```
-- Create Transformers Table
CREATE TABLE Transformers (
    transformer_id INT PRIMARY KEY,
    location VARCHAR(255),
    capacity_mva INT,
    manufacturer VARCHAR(255),
    date_of_installation DATE
);

-- Create Maintenance Table
CREATE TABLE Maintenance (
    maintenance_id INT PRIMARY KEY,
    transformer_id INT,
    maintenance_date DATE,
    tasks_performed TEXT,
    issues_found TEXT,
    FOREIGN KEY (transformer_id) REFERENCES Transformers(transformer_id)
);

-- Create Load Distribution Table
CREATE TABLE LoadDistribution (
    load_id INT PRIMARY KEY,
    transformer_id INT,
    load_mw FLOAT,
    load_date DATE,
    FOREIGN KEY (transformer_id) REFERENCES Transformers(transformer_id));
```

```
-- Create Fault Log Table
CREATE TABLE FaultLog (
    fault_id INT PRIMARY KEY,
    transformer_id INT,
    fault_date DATE,
    fault_description TEXT,
    resolution_description TEXT,
    FOREIGN KEY (transformer_id) REFERENCES Transformers(transformer_id)
);

-- Create Technician Table
CREATE TABLE Technicians (
    technician_id INT PRIMARY KEY,
    name VARCHAR(255),
    contact_info VARCHAR(255),
    expertise_area VARCHAR(255)
);

-- Create a Maintenance Technician Relation Table
CREATE TABLE MaintenanceTechnicians (
    maintenance_id INT,
    technician_id INT,
    FOREIGN KEY (maintenance_id) REFERENCES
Maintenance(maintenance_id),
    FOREIGN KEY (technician_id) REFERENCES Technicians(technician_id)
);
```

```
-- Insert Sample Transformers
INSERT INTO Transformers (transformer_id, location, capacity_mva,
manufacturer, date_of_installation)
VALUES (1, 'Substation A, Mumbai', 50, 'BHEL', '2019-03-01'),
    (2, 'Substation B, Delhi', 75, 'Tata Power', '2020-06-15');

-- Insert Sample Maintenance Records
INSERT INTO Maintenance (maintenance_id, transformer_id,
maintenance_date, tasks_performed, issues_found)
VALUES (1, 1, '2021-09-01', 'Oil change, Insulation test', 'No issues'),
    (2, 2, '2021-09-15', 'Oil change, Load test', 'Minor leakage');

-- Insert Load Data
INSERT INTO LoadDistribution (load_id, transformer_id, load_mw, load_date)
VALUES (1, 1, 30.5, '2024-09-01'),
    (2, 2, 55.0, '2024-09-01');

-- Insert Fault Log
INSERT INTO FaultLog (fault_id, transformer_id, fault_date, fault_description,
resolution_description)
VALUES (1, 1, '2024-07-11', 'Overheating', 'Cooler installed');

-- Insert Technicians
INSERT INTO Technicians (technician_id, name, contact_info, expertise_area)
VALUES (1, 'Amit Niranjan', 'Amit@gmail.com.com', 'Transformer
Maintenance'),
    (2, 'Rohit Sharma', 'Rohit@gmail.com', 'Electrical Systems');
```

```
-- 1. Find all transformers with a capacity greater than 50 MVA
SELECT * FROM Transformers WHERE capacity_mva > 50;

-- 2. Get all maintenance records for a specific transformer
SELECT * FROM Maintenance WHERE transformer_id = 1;

-- 3. Calculate the total load handled by all transformers on a specific date
SELECT SUM(load_mw) AS total_load FROM LoadDistribution WHERE
load_date = '2023-09-01';
-- 4. Get a list of technicians who worked on a specific maintenance record
SELECT Technicians.name FROM Technicians
JOIN MaintenanceTechnicians ON Technicians.technician_id =
MaintenanceTechnicians.technician_id
WHERE MaintenanceTechnicians.maintenance_id = 1;

-- 5. Find transformers that have reported faults in the last year
SELECT * FROM Transformers
JOIN FaultLog ON Transformers.transformer_id = FaultLog.transformer_id
WHERE fault_date >= DATEADD(YEAR, -1, GETDATE());
```