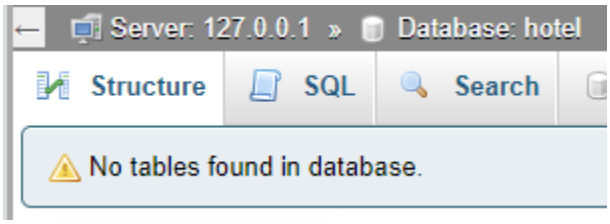
Workshop Questions – Week 4

a. Create a Database name **Hotel**.

```
CREATE DATABASE Hotel;
```



b. Connect to a Database. (This means you need to connect to the database hotel).

c. Create a table name **HotelTypes** (You need to use the **primary key** for id).

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0002 seconds.)

```
CREATE TABLE HotelTypes(HotelType_ID varchar(10) NOT NULL, Hotel_Type varchar(25), HotelType_Star varchar(10), PRIMARY KEY(HotelType_ID));
```

HotelType_ID	Hotel_Type	HotelType_Star

d. Create more tables like **owners**, and **hotels.**

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0003 seconds.)

```
CREATE TABLE Owners(Owner_ID varchar(10), Owner_name varchar(50), Owner_Contact varchar(25));
```

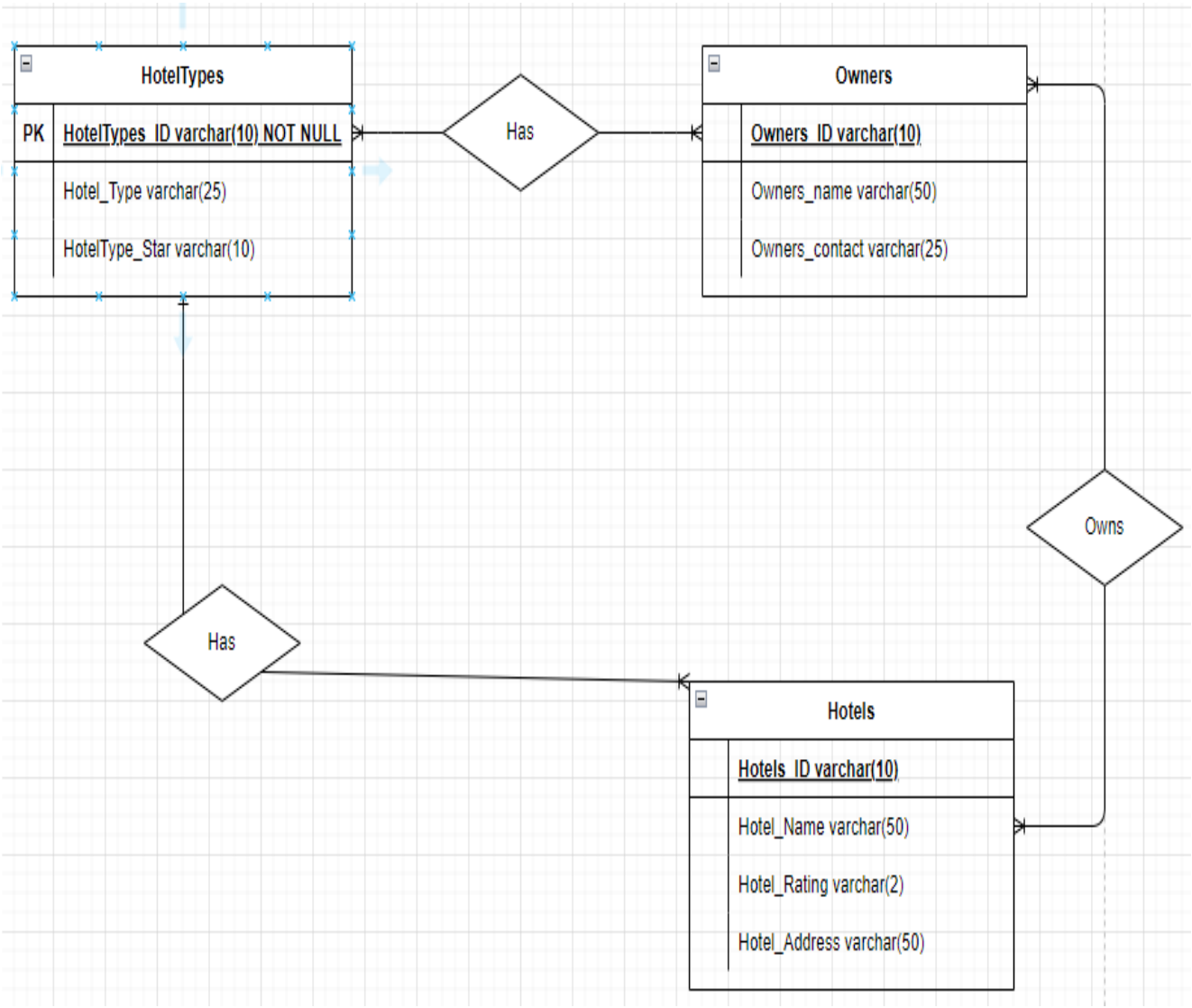
Owner_ID	Owner_name	Owner_Contact

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0002 seconds.)

```
CREATE TABLE Hotel(Hotel_ID varchar(10), Hotel_Name varchar(50), Hotel_Rating varchar(2), Hotel_Address varchar(50));
```

Hotel_ID	Hotel_Name	Hotel_Rating	Hotel_Address

e. Draw an **entity-relationship diagram** between the three tables.



f. Insert any five values in hotelTypes, owners but insert 10 values in hotels table, each table there must be 2 null values.

hotelTypes

5 rows inserted. (Query took 0.0007 seconds.)

```
