RAILWAY MANAGEMENT SYSTEM

SUBMITTED FROM: SUBMITTED TO:

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SEMESTER : 4TH   ASSISTANT PROFESSOR

SECTION : C

REG. NO. : PCE22CS188   SIGN:_____

mysql> show databases;

```
+--------------------+
| Database           |
+--------------------+
| information_schema |
| mayur              |
| mysql              |
| performance_schema |
| rail               |
| sakila             |
| sys                |
| world              |
+--------------------+
8 rows in set (0.10 sec)
```

mysql> use rail;

```
Database changed
```

mysql> CREATE TABLE Stations (
    -> StationID INT AUTO_INCREMENT PRIMARY KEY,
    -> StationName VARCHAR(100) ,
    -> Location VARCHAR(100));

```
Query OK, 0 rows affected (0.20 sec)
```

mysql>create table trains(
    -> T_id int AUTO_INCREMENT PRIMARY KEY,
    -> T_Name varchar(60),
    -> Seats int);

```
3 rows in set (0.01 sec)
```

mysql>ALTER TABLE Trains
    -> ADD COLUMN TrainType VARCHAR(50) NOT NULL;

```
Query OK, 0 rows affected (0.04 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

mysql>desc trains;

```
mysql> desc trains;
+-----------+-------------+------+-----+---------+----------------+
| Field     | Type        | Null | Key | Default | Extra          |
+-----------+-------------+------+-----+---------+----------------+
| T_id      | int         | NO   | PRI | NULL    | auto_increment |
| T_Name    | varchar(60) | YES  |     | NULL    |                |
| Seats     | int         | YES  |     | NULL    |                |
| TrainType | varchar(50) | NO   |     | NULL    |                |
+-----------+-------------+------+-----+---------+----------------+
4 rows in set (0.00 sec)
```

```
mysql>CREATE TABLE Routes (
    -> RouteID INT AUTO_INCREMENT PRIMARY KEY,
    -> T_id INT,
    -> S_StationID INT,
    -> E_StationID INT,
    -> DepartureTime TIME,
    -> ArrivalTime TIME,
    -> FOREIGN KEY (T_ID) REFERENCES Trains(T_ID),
    -> FOREIGN KEY (S_StationID) REFERENCES Stations(StationID),
    ->  FOREIGN KEY (E_StationID) REFERENCES Stations(StationID));
```
`Query OK, 0 rows affected (0.14 sec)`

```
mysql>CREATE TABLE Passengers (
    -> PassengerID INT AUTO_INCREMENT PRIMARY KEY,
    -> PassengerName VARCHAR(100) NOT NULL,
    -> Age INT,
    -> Gender ENUM ('Male','Female','Others'));
```
`Query OK, 0 rows affected (0.08 sec)`

```
mysql>CREATE TABLE Tickets (
    -> TicketID INT AUTO_INCREMENT PRIMARY KEY,
    -> RouteID INT,
    -> PassengerID INT,
    -> SeatNumber INT NOT NULL,
    -> BookingDate DATE,
    -> FOREIGN KEY (RouteID) REFERENCES Routes(RouteID),
    -> FOREIGN KEY (PassengerID) REFERENCES Passengers(PassengerID) );
```
`Query OK, 0 rows affected (0.07 sec)`

```
mysql>CREATE TABLE Employees (
    -> EmployeeID INT AUTO_INCREMENT PRIMARY KEY,
    -> EmployeeName VARCHAR(100) NOT NULL,
    -> Position VARCHAR(50),
    -> HireDate DATE,
    -> Salary DECIMAL(10,2) );
```
`Query OK, 0 rows affected (0.08 sec)`

```
mysql>CREATE TABLE Schedules (
    -> Schedule_ID INT PRIMARY KEY,
    -> T_id INT,
    -> StationID INT,
    -> ArrivalTime TIME,
    -> DepartureTime TIME,
    -> FOREIGN KEY (T_id) REFERENCES Trains(T_id),
    -> FOREIGN KEY (StationID) REFERENCES Stations(StationID) );
```

