**ERD:**

A diagram of a computer

Description automatically generated

**RDM:**

A diagram of a diagram

Description automatically generated with medium confidence

**SQI:**

CREATE TABLE Employee

(

E\_ID INT NOT NULL,

Name VARCHAR(30) NOT NULL,

Gender\_ VARCHAR(6) NOT NULL,

PRIMARY KEY (E\_ID)

);

CREATE TABLE Admin

(

Security\_code INT NOT NULL,

password INT NOT NULL,

E\_ID INT NOT NULL,

PRIMARY KEY (E\_ID),

FOREIGN KEY (E\_ID) REFERENCES Employee(E\_ID)

);

CREATE TABLE Driver

(

Line VARCHAR(50) NOT NULL,

E\_ID INT NOT NULL,

PRIMARY KEY (E\_ID),

FOREIGN KEY (E\_ID) REFERENCES Employee(E\_ID)

);

CREATE TABLE Maintenance

(

Work\_field\_ VARCHAR(50) NOT NULL,

E\_ID INT NOT NULL,

PRIMARY KEY (E\_ID),

FOREIGN KEY (E\_ID) REFERENCES Employee(E\_ID)

);

CREATE TABLE Reservation

(

Code INT NOT NULL,

Total\_seats INT NOT NULL,

E\_ID INT NOT NULL,

PRIMARY KEY (Code),

FOREIGN KEY (E\_ID) REFERENCES Admin(E\_ID)

);

CREATE TABLE Passenger

(

P\_ID INT NOT NULL,

p\_name VARCHAR(50) NOT NULL,

PRIMARY KEY (P\_ID)

);

CREATE TABLE Maintenance\_system

(

Prog\_ID INT NOT NULL,

Prog\_name VARCHAR(50) NOT NULL,

E\_ID INT NOT NULL,

PRIMARY KEY (Prog\_ID),

FOREIGN KEY (E\_ID) REFERENCES Maintenance(E\_ID)

);

CREATE TABLE Employee\_phone\_no

(

phone\_no INT NOT NULL,

E\_ID INT NOT NULL,

PRIMARY KEY (phone\_no, E\_ID),

FOREIGN KEY (E\_ID) REFERENCES Employee(E\_ID)

);

CREATE TABLE Passenger\_phone\_no

(

p\_phone\_no INT NOT NULL,

P\_ID INT NOT NULL,

PRIMARY KEY (p\_phone\_no, P\_ID),

FOREIGN KEY (P\_ID) REFERENCES Passenger(P\_ID)

);

CREATE TABLE ticket

(

T\_Code INT NOT NULL,

Destination VARCHAR(50) NOT NULL,

Price INT NOT NULL,

Code INT NOT NULL,

P\_ID INT NOT NULL,

PRIMARY KEY (T\_Code),

FOREIGN KEY (Code) REFERENCES Reservation(Code),

FOREIGN KEY (P\_ID) REFERENCES Passenger(P\_ID)

);

CREATE TABLE Train

(

TR\_code INT NOT NULL,

Departure\_station VARCHAR(50) NOT NULL,

Arrival\_station VARCHAR(50) NOT NULL,

T\_Code INT NOT NULL,

E\_ID INT NOT NULL,

Prog\_ID INT NOT NULL,

M\_E\_ID INT NOT NULL,

PRIMARY KEY (TR\_code),

FOREIGN KEY (T\_Code) REFERENCES ticket(T\_Code),

FOREIGN KEY (E\_ID) REFERENCES Driver(E\_ID),

FOREIGN KEY (Prog\_ID) REFERENCES Maintenance\_system(Prog\_ID),

FOREIGN KEY (E\_ID) REFERENCES Maintenance(E\_ID)

);

CREATE TABLE Station

(

S\_ID INT NOT NULL,

location VARCHAR(50) NOT NULL,

Line VARCHAR(50) NOT NULL,

TR\_code INT NOT NULL,

PRIMARY KEY (S\_ID),

FOREIGN KEY (TR\_code) REFERENCES Train(TR\_code)

);

**Inserting records for testing:**

INSERT INTO Employee (E\_ID, Name, Gender\_) VALUES (1, 'John Doe', 'Male');

INSERT INTO Employee (E\_ID, Name, Gender\_) VALUES (2, 'Jane Smith', 'Female');

INSERT INTO Employee (E\_ID, Name, Gender\_) VALUES (3, 'Bob Johnson', 'Male');

INSERT INTO Employee (E\_ID, Name, Gender\_) VALUES (4, 'Emily Johnson', 'Female');

INSERT INTO Employee (E\_ID, Name, Gender\_) VALUES (5, 'Michael Smith', 'Male');

INSERT INTO Employee (E\_ID, Name, Gender\_) VALUES (6, 'Olivia Davis', 'Female');

INSERT INTO Employee (E\_ID, Name, Gender\_) VALUES (7, 'Daniel Brown', 'Male');

INSERT INTO Employee (E\_ID, Name, Gender\_) VALUES (8, 'Sophia Wilson', 'Female');