INSERT INTO hoteltypes(HotelType_ID, Hotel_Type, HotelType_Star) VALUES ("0001","Resort", NULL), ("0002", "Motel", "1"), ("0003", NULL, "5"), ("0004", "Inn", "2"),("0005", "Suite", "4");
```

	HotelType_ID	Hotel_Type	HotelType_Star
Edit Copy Delete	0001	Resort	*NULL*
Edit Copy Delete	0002	Motel	1
Edit Copy Delete	0003	*NULL*	5
Edit Copy Delete	0004	Inn	2
Edit Copy Delete	0005	Suite	4

Owners

5 rows inserted. (Query took 0.0012 seconds.)

```
INSERT INTO owners(Owner_ID, Owner_name, Owner_Contact) VALUES ("0001", "Hoosier Daddy", NULL),("0002", "Real Name Hidden", "9884276593"),("0003", "Babushka", NULL),("0004", "Bread Pitt", "9886754321"),("0005"," Bond James","98007007007");
```

Owner_ID	Owner_name	Owner_Contact
0001	Hoosier Daddy	*NULL*
0002	Real Name Hidden	9884276593
0003	Babushka	*NULL*
0004	Bread Pitt	9886754321
0005	Bond James	98007007007

Hotel

10 rows inserted. (Query took 0.0006 seconds.)

```
INSERT INTO hotel(Hotel_ID,Hotel_Name,Hotel_Rating,Hotel_Address)VALUES("0001","Hyatt Place Kathmandu","1","Red Cross Road"),("0002","Baber Mahal Vilas The Boutique Hotel","2","Tanka Prasad Ghumti Sadak"),("0003","Sarangkot Mountain Lodge",NULL,"Sarangkot Road"),("0004","Kathmandu Marriott Hotel","4","Manakamana Marg"),("0005","The Soaltee Kathmandu","5","Tahacha"),("0006","Hyatt Regency Kathmandu","6",NULL),("0007","Hotel Mystic Mountain","7","Paryatan Marga Nagarkot"),("0008","Fish Tail Lodge","8","Lakeside Street No. 2 "),("0009","The Dwarika's Hotel","9","Battisputali Rd"),("0010","Hotel Yak & Yeti","10","Durbar Marg");
```

