Activity 1:-

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CREATE:

1. Create table PowerStations (StationID INT PRIMARY KEY, Location VARCHAR(100), Capacity

DECIMAL(6,2)).

2. Create table Consumers (ConsumerID INT PRIMARY KEY, Name VARCHAR(50), ConnectionType VARCHAR(30)).

3. Create table EnergyLogs (LogID INT PRIMARY KEY, StationID INT, ConsumerID INT, EnergyConsumed

DECIMAL(6,2)).

ALTER:

4. Add column OperationalSince DATE to PowerStations.

5. Modify column Name in Consumers to VARCHAR(100).

6. Add column PeakUsage DECIMAL(6,2) to EnergyLogs.

DROP:

7. Drop table EnergyLogs.

8. Drop table Consumers.

9. Drop table PowerStations.

TRUNCATE / RENAME / MODIFY:

10. Rename table PowerStations to GridStations.

11. Truncate table Consumers.

12. Modify column ConnectionType in Consumers to VARCHAR(50).

```
Enter password: ******
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 9
Server version: 8.0.44 MySQL Community Server - GPL

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> Create database Smart_grid_energy_Management;
Query OK, 1 row affected (0.02 sec)

mysql> Use Smart_grid_energy_Management;
Database changed
mysql> CREATE TABLE PowerStations (StationID INT PRIMARY KEY, Location VARCHAR(100), Capacity DECIMAL(6,2));
Query OK, 0 rows affected (0.14 sec)

mysql> CREATE TABLE Consumers (ConsumerID INT PRIMARY KEY, Name VARCHAR(50), ConnectionType VARCHAR(30));
Query OK, 0 rows affected (0.02 sec)

mysql> CREATE TABLE EnergyLogs (LogID INT PRIMARY KEY, StationID INT, ConsumerID INT, EnergyConsumed DECIMAL(6,2));
Query OK, 0 rows affected (0.03 sec)

mysql> ALTER TABLE PowerStations ADD OperationalSince DATE;
Query OK, 0 rows affected (0.16 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> Desc PowerStations;
+------------------+--------------+------+-----+---------+-------+
| Field            | Type         | Null | Key | Default | Extra |
+------------------+--------------+------+-----+---------+-------+
| StationID        | int          | NO   | PRI | NULL    |       |
| Location         | varchar(100) | YES  |     | NULL    |       |
| Capacity         | decimal(6,2) | YES  |     | NULL    |       |
| OperationalSince | date         | YES  |     | NULL    |       |
+------------------+--------------+------+-----+---------+-------+
4 rows in set (0.17 sec)
```

```
mysql> Desc Consumers;
+----------------+--------------+------+-----+---------+-------+
| Field          | Type         | Null | Key | Default | Extra |
+----------------+--------------+------+-----+---------+-------+
| ConsumerID     | int          | NO   | PRI | NULL    |       |
| Name           | varchar(50)  | YES  |     | NULL    |       |
| ConnectionType | varchar(30)  | YES  |     | NULL    |       |
+----------------+--------------+------+-----+---------+-------+
3 rows in set (0.00 sec)

mysql> Desc EnergyLogs;
+----------------+--------------+------+-----+---------+-------+
| Field          | Type         | Null | Key | Default | Extra |
+----------------+--------------+------+-----+---------+-------+
| LogID          | int          | NO   | PRI | NULL    |       |
| StationID      | int          | YES  |     | NULL    |       |
| ConsumerID     | int          | YES  |     | NULL    |       |
| EnergyConsumed | decimal(6,2) | YES  |     | NULL    |       |
+----------------+--------------+------+-----+---------+-------+
4 rows in set (0.00 sec)

mysql> ALTER TABLE Consumers MODIFY Name VARCHAR(100);
Query OK, 0 rows affected (0.16 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> ALTER TABLE EnergyLogs ADD PeakUsage DECIMAL(6,2);
Query OK, 0 rows affected (0.12 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> Desc Consumers;
+----------------+--------------+------+-----+---------+-------+
| Field          | Type         | Null | Key | Default | Extra |
+----------------+--------------+------+-----+---------+-------+
| ConsumerID     | int          | NO   | PRI | NULL    |       |
| Name           | varchar(100) | YES  |     | NULL    |       |
| ConnectionType | varchar(30)  | YES  |     | NULL    |       |
+----------------+--------------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```

```
mysql> Desc EnergyLogs;
+----------------+--------------+------+-----+---------+-------+
| Field          | Type         | Null | Key | Default | Extra |
+----------------+--------------+------+-----+---------+-------+
| LogID          | int          | NO   | PRI | NULL    |       |
| StationID      | int          | YES  |     | NULL    |       |
| ConsumerID     | int          | YES  |     | NULL    |       |
| EnergyConsumed | decimal(6,2) | YES  |     | NULL    |       |
| PeakUsage      | decimal(6,2) | YES  |     | NULL    |       |
+----------------+--------------+------+-----+---------+-------+
5 rows in set (0.00 sec)

mysql> RENAME TABLE PowerStations TO GridStations;
Query OK, 0 rows affected (0.09 sec)

mysql> Desc GridStations;
+------------------+--------------+------+-----+---------+-------+
| Field            | Type         | Null | Key | Default | Extra |
+------------------+--------------+------+-----+---------+-------+
| StationID        | int          | NO   | PRI | NULL    |       |
| Location         | varchar(100) | YES  |     | NULL    |       |
| Capacity         | decimal(6,2) | YES  |     | NULL    |       |
| OperationalSince | date         | YES  |     | NULL    |       |
+------------------+--------------+------+-----+---------+-------+
4 rows in set (0.00 sec)

mysql> TRUNCATE TABLE Consumers;
Query OK, 0 rows affected (0.10 sec)

mysql> Desc Consumers;
+----------------+--------------+------+-----+---------+-------+
| Field          | Type         | Null | Key | Default | Extra |
+----------------+--------------+------+-----+---------+-------+
| ConsumerID     | int          | NO   | PRI | NULL    |       |
| Name           | varchar(100) | YES  |     | NULL    |       |
| ConnectionType | varchar(30)  | YES  |     | NULL    |       |
+----------------+--------------+------+-----+---------+-------+
3 rows in set (0.00 sec)

mysql> ALTER TABLE Consumers MODIFY ConnectionType VARCHAR(50);
Query OK, 0 rows affected (0.07 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
mysql> Desc Consumers;
+----------------+--------------+------+-----+---------+-------+
| Field          | Type         | Null | Key | Default | Extra |
+----------------+--------------+------+-----+---------+-------+
| ConsumerID     | int          | NO   | PRI | NULL    |       |
| Name           | varchar(100) | YES  |     | NULL    |       |
| ConnectionType | varchar(50)  | YES  |     | NULL    |       |
+----------------+--------------+------+-----+---------+-------+
3 rows in set (0.00 sec)

mysql> DROP TABLE EnergyLogs;
Query OK, 0 rows affected (0.07 sec)

mysql> DROP TABLE Consumers;
Query OK, 0 rows affected (0.08 sec)

mysql> DROP TABLE PowerStations;
ERROR 1051 (42S02): Unknown table 'smart_grid_energy_management.powerstations'
mysql>
```