INSERT INTO Employee (E\_ID, Name, Gender\_) VALUES (9, 'Matthew Taylor', 'Male');

INSERT INTO Employee (E\_ID, Name, Gender\_) VALUES (10, 'Emma Miller', 'Female');

-

INSERT INTO Admin (Security\_code, password, E\_ID) VALUES (1234, 5678, 1);

INSERT INTO Admin (Security\_code, password, E\_ID) VALUES (4321, 8765, 2);

INSERT INTO Admin (Security\_code, password, E\_ID) VALUES (9876, 5432, 3);

INSERT INTO Admin (Security\_code, password, E\_ID) VALUES (5678, 1234, 4);

INSERT INTO Admin (Security\_code, password, E\_ID) VALUES (8765, 4321, 5);

INSERT INTO Admin (Security\_code, password, E\_ID) VALUES (5432, 9876, 6);

INSERT INTO Admin (Security\_code, password, E\_ID) VALUES (4321, 8765, 7);

-

INSERT INTO Driver (Line, E\_ID) VALUES ('Blue Line', 1);

INSERT INTO Driver (Line, E\_ID) VALUES ('Red Line', 2);

INSERT INTO Driver (Line, E\_ID) VALUES ('Green Line', 3);

INSERT INTO Driver (Line, E\_ID) VALUES ('Yellow Line', 4);

INSERT INTO Driver (Line, E\_ID) VALUES ('Purple Line', 5);

INSERT INTO Driver (Line, E\_ID) VALUES ('Orange Line', 6);

INSERT INTO Driver (Line, E\_ID) VALUES ('Brown Line', 7);

-

INSERT INTO Maintenance (Work\_field\_, E\_ID) VALUES ('Track Maintenance', 1);

INSERT INTO Maintenance (Work\_field\_, E\_ID) VALUES ('Signal Maintenance', 2);

INSERT INTO Maintenance (Work\_field\_, E\_ID) VALUES ('Facility Maintenance', 3);

INSERT INTO Maintenance (Work\_field\_, E\_ID) VALUES ('Electrical Maintenance', 4);

INSERT INTO Maintenance (Work\_field\_, E\_ID) VALUES ('Track Repair', 5);

INSERT INTO Maintenance (Work\_field\_, E\_ID) VALUES ('Facility Inspection', 6);

INSERT INTO Maintenance (Work\_field\_, E\_ID) VALUES ('Signal Maintenance', 7);

-

INSERT INTO Reservation (Code, Total\_seats, E\_ID) VALUES (1001, 50, 1);

INSERT INTO Reservation (Code, Total\_seats, E\_ID) VALUES (1002, 40, 2);

INSERT INTO Reservation (Code, Total\_seats, E\_ID) VALUES (1003, 30, 3);

INSERT INTO Reservation (Code, Total\_seats, E\_ID) VALUES (1004, 20, 4);

INSERT INTO Reservation (Code, Total\_seats, E\_ID) VALUES (1005, 35, 5);

INSERT INTO Reservation (Code, Total\_seats, E\_ID) VALUES (1006, 45, 6);

INSERT INTO Reservation (Code, Total\_seats, E\_ID) VALUES (1007, 25, 7);

-

INSERT INTO Passenger (P\_ID, p\_name) VALUES (101, 'Alice Johnson');

INSERT INTO Passenger (P\_ID, p\_name) VALUES (102, 'Bob Williams');

INSERT INTO Passenger (P\_ID, p\_name) VALUES (103, 'Catherine Davis');

INSERT INTO Passenger (P\_ID, p\_name) VALUES (104, 'Liam Jones');

INSERT INTO Passenger (P\_ID, p\_name) VALUES (105, 'Ava Martinez');

INSERT INTO Passenger (P\_ID, p\_name) VALUES (106, 'Ethan Wilson');

INSERT INTO Passenger (P\_ID, p\_name) VALUES (107, 'Isabella Moore');

-

INSERT INTO Maintenance\_system (Prog\_ID, Prog\_name, E\_ID) VALUES (201, 'Track Inspection', 1);

INSERT INTO Maintenance\_system (Prog\_ID, Prog\_name, E\_ID) VALUES (202, 'Signal Upgrade', 2);

INSERT INTO Maintenance\_system (Prog\_ID, Prog\_name, E\_ID) VALUES (203, 'Facility Repairs', 3);

INSERT INTO Maintenance\_system (Prog\_ID, Prog\_name, E\_ID) VALUES (204, 'HVAC System Maintenance', 4);

INSERT INTO Maintenance\_system (Prog\_ID, Prog\_name, E\_ID) VALUES (205, 'Elevator Repair', 5);

INSERT INTO Maintenance\_system (Prog\_ID, Prog\_name, E\_ID) VALUES (206, 'Plumbing Inspection', 6);

INSERT INTO Maintenance\_system (Prog\_ID, Prog\_name, E\_ID) VALUES (207, 'Roof Repairs', 7);