Hotel_ID	Hotel_Name	Hotel_Rating	Hotel_Address
0001	Hyatt Place Kathmandu	1	Red Cross Road
0002	Baber Mahal Vilas The Boutique Hotel	2	Tanka Prasad Ghumti Sadak
0003	Sarangkot Mountain Lodge	*NULL*	Sarangkot Road
0004	Kathmandu Marriott Hotel	4	Manakamana Marg
0005	The Soaltee Kathmandu	5	Tahacha
0006	Hyatt Regency Kathmandu	6	*NULL*
0007	Hotel Mystic Mountain	7	Paryatan Marga Nagarkot
0008	Fish Tail Lodge	8	Lakeside Street No. 2
0009	The Dwarika's Hotel	9	Battisputali Rd
0010	Hotel Yak & Yeti	10	Durbar Marg

g. Check your data in all your tables.

Hotel_ID	Hotel_Name	Hotel_Rating	Hotel_Address
0001	Hyatt Place Kathmandu	1	Red Cross Road
0002	Baber Mahal Vilas The Boutique Hotel	2	Tanka Prasad Ghumti Sadak
0003	Sarangkot Mountain Lodge	*NULL*	Sarangkot Road
0004	Kathmandu Marriott Hotel	4	Manakamana Marg
0005	The Soaltee Kathmandu	5	Tahacha
0006	Hyatt Regency Kathmandu	6	*NULL*
0007	Hotel Mystic Mountain	7	Paryatan Marga Nagarkot
0008	Fish Tail Lodge	8	Lakeside Street No. 2
0009	The Dwarika's Hotel	9	Battisputali Rd
0010	Hotel Yak & Yeti	10	Durbar Marg

Showing rows 0 - 4 (5 total, Query took 0.0002 seconds.)

```
SELECT * FROM `hoteltypes`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 Filter rows: Search this table

Extra options

	HotelType_ID	Hotel_Type	HotelType_Star
Edit Copy Delete	0001	Resort	*NULL*
Edit Copy Delete	0002	Motel	1
Edit Copy Delete	0003	*NULL*	5
Edit Copy Delete	0004	Inn	2
Edit Copy Delete	0005	Suite	4

Showing rows 0 - 4 (5 total, Query took 0.0002 seconds.)

