CSU 34041 SQL Project

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Section A

1 Application Description

I chose a pet grooming store where trimmers can cut customers' pets' hair. The database consists of 7 tables, Customer, Pet, Reservation, Store, Staff, Grooming and Payment.

Customer table has 5 attributes, Customer_ID as a primary key, First name and Last name as customer's name and Email address and phone number both of which should be unique to avoid any confusion such as reservation mistakes.

Pet table has 6 attributes, Pet ID as a primary key which should be referenced by customer ID as it is necessary to avoid taking care of wrong pets, Name as a pet's name, Breed, Species and Gender for identifying animals' habits and ideal treatment for them, and Birthday to know how old the animals are to help decide how to treat them.

Reservation table has 5 attributes, Reservation ID as a primary key which can be connected to Customer ID, Date and Time for customer's bookings, phone number which enables the staff in the store to contact with customers if they want to cancel the reservation, and Service refers to the service type the pets will take, such as Trim course or Trim and shampoo course.

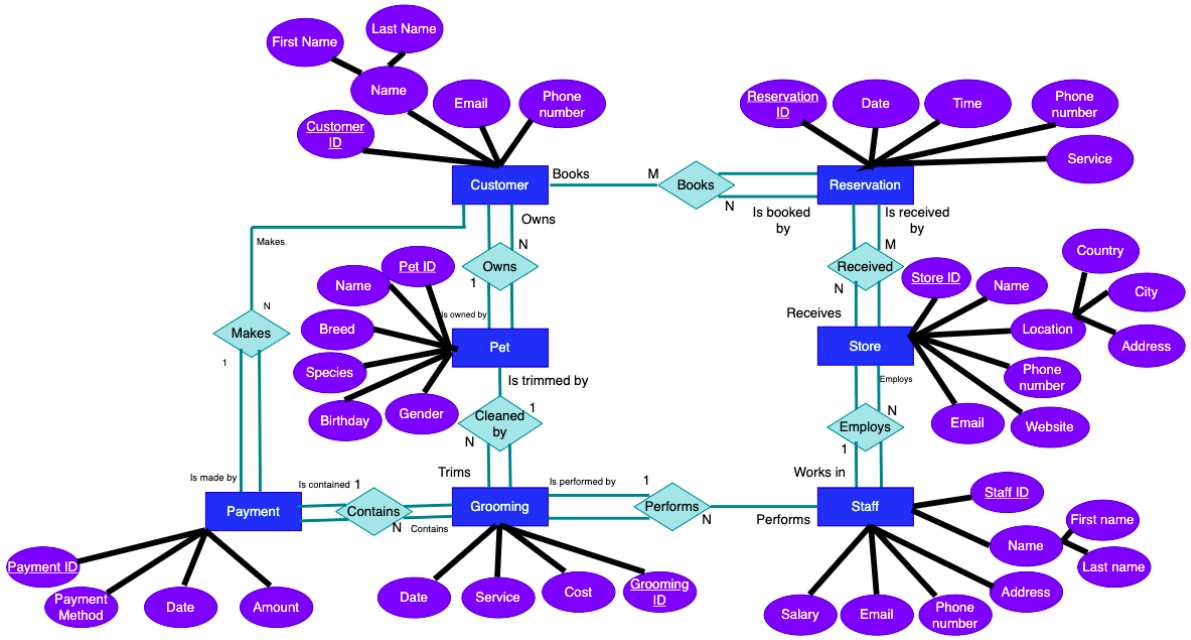
Store table has 8 attributes. Store ID is a primary key to identify the store, Name is store's name, Country, City and Address which refers to where the store is located, and Phone number, Website and Email address which are for customers to contact the store.

Staff table has 7 attributes to identify the particular staff member. Staff ID is the primary key as the store table refers to it, First name and Last name refers to the staffs' name, and address, phone number, email address and salary should be used to identify a certain member. Staff table can also be used to know who is responsible for particular grooming.