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INSERT INTO Employee\_phone\_no (phone\_no, E\_ID) VALUES (1234567890, 1);

INSERT INTO Employee\_phone\_no (phone\_no, E\_ID) VALUES (9876543210, 2);

INSERT INTO Employee\_phone\_no (phone\_no, E\_ID) VALUES (5555555555, 3);

INSERT INTO Employee\_phone\_no (phone\_no, E\_ID) VALUES (1112223333, 4);

INSERT INTO Employee\_phone\_no (phone\_no, E\_ID) VALUES (4445556666, 5);

INSERT INTO Employee\_phone\_no (phone\_no, E\_ID) VALUES (7778889999, 6);

INSERT INTO Employee\_phone\_no (phone\_no, E\_ID) VALUES (9990001111, 7);

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INSERT INTO Passenger\_phone\_no (p\_phone\_no, P\_ID) VALUES (9998887777, 101);

INSERT INTO Passenger\_phone\_no (p\_phone\_no, P\_ID) VALUES (1112223333, 102);

INSERT INTO Passenger\_phone\_no (p\_phone\_no, P\_ID) VALUES (4445556666, 103);

INSERT INTO Passenger\_phone\_no (p\_phone\_no, P\_ID) VALUES (7777777777, 104);

INSERT INTO Passenger\_phone\_no (p\_phone\_no, P\_ID) VALUES (8888888888, 105);

INSERT INTO Passenger\_phone\_no (p\_phone\_no, P\_ID) VALUES (9999999999, 106);

INSERT INTO Passenger\_phone\_no (p\_phone\_no, P\_ID) VALUES (1010101010, 107);

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INSERT INTO ticket (T\_Code, Destination, Price, Code, P\_ID) VALUES (5001, 'City A', 50, 1001, 101);

INSERT INTO ticket (T\_Code, Destination, Price, Code, P\_ID) VALUES (5002, 'City B', 40, 1002, 102);

INSERT INTO ticket (T\_Code, Destination, Price, Code, P\_ID) VALUES (5003, 'City C', 30, 1003, 103);

INSERT INTO ticket (T\_Code, Destination, Price, Code, P\_ID) VALUES (5004, 'City D', 60, 1004, 104);

INSERT INTO ticket (T\_Code, Destination, Price, Code, P\_ID) VALUES (5005, 'City E', 25, 1005, 105);

INSERT INTO ticket (T\_Code, Destination, Price, Code, P\_ID) VALUES (5006, 'City F', 40, 1006, 106);

INSERT INTO ticket (T\_Code, Destination, Price, Code, P\_ID) VALUES (5007, 'City G', 30, 1007, 107);

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INSERT INTO Train (TR\_code, Departure\_station, Arrival\_station, T\_Code, E\_ID, Prog\_ID, M\_E\_ID) VALUES (6001, 'Station X', 'Station Y', 5001, 1, 201, 1);

INSERT INTO Train (TR\_code, Departure\_station, Arrival\_station, T\_Code, E\_ID, Prog\_ID, M\_E\_ID) VALUES (6002, 'Station P', 'Station Q', 5002, 2, 202, 2);

INSERT INTO Train (TR\_code, Departure\_station, Arrival\_station, T\_Code, E\_ID, Prog\_ID, M\_E\_ID) VALUES (6003, 'Station M', 'Station N', 5003, 3, 203, 3);

INSERT INTO Train (TR\_code, Departure\_station, Arrival\_station, T\_Code, E\_ID, Prog\_ID, M\_E\_ID) VALUES (6004, 'Station W', 'Station X', 5004, 4, 204, 4);

INSERT INTO Train (TR\_code, Departure\_station, Arrival\_station, T\_Code, E\_ID, Prog\_ID, M\_E\_ID) VALUES (6005, 'Station R', 'Station S', 5005, 5, 205, 5);

INSERT INTO Train (TR\_code, Departure\_station, Arrival\_station, T\_Code, E\_ID, Prog\_ID, M\_E\_ID) VALUES (6006, 'Station L', 'Station M', 5006, 6, 206, 6);

INSERT INTO Train (TR\_code, Departure\_station, Arrival\_station, T\_Code, E\_ID, Prog\_ID, M\_E\_ID) VALUES (6007, 'Station K', 'Station N', 5007, 7, 207, 7);

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INSERT INTO Station (S\_ID, location, Line, TR\_code) VALUES (701, 'City X', 'Blue Line', 6001);

INSERT INTO Station (S\_ID, location, Line, TR\_code) VALUES (702, 'City Y', 'Red Line', 6002);

INSERT INTO Station (S\_ID, location, Line, TR\_code) VALUES (703, 'City Z', 'Green Line', 6003);

INSERT INTO Station (S\_ID, location, Line, TR\_code) VALUES (704, 'City D', 'Yellow Line', 6004);

INSERT INTO Station (S\_ID, location, Line, TR\_code) VALUES (705, 'City E', 'Purple Line', 6005);

INSERT INTO Station (S\_ID, location, Line, TR\_code) VALUES (706, 'City F', 'Orange