```
SELECT * FROM `owners`
```

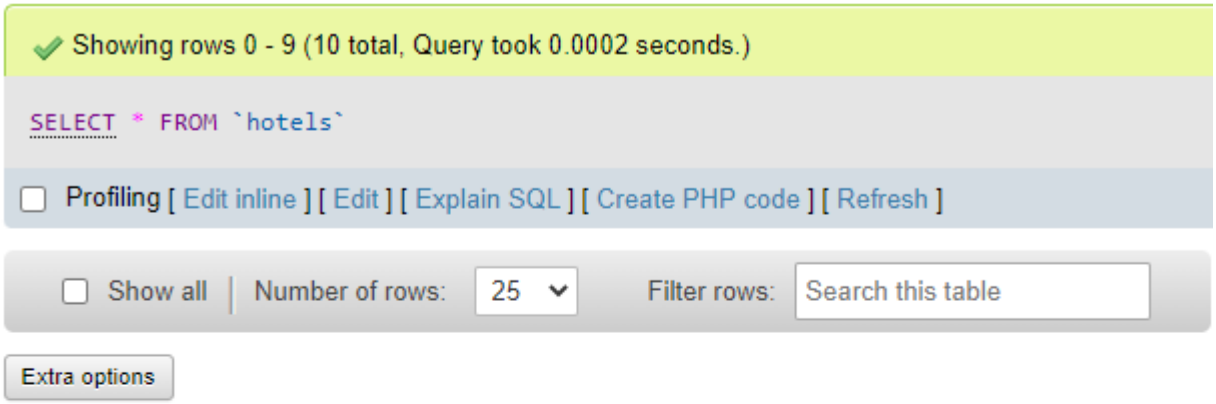
Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 Filter rows: Search this table

Extra options

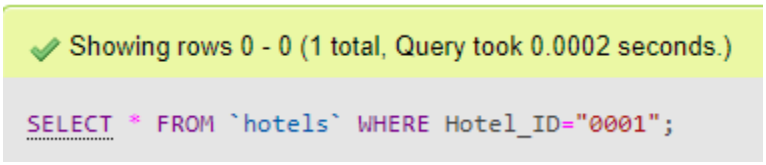
Owner_ID	Owner_name	Owner_Contact
0001	Hoosier Daddy	*NULL*
0002	Real Name Hidden	9884276593
0003	Babushka	*NULL*
0004	Bread Pitt	9886754321
0005	Bond James	98007007007

h. Select only from the hotels table.



Hotel_ID	Hotel_Name	Hotel_Rating	Hotel_Address
0001	Hyatt Place Kathmandu	1	Red Cross Road
0002	Baber Mahal Vilas The Boutique Hotel	2	Tanka Prasad Ghumti Sadak
0003	Sarangkot Mountain Lodge	*NULL*	Sarangkot Road
0004	Kathmandu Marriott Hotel	4	Manakamana Marg
0005	The Soaltee Kathmandu	5	Tahacha
0006	Hyatt Regency Kathmandu	6	*NULL*
0007	Hotel Mystic Mountain	7	Paryatan Marga Nagarkot
0008	Fish Tail Lodge	8	Lakeside Street No. 2
0009	The Dwarika's Hotel	9	Battisputali Rd
0010	Hotel Yak & Yeti	10	Durbar Marg

i. Perform a basic select command from the hotels table.



Hotel_ID	Hotel_Name	Hotel_Rating	Hotel_Address
0001	Hyatt Place Kathmandu	1	Red Cross Road

j. Sort hotels table in ASC and DESC order.

Showing rows 0 - 9 (10 total, Query took 0.0003 seconds.) [Hotel_Address: ... - **TANKA PRASAD GHUMTI SADAK...**]

```
SELECT * FROM hotels ORDER BY Hotel_Address ASC;
```

Hotel_ID	Hotel_Name	Hotel_Rating	Hotel_Address ▲ 1
0006	Hyatt Regency Kathmandu	6	*NULL*
0009	The Dwarika's Hotel	9	Battisputali Rd
0010	Hotel Yak & Yeti	10	Durbar Marg
0008	Fish Tail Lodge	8	Lakeside Street No. 2
0004	Kathmandu Marriott Hotel	4	Manakamana Marg
0007	Hotel Mystic Mountain	7	Paryatan Marga Nagarkot
0001	Hyatt Place Kathmandu	1	Red Cross Road
0003	Sarangkot Mountain Lodge	*NULL*	Sarangkot Road
0005	The Soaltee Kathmandu	5	Tahacha
0002	Baber Mahal Vilas The Boutique Hotel	2	Tanka Prasad Ghumti Sadak

Showing rows 0 - 9 (10 total, Query took 0.0002 seconds.) [Hotel_Address: **TANKA PRASAD GHUMTI SADAK...** - ...]

```
SELECT * FROM hotels ORDER BY Hotel_Address DESC;
```

Hotel_ID	Hotel_Name	Hotel_Rating	Hotel_Address ▼ 1
0002	Baber Mahal Vilas The Boutique Hotel	2	Tanka Prasad Ghumti Sadak
0005	The Soaltee Kathmandu	5	Tahacha
0003	Sarangkot Mountain Lodge	*NULL*	Sarangkot Road
0001	Hyatt Place Kathmandu	1	Red Cross Road
0007	Hotel Mystic Mountain	7	Paryatan Marga Nagarkot
0004	Kathmandu Marriott Hotel	4	Manakamana Marg
0008	Fish Tail Lodge	8	Lakeside Street No. 2
0010	Hotel Yak & Yeti	10	Durbar Marg
0009	The Dwarika's Hotel	9	Battisputali Rd
0006	Hyatt Regency Kathmandu	6	*NULL*

k. Count the rows from the hotels table.

Your SQL query has been executed successfully.