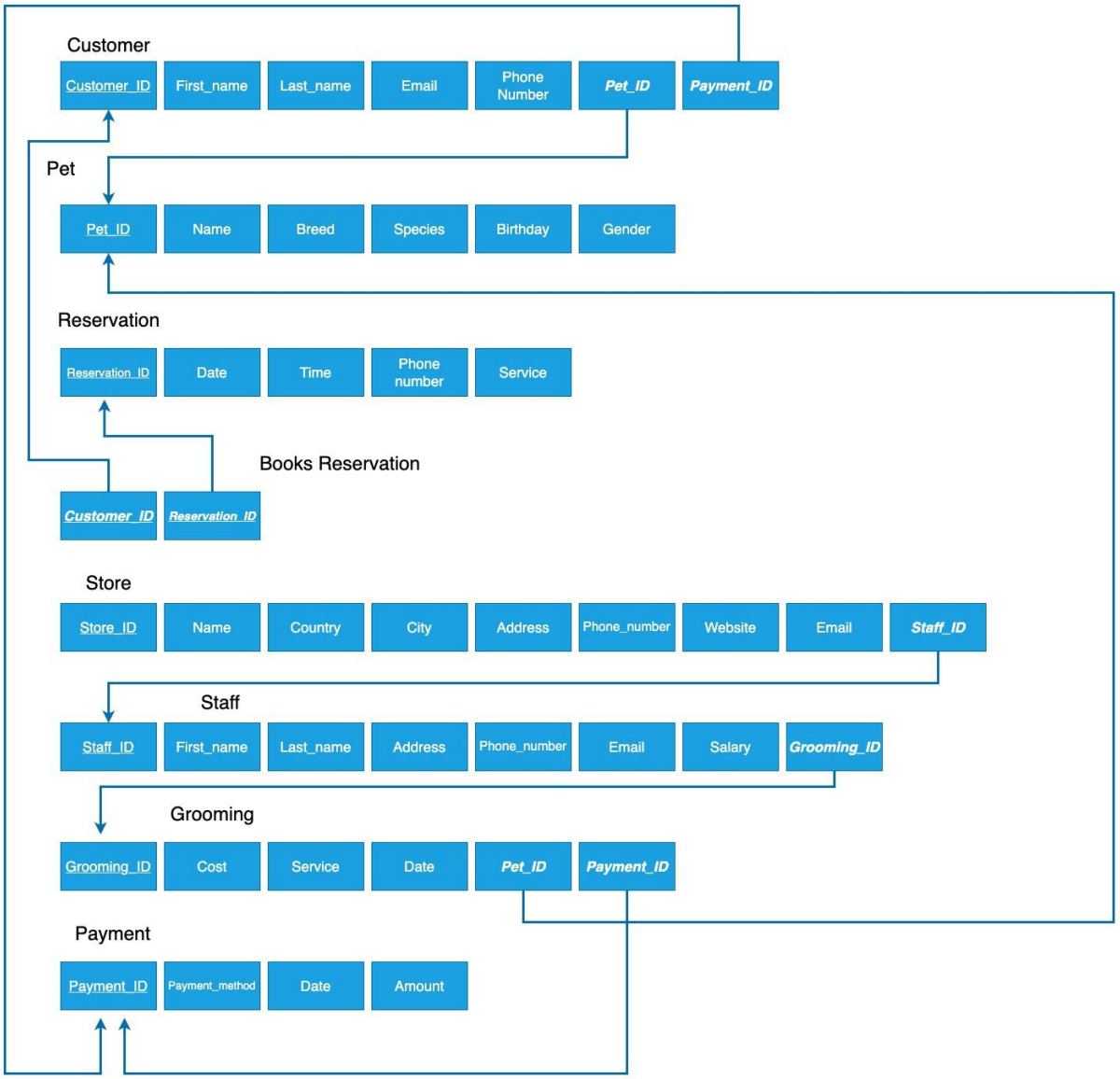
Grooming table has 4 attributes, Grooming ID for primary key as it is referred by the staff table, Cost which means the price for pet grooming, Service refers to the service type the pets will take, and the date is the date when the pet takes the service.

Payment table has 4 attributes, Payment ID is a primary key as it is referred by the customer table and the grooming table, Payment methods which refer to how customers make payment, Date means when the customer finishes payment transaction and amount which means the price of the service.

2 Entity Relationship Diagram



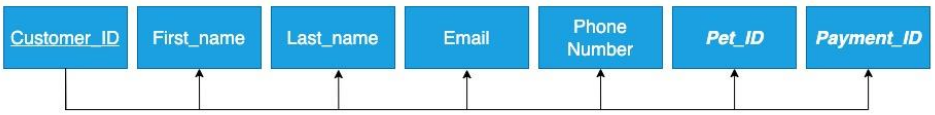
3 Mapping to Relational Schema



Primary key has underline.
Foregin key is written in bold and Italic font.

