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AIM:	<p>To create a database and populate using SQL commands (with constraints):</p> <ul style="list-style-type: none"> • Data Definition Language – Create, Alter, Drop, Rename, Truncate • Constraints – Not Null, Unique Key, Primary Key, Foreign Key, Check, Dropping a Constraint
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Program 1

PROBLEM STATEMENT:	To create a Hotel Database Management System on SQL and populate it using the SQL commands.
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THEORY:	<p>Structured Query Language (SQL), as we all know, is the database language using which we can perform certain operations on the existing database. We can also use this language to create a database. SQL uses certain commands like Create, Drop, Insert, etc. to carry out the required tasks.</p> <p>These SQL commands are mainly categorized into four categories:</p> <ol style="list-style-type: none"> 1. DDL – Data Definition Language 2. DQL – Data Query Language 3. DML – Data Manipulation Language 4. DCL – Data Control Language <p>Though many resources claim there to be another category of SQL clauses TCL – Transaction Control Language.</p> <p>DDL (Data Definition Language):</p> <p>DDL or Data Definition Language consists of the SQL commands that can be used to define the database schema. It simply deals with descriptions of the database schema and is used to create and modify the structure of database objects in the database. DDL is a set of SQL commands used to create, modify, and delete database structures but not data. These commands are normally not used by a general user, who should be accessing the database via an application.</p> <p>List of DDL commands:</p> <ul style="list-style-type: none"> • CREATE: This command is used to create the database or its objects (like table, index, function, views, store procedure, and
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triggers).

- **DROP:** This command is used to delete objects from the database.
- **ALTER:** This is used to alter the structure of the database.
- **TRUNCATE:** This is used to remove all records from a table, including all spaces allocated for the records are removed.
- **RENAME:** This is used to rename an object existing in the database.

1. The SQL CREATE DATABASE Statement:

The CREATE DATABASE statement is used to create a new SQL database.

Syntax:

```
CREATE DATABASE databasename;
```

The SQL CREATE TABLE Statement:

The CREATE TABLE statement is used to create a new table in a database.

Syntax:

```
CREATE TABLE table_name (  
    column1 datatype,  
    column2 datatype,  
    column3 datatype,  
    ....  
);
```

2. The SQL DROP DATABASE Statement:

The DROP DATABASE statement is used to drop an existing SQL database.

Syntax:

```
DROP DATABASE databasename;
```

The SQL DROP TABLE Statement:

The DROP TABLE statement is used to drop an existing table in a database.

Syntax:

DROP TABLE table_name;

3. SQL ALTER TABLE Statement:

The ALTER TABLE statement is used to add, delete, or modify columns in an existing table.

The ALTER TABLE statement is also used to add and drop various constraints on an existing table.

- **ALTER TABLE - ADD Column**

To add a column in a table, use the following syntax:

ALTER TABLE table_name

ADD column_name datatype;

- **ALTER TABLE - DROP COLUMN**

To delete a column in a table, use the following syntax (notice that some database systems don't allow deleting a column):

ALTER TABLE table_name

DROP COLUMN column_name;

- **ALTER TABLE - ALTER/MODIFY COLUMN**

To change the data type of a column in a table, use the following syntax:

ALTER TABLE table_name

MODIFY column_name datatype;

4. SQL TRUNCATE TABLE:

	<p>The TRUNCATE TABLE statement is used to delete the data inside a table, but not the table itself.</p>
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Syntax:

TRUNCATE TABLE table_name;

CODE:

-- Creating the Database

CREATE DATABASE HOTEL;

USE HOTEL;

-- Creating the Table (Hotel)

CREATE TABLE Hotel (

 HotelName varchar(255) NOT NULL,

 ContactNumber int NOT NULL,

 LocationStreetName varchar(255) NOT NULL,

 LocationPincode int NOT NULL,

 LocationCity varchar(255) NOT NULL,

 HotelID int NOT NULL,

 Rating int,

 PRIMARY KEY (HotelID)

);

-- Inserting a Row into Table

INSERT INTO Hotel VALUES('Aparna', 999999999, 'Salisbury Road', 400987, 'Mumbai', 103, 4);

SELECT * FROM Hotel;

-- Alter Table

ALTER TABLE Hotel

ADD HotelEmail varchar(255);

SELECT * FROM Hotel;

-- Creating the Table (Room)

CREATE TABLE Room (

 RoomNumber int,

 RoomAvailability varchar(5) NOT NULL,

 RoomSize varchar(50) NOT NULL,

 RoomType varchar(50) NOT NULL,

 PRIMARY KEY (RoomNumber),

[illegible]

Using Alter, Select command:

- 7 11:49:43 ALTER TABLE Hotel ADD HotelE... 0 row(s) affected Records: 0 Dupli... 0.125 sec
- 8 11:49:43 SELECT * FROM Hotel LIMIT 0, 10... 1 row(s) returned 0.000 sec / 0.000 sec

	HotelName	ContactNumber	LocationStreetName	LocationPincode	LocationCity	HotelID	Rating	HotelEmail
▶	Aparna	999999999	Salisbury Road	400987	Mumbai	103	4	NULL
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Using Create, Insert Into, Select Commands:

- 9 11:50:13 CREATE TABLE Room (RoomN... 0 row(s) affected 0.031 sec
- 10 11:50:50 INSERT INTO Room VALUES(237... 1 row(s) affected 0.047 sec
- 11 11:50:50 INSERT INTO Room VALUES(123... 1 row(s) affected 0.000 sec
- 12 11:50:50 INSERT INTO Room VALUES(420... 1 row(s) affected 0.000 sec
- 13 11:50:50 INSERT INTO Room VALUES(069... 1 row(s) affected 0.015 sec
- 14 11:50:50 INSERT INTO Room VALUES(235... 1 row(s) affected 0.000 sec
- 15 11:50:50 INSERT INTO Room VALUES(666... 1 row(s) affected 0.000 sec
- 16 11:50:50 SELECT * FROM Room LIMIT 0, 1... 6 row(s) returned 0.000 sec / 0.000 sec

	RoomNumber	RoomAvailability	RoomSize	RoomType	HotelID
▶	69	YES	2 persons	Deluxe	103
	123	YES	4 persons	Non-A.C	103
	235	YES	1 person	A.C	103
	237	NO	2 persons	A.C	103
	420	YES	3 persons	A.C	103
	666	YES	3 persons	A.C	103
*	NULL	NULL	NULL	NULL	NULL

Using Truncate, Select command:

- 41 11:55:42 TRUNCATE TABLE Room 0 row(s) affected 0.047 sec
- 42 11:55:42 SELECT * FROM Room LIMIT 0, 1... 0 row(s) returned 0.000 sec / 0.000 sec

	RoomNumber	RoomAvailability	RoomSize	RoomType	HotelID
*	NULL	NULL	NULL	NULL	NULL

Using Rename command:

- 65 11:58:46 RENAME TABLE Hotel TO HotelS... 0 row(s) affected 0.031 sec

Using Drop command:

- 17 11:51:25 DROP TABLE Room 0 row(s) affected 0.031 sec
- 18 11:51:25 SELECT * FROM Room LIMIT 0, 1... Error Code: 1146. Table 'hotel.room...' 0.000 sec

CONCLUSION:

In this experiment, I learned about the various MySQL commands like Create, Use, Insert Into, Alter, Rename and Alter, constraints like Primary Key, Foreign Key, Not Null, Unique, etc. to implement on MySQL Workbench. Using this knowledge, I created two tables – Hotel and Room and through them established the Foreign Key constraint, added data to them and performed the various commands.