```
Query OK, 0 rows affected (0.10 sec)
```

mysql>INSERT INTO Stations (StationID, StationName, Location) VALUES
    -> (1, 'Mumbai Central', 'Mumbai'),
    -> (2, 'Howrah Junction', 'Kolkata'),
    -> (3, 'Chennai Central', 'Chennai'),
    -> (4, 'New Delhi', 'Delhi'),
    -> (5, 'Bangalore City', 'Bangalore'),
    -> (6, 'Hyderabad Deccan', 'Hyderabad'),
    -> (7, 'Secunderabad Junction', 'Hyderabad'),
    -> (8, 'Ahmedabad Junction', 'Ahmedabad'),
    -> (9, 'Pune Junction', 'Pune'),
    -> (10, 'Patna Junction', 'Patna');

```
Query OK, 10 rows affected (0.01 sec)
Records: 10  Duplicates: 0  Warnings: 0
```

mysql>INSERT INTO Trains (T_id, T_Name,Seats, TrainType) VALUES
    -> (1, 'Rajdhani Express',1000, 'Passenger'),
    -> (2, 'Shatabdi Express',800, 'Passenger'),
    -> (3, 'Duronto Express',900, 'Passenger'),
    -> (4, 'Garib Rath',1200, 'Passenger'),
    -> (5, 'Mahananda Express',850, 'Passenger'),
    -> (6, 'Superfast Express',1100, 'Passenger'),
    -> (7, 'Jan Shatabdi',1500 ,'Mail'),
    -> (8, 'Humsafar Express',1100, 'Super Fast'),
    -> (9, 'Vande Bharat Express',750, 'Super Fast'),
    -> (10, 'Goods Carrier',100, 'Cargo');

```
Query OK, 10 rows affected (0.01 sec)
Records: 10  Duplicates: 0  Warnings: 0
```

mysql>INSERT INTO Routes (T_id, S_StationID, E_StationID, DepartureTime, ArrivalTime) VALUES
    -> (1, 1, 4, '08:00:00', '18:00:00'),
    -> (2, 2, 4, '09:00:00', '19:00:00'),
    -> (3, 3, 4, '10:00:00', '20:00:00'),
    -> (4, 4, 5, '11:00:00', '21:00:00'),
    -> (5, 5, 6, '12:00:00', '22:00:00'),
    -> (6, 6, 7, '13:00:00', '23:00:00'),
    -> (7, 7, 8, '14:00:00', '00:00:00'),
    -> (8, 8, 9, '15:00:00', '01:00:00'),
    -> (9, 9, 10, '16:00:00', '02:00:00'),
    -> (10, 10, 1, '17:00:00', '03:00:00');

```
Query OK, 10 rows affected (0.01 sec)
Records: 10  Duplicates: 0  Warnings: 0
```

mysql>INSERT INTO Passengers (PassengerID, PassengerName, Age, Gender, Contact_Info) VALUES
   -> (1, 'Amit Sharma', 30, 'Male', '9876543210'),
   -> (2, 'Priya Singh', 25, 'Female', '8765432109'),
   -> (3, 'Rahul Verma', 28, 'Male', '7654321098'),
   -> (4, 'Anita Desai', 35, 'Female', '6543210987'),
   -> (5, 'Vikram Patil', 40, 'Male', '5432109876'),
   -> (6, 'Sneha Reddy', 32, 'Female', '4321098765'),
   -> (7, 'Rakesh Gupta', 29, 'Male', '8210987654'),
   -> (8, 'Neha Kapoor', 26, 'Female', '9109876543'),
   -> (9, 'Sunil Mehta', 33, 'Male', '7098765432'),
   -> (10, 'Meera Nair', 27, 'Female', '8987654321');

```
Query OK, 10 rows affected (0.01 sec)
Records: 10  Duplicates: 0  Warnings: 0
```

mysql>INSERT INTO Tickets (TicketID, RouteID, PassengerID,SeatNumber, BookingDate, Compartment) VALUES
   -> (1,1, 1, 41, '2024-05-01','A1'),
   -> (2,2, 2, 32, '2024-05-02','B2'),
   -> (3,3, 3, 30, '2024-05-03','C3'),
   -> (4,4, 4, 19, '2024-05-09','H1'),
   -> (5,5, 5, 10, '2024-05-04','D4'),
   -> (6,6, 6, 26, '2024-05-06','B1'),
   -> (7,7, 7, 51, '2024-05-07','G7'),
   -> (8,8, 8, 29, '2024-05-08','A6'),
   -> (9,9, 9, 64, '2024-05-09','M2'),
   -> (10,10, 10, 08, '2024-05-10','H2');