```
SELECT COUNT(*) FROM hotels;
```

COUNT(*)
10

l. Update the data from the owners table.

1 row affected. (Query took 0.0002 seconds.)

```
UPDATE owners SET Owner_Contact = '9007007007' WHERE Owner_ID = "0005";
```

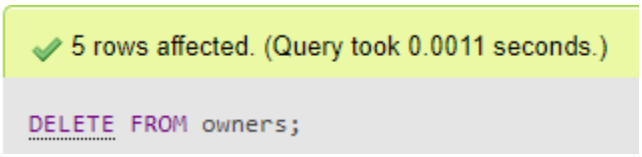
Before:

Owner_ID	Owner_name	Owner_Contact
0001	Hoosier Daddy	*NULL*
0002	Real Name Hidden	9884276593
0003	Babushka	*NULL*
0004	Bread Pitt	9886754321
0005	Bond James	98007007007

After:

Owner_ID	Owner_name	Owner_Contact
0001	Hoosier Daddy	*NULL*
0002	Real Name Hidden	9884276593
0003	Babushka	*NULL*
0004	Bread Pitt	9886754321
0005	Bond James	9007007007

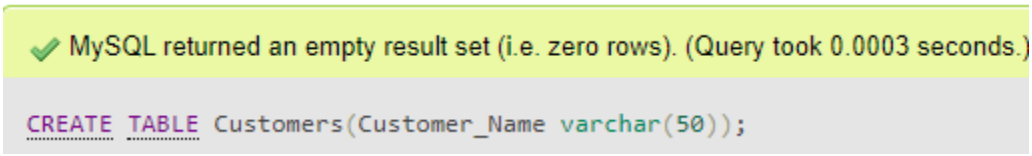
m. Delete data from the owners table.



Owner_ID	Owner_name	Owner_Contact

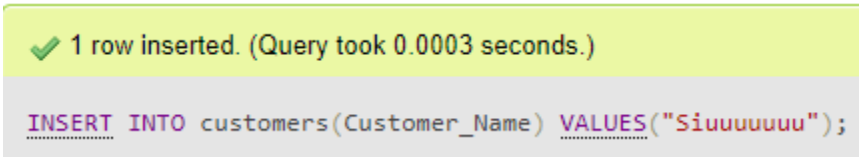
n. Create a table customer and insert one value then drop table customers.

Create:



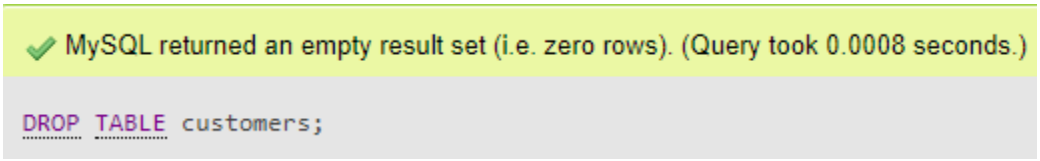
Customer_Name

Insert:



Customer_Name
Siuuuuuuu

Drop:



o. Show the null data from from the table.

Hotels:

Showing rows 0 - 0 (1 total, Query took 0.0001 seconds.)

```
SELECT Hotel_ID,Hotel_Name,Hotel_Rating,Hotel_Address FROM hotels WHERE Hotel_Rating IS NULL;
```

Hotel_ID	Hotel_Name	Hotel_Rating	Hotel_Address
0003	Sarangkot Mountain Lodge	*NULL*	Sarangkot Road

Showing rows 0 - 0 (1 total, Query took 0.0002 seconds.)