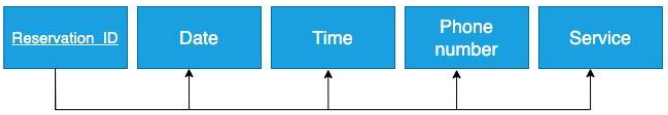
4 Functional Dependency Diagrams

Customer

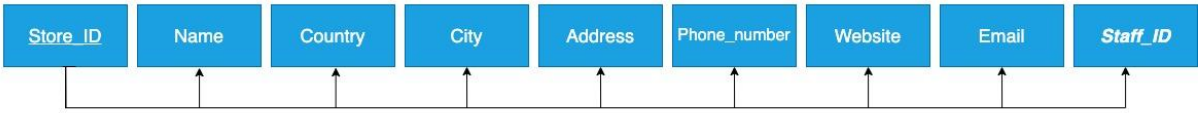


Pet

Reservation



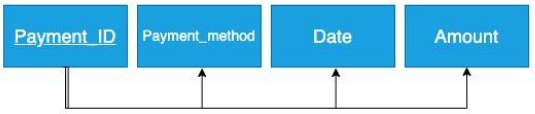
Store



Staff

Grooming

Payment



Section B

5. Explanation of one the SQL Code for Creating one of your database Tables (including any constraints)

```
DROP TABLE IF EXISTS `Pet Groomer`.`Customer`;
CREATE TABLE `Pet Groomer`.`Customer` (
  `Customer_id` INT NOT NULL,
  `first_name` VARCHAR(20) NOT NULL,
  `last_name` VARCHAR(20) NOT NULL,
  `email` VARCHAR(45) NOT NULL,
  `phone_number` INT NOT NULL,
  CONSTRAINT UC_Person UNIQUE (email, phone_number),
  PRIMARY KEY (`Customer_id`))
  ;

INSERT INTO  `Pet Groomer`.`Customer`(Customer_id, first_name, last_name, email, phone_number)
VALUES (1, 'Geoge', 'Washington', 'Wasington@gmail.com', '003302120');
INSERT INTO `Pet Groomer`.`Customer` (Customer_id, first_name, last_name, email, phone_number)
VALUES (2, 'John', 'Adams', 'Adams@gmail.com', '003302122');
INSERT INTO `Pet Groomer`.`Customer` (Customer_id, first_name, last_name, email, phone_number)
VALUES (3, 'Thomas', 'Jefferson', 'Jefferson@gmail.com', '003302121');
```

It created a Customer table which has Customer_id, first_name, last_name, email and phone_number. As constraints, every information should not be NULL and especially email and phone_number should be unique.

6. Explanation and SQL Code for any Altering tables

```
ALTER TABLE `Pet Groomer`.`Customer`
MODIFY `Customer_id` INT NOT NULL AUTO_INCREMENT;
```

As above, I added AUTO_INCREMENT to Customer_id in the customer table because when retrieving information from the database with use of Joins, MySQL gives an error saying Error Code: 1062. Duplicate entry '1' for key 'customer.PRIMARY'. Therefore, it is needed to add AUTO_INCREMENT in Customer_id to avoid the error.

7. Explanation and SQL Code for and Creation of Views.

I made a table where we can see the customer table.

8. Explanation and example SQL Code for retrieving information from the database

```
SELECT
r.Reservation_id,
r.Date,
r.Time,
r.Service,
c.first_name,
c.last_name,
c.phone_number
FROM Reservation r
JOIN Customer c
    ON c.phone_number = r.phone_number
```

It created a reservation table which contains Reservation_id, Date, Time, Service, customers' names and phone numbers as below. Initially, the reservation table does not have customers' names, so it calls them from the customer table, where the phone number matches. Since only a unique phone number can be input in the customer table, there is no mistake between phone number and customer's name.

	Reservation_id	Date	Time	Service	first_name	last_name	phone_number
▶	1	2022-12-12	12:30:00	Trim	Geoge	Washington	3302120
	2	2022-12-13	11:30:00	Trim & Shampoo	John	Adams	3302122