```
Query OK, 10 rows affected (0.01 sec)
Records: 10  Duplicates: 0  Warnings: 0
```

INSERT INTO Employees (EmployeeID, EmployeeName, Position, Hiredate, Salary) VALUES
   -> (1, 'Ramesh Kumar', 'Station Master', '2020-03-15', 50000),
   -> (2, 'Priya Sharma', 'Ticket Checker', '2019-06-28', 35000),
   -> (3, 'Amit Singh', 'Train Driver', '2018-12-10', 60000),
   -> (4, 'Neha Patel', 'Reservation Clerk', '2021-02-20', 30000),
   -> (5, 'Rajesh Verma', 'Platform Supervisor', '2020-08-05', 40000),
   -> (6, 'Anita Gupta', 'Signal Operator', '2017-10-12', 45000),
   -> (7, 'Sunil Tiwari', 'Train Conductor', '2019-03-25', 38000),
   -> (8, 'Meena Devi', 'Cleaning Staff', '2022-01-10', 25000),
   -> (9, 'Vijay Kumar', 'Security Guard', '2018-05-18', 32000),
   -> (10, 'Shalini Singh', 'Customer Service Representative', '2021-09-30', 35000);

```
Query OK, 10 rows affected (0.01 sec)
Records: 10  Duplicates: 0  Warnings: 0
```

mysql>INSERT INTO Schedules (Schedule_ID, T_id, StationID, ArrivalTime, DepartureTime)
VALUES
    -> (1, 1, 1, '08:00:00', '08:15:00'),
    -> (2, 1, 2, '09:00:00', '09:15:00'),
    -> (3, 2, 2, '10:00:00', '10:15:00'),
    -> (4, 2, 3, '11:00:00', '11:15:00'),
    -> (5, 3, 3, '12:00:00', '12:15:00'),
    -> (6, 3, 4, '13:00:00', '13:15:00'),
    -> (7, 4, 4, '14:00:00', '14:15:00'),
    -> (8, 4, 5, '15:00:00', '15:15:00'),
    -> (9, 5, 5, '16:00:00', '16:15:00'),
    -> (10, 5, 6, '17:00:00', '17:15:00');

```
Query OK, 10 rows affected (0.01 sec)
Records: 10  Duplicates: 0  Warnings: 0
```

---

mysql>Select * from Stations;

```
mysql> select * from stations;
+-----------+----------------------+-----------+
| StationID | StationName          | Location  |
+-----------+----------------------+-----------+
|         1 | Mumbai Central       | Mumbai    |
|         2 | Howrah Junction      | Kolkata   |
|         3 | Chennai Central      | Chennai   |
|         4 | New Delhi            | Delhi     |
|         5 | Bangalore City       | Bangalore |
|         6 | Hyderabad Deccan     | Hyderabad |
|         7 | Secunderabad Junction| Hyderabad |
|         8 | Ahmedabad Junction   | Ahmedabad |
|         9 | Pune Junction        | Pune      |
|        10 | Patna Junction       | Patna     |
+-----------+----------------------+-----------+
10 rows in set (0.01 sec)
```

---

mysql>Select * from Trains;

```
mysql> select * from Trains;
+------+----------------------+-------+-----------+
| T_id | T_Name               | Seats | TrainType |
+------+----------------------+-------+-----------+
|    1 | Rajdhani Express     |  1000 | Passenger |
|    2 | Shatabdi Express     |   800 | Passenger |
|    3 | Duronto Express      |   900 | Passenger |
|    4 | Garib Rath           |  1200 | Passenger |
|    5 | Mahananda Express    |   850 | Passenger |
|    6 | Superfast Express    |  1100 | Passenger |
|    7 | Jan Shatabdi         |  1500 | Mail      |
|    8 | Humsafar Express     |  1100 | Super Fast|
|    9 | Vande Bharat Express |   750 | Super Fast|
|   10 | Goods Carrier        |   100