```
SELECT Hotel_ID,Hotel_Name,Hotel_Rating,Hotel_Address FROM hotels WHERE Hotel_Address IS NULL;
```

Hotel_ID	Hotel_Name	Hotel_Rating	Hotel_Address
0006	Hyatt Regency Kathmandu	6	*NULL*

HotelTypes:

Showing rows 0 - 0 (1 total, Query took 0.0002 seconds.)

```
SELECT HotelType_ID,Hotel_Type,HotelType_Star FROM hoteltypes WHERE HotelType_Star IS NULL;
```

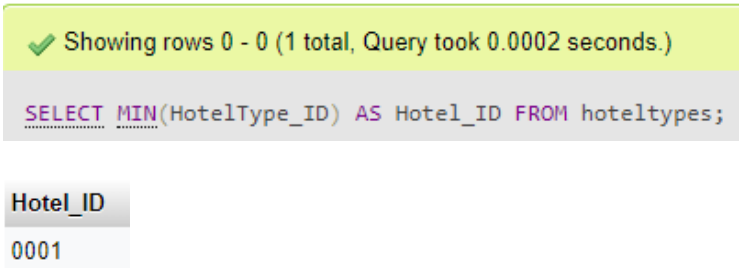
	HotelType_ID	Hotel_Type	HotelType_Star
☐ Edit Copy Delete	0001	Resort	*NULL*

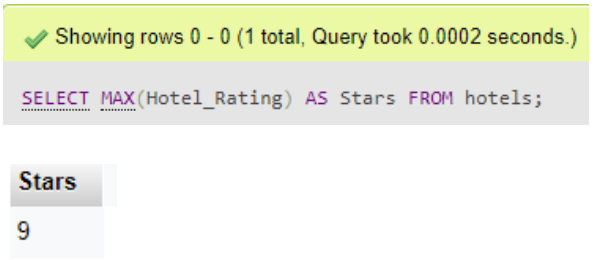
Showing rows 0 - 0 (1 total, Query took 0.0001 seconds.)

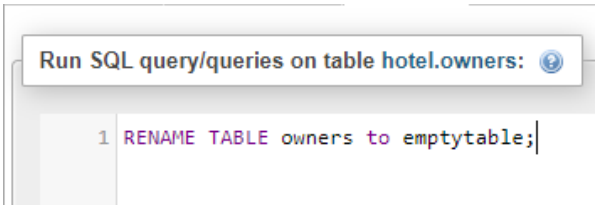
```
SELECT HotelType_ID,Hotel_Type,HotelType_Star FROM hoteltypes WHERE Hotel_Type IS NULL;
```

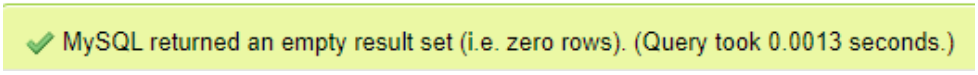
	HotelType_ID	Hotel_Type	HotelType_Star
☐ Edit Copy Delete	0003	*NULL*	5

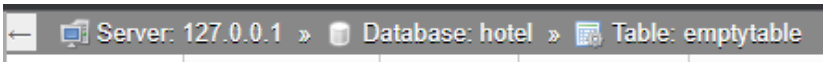
p. Perform your own queries(any three).











Tips:

Provide all the screenshot while performing the above question.

1. **Screenshot of the syntax**
2. **Screenshot of the output.**

1. Difference Between Primary and Foreign Key?

   Primary Key:

   A main key typically emphasizes the table's uniqueness. It guarantees that the value in that particular column is distinct.

   There can be only one primary key per table.

   It does not allow NULL values.

   Foreign Key:

   Typically, a foreign key is utilized to establish a connection between the two tables.

   More than one foreign key is allowed in a table.

   It can also contain NULL values.

2. What can SQL do?

   SQL stands for Structured Query Language. SQL lets you access and manipulate databases. You can construct and alter the schema (structure) of a database system, control access to its data, and query, update, and reorganize data using SQL.

3. Define the categories of Data Manipulation Language.

   Procedural and non-procedural programming, commonly known as declarative programming, are the two main categories in DML.

   Writing a series of instructions for the computer to follow step-by-step in order to complete the work at hand is known as procedural programming.

   Declarative programming is a technique for removing the control flow for logic needed for software to carry out an activity and replacing it with a statement of the task or intended result.

4. What are the data types in SQL?

   SQL Data Type is an attribute that specifies the type of data of any object. In SQL there are three main data types: string, numeric, and date and time.

5. Mention some important SQL commands.
   SELECT - extracts data from a database
   UPDATE - updates data in a database
   DELETE - deletes data from a database
   INSERT INTO - inserts new data into a database
   CREATE DATABASE - creates a new database
   ALTER DATABASE - modifies a database
   CREATE TABLE - creates a new table
   ALTER TABLE - modifies a table
   DROP TABLE - deletes a table

6. Define Super key, Primary key, Candidate key and Alternate Key.
   Super Key: A super key is a group of one or more attributes whose values serve as the sole means by which each record in a relation is identified (table).

   Candidate Key: A super key's subset is known as a candidate key. A single characteristic or the smallest possible set of attributes that uniquely identifies each record in the database is referred to as a candidate key.

