dependencies are removed.

#### Staff Member

STAFFMEMBERID	FULLNAME	CONTACT	PASSWORD

The achieved normalization level is the second normal form as all non-key columns of tables are dependent on the Primary Key (STAFFMEMBERID) and all the partial dependencies are removed.

#### Order

CUSTOMER ID	ORDERAMOUNT	STAFFMEMBERID	DELIVERYID	ORDERDATE	ORDERID	MESSAGE	STATUS

The achieved normalization level is the second normal form as all non-key columns of tables are dependent on the Primary Key (ORDERID) and all the partial dependencies are removed.

#### Order Info

TOTALAMOUNT	DETAILSID	MENUID	QTY	ITEMNAME	AMOUNTPERITEM

The achieved normalization level is the second normal form as all non-key columns of tables are dependent on the Primary Key (ORDERINFOID) and all the partial dependencies are removed.

### Menu

MENUID	ITEMNAME	INGREDIENTS	PRICE	PICTURE	STATUS

The achieved normalization level is the second normal form as all non-key columns of tables are dependent on the Primary Key (MENUID) and all the partial dependencies are removed and another table (Menu Type) is created to remove duplicates.

### Menu Type

TYPEID	TYPENAME	DESCRIPTION

The achieved normalization level is the second normal form as all non-key columns of tables are dependent on the Primary Key (TYPEID) and all the partial dependencies are removed.

### Delivery

DELIVERY ID	DRIVERRATING	ORDERID	DELIVERYSTATUS	DELIVERYDRIVER	DELIVERYTIME	CUSTOMERID

The achieved normalization level is the second normal form as all non-key columns of tables are dependent on the Primary Key (DELIVERYID) and all the partial dependencies are removed.

### Payment

ORDERID	STAFFMEMBERID	PAYMENTAMOUNT	DATE	PAYMENTID	PAYMENTTYPE

The achieved normalization level is the second normal form as all non-key columns of tables are dependent on the Primary Key (PAYMENTID) and all the partial dependencies are removed.

### Anomalies

From what we can see there are no insert or update anomalies. As insert anomalies are dependent on restrictions when you are unable to add data to the database due to absence of other data. And update anomalies consist of data inconsistencies that result from data redundancy and partial updates. Our database is not connected like that, which provides that there are no anomalies.

## SQL Database Implementation

A version of the Database has been implemented using Microsoft SQL. The process is completed using a single SQL code script, however this code could be broken into multiple functions or made into an API or piece of software to enable an interactive Graphic User-Interface (GUI) if needed in future versions of the DBMS. The accompanying SQL script and Microsoft SQL .BAK file have been provided along with this document submission.

The code is made up of a few important sections:

- 1) Delete all foreign key relationships and drop all tables - this allows you to run the script to “start clean” for the database, and can be moved to a separate script if not needed
- 2) Create all tables and primary key relationships
- 3) Create all foreign key relationships
- 4) Insert test/sample data into all tables

After running the script, all tables and PK/FK relationships will be created with sample data provided, the tables will all look something like this:

Column Name	Data Ty	Column Name	Data Type
CustomerID	int	OrderID	int
FullName	varchar(40)	OrderDate	datetime
Address	varchar(60)	CustomerID	int
City	varchar(15)	PaymentID	int
Region	varchar(15)	StaffMemberID	int
PostalCode	varchar(10)	DeliveryID	int
Country	varchar(15)	OrderAmount	decimal(5, 2)
Email	varchar(60)	Status	varchar(40)
Phone	varchar(24)	InstructionsComment	varchar(160)

Please view the code, and I encourage you to import the .BAK file to Microsoft SQL yourself.

## Future Recommendations

While this implementation is a great start, there is certainly room for improvement with this database management system. We believe that we can make this project more feasible in the future by adding a UI for the Restaurant staff in order to efficiently use the DBMS. Another upgrade could be allowing customer reviews for menu items, resulting in an additional entity type in the ERD. These improvements would allow the model to drift from restaurant-focused to restaurant-and-customer-focused which would allow it to play a vital role in the food delivery management space, and ultimately, give a better user-experience for customers and restaurants.