Army supply chain, Bill of Materials and Maintance cost an

Aim: To design a database system to track equipment maintance costs, forecast replacement parts and multiple cost analysis for military logistics and support operations

SQL Queries & Outputs

1. Create Tables

```
CREATE TABLE Equipment (
    Equip_ID INT PRIMARY KEY,
    Equip_Name VARCHAR(50),
    Location VARCHAR(50),
    Climate VARCHAR(30)
);

CREATE TABLE Maintenance (
    Main_ID INT PRIMARY KEY,
    Equip_ID INT,
    cost DECIMAL(10,2),
    Maint_Date DATE,
    Failure_Rate FLOAT,
    FOREIGN KEY (Equip_ID) REFERENCE Equipment (Equip_ID)
);
```

output: Tables created Succesfully.

. Insert Sample Data.

```
INSERT INTO Equipment VALUES
1, 'Helicopter', 'Desert Base', 'Hot');
2, 'Tank', 'Mountain Base', 'Cold');

INSERT INTO Maintance VALUES
01, 1, 5000.00, '2025-06-10', 0.15);
02, 2, 3000.00, '2025-07-05', 0.10);
```

tput: 2 rows inserted in each table.

Calculate Total Maintance cost per Equipment

```
ELECT E.Equip_Name, SUM(M.cost) AS total_cost
ROM Equipment E
OIN Maintenance M on E Equip_ID = M.Equip_ID
ROUP BY E.Equip_Name;
```

Equip-Name	Idal-cost
Helicopter	500000
Tank	300000

4. Forecast Replacement Based on Failure Rate

```
SELECT Equip_Name,
CASE WHEN Failure-Rate > 0.12 THEN 'High Risk'
   ELSE 'Normal'
END AS Maintenance_priority
FROM Equipment E
JOIN Maintance M ON E.Equip-ID = M.Equip-ID;
```

Equip-Name	Maintenance_priority
Helicopter	High Risk
Tank	Normal

If.

The SQL mode efficently track mainte and cost dat be 'what-if' analysis for deployments and support & forecasting for unpredicate in defence logistics.