   Alternate Key: An alternate key is a potential key for uniquely identifying tuples in a relation but was not selected by the database designer.

7. Explain the terms Data Definition Language, Data Manipulation Language and Data Control Language. As part of your explanation, you should provide knowledge of the use of at least 3 commands for each language using SQL notation.

   Data Definition Language: The structure of database objects in a database can be created and modified using a computer language called a data definition language (DDL). Views, schemas, tables, indexes, and other database objects are among them.

   Eg:

   1) CREATE TABLE Employee (Employee Id INTEGER PRIMARY KEY, First name CHAR (50) NULL, Last name CHAR (75) NOT NULL);

   2) ALTER TABLE Employee ADD PRIMARY KEY (employee_pk);

   3) DROP TABLE Employee;

   Data Manipulation Language: A family of computer languages known as a data manipulation language (DML) includes commands that let users change data in a database. This manipulation entails adding new data to database tables, accessing old data, removing old data, and changing old data.

   Eg:

   1) SELECT * FROM Employee;

   2) INSERT INTO Employee (Address) VALUES (“KATHMANDU”);

   3) DELETE FROM EMPLOYEE WHERE Employee Id =1;

Data Control Language: A Data Control Language is a computer programming language with syntax that is used to manage access to data kept in a database (Authorization). It is a part of Structured Query Language in particular (SQL).

Eg:

1) GRANT Employee to USER1;

2) REVOKE CREATE TABLE FROM Employee;

8. What is Data Modelling?
   To communicate links between data points and structures, data modeling is the process of developing a visual representation of an entire information system or certain components of it. Data models are created accordingly to meet business requirements.

9. Differentiate between Conceptual, Logical and Physical database design.
   Conceptual Database Design:
   The database design process, which includes the steps of requirements collecting and analysis, conceptual modeling, logical database design, and database implementation, includes conceptual database design.

   Logical Database Design:
   A conceptual application domain schema is transformed (or mapped) into a schema for the data model supporting a specific DBMS, such as the relational or object-oriented data model, through the process of logical database design.

   Physical Database Design:
   A representation of a data design that has been implemented—or is intended to be implemented—in a database management system is called a physical data model.

10. Describe:
    - Levels of Abstraction: Data Abstraction refers to the process of hiding irrelevant details from the user. There are three levels of abstraction:
    1. View Level
    2. Conceptual Level
    3. Physical Level

    - Entity: A real-world thing or an object that can be distinguished from other real-world objects constitutes an entity in a database management system (DBMS). A car is an example of an entity.

    - Attributes: Attributes in a relational database are the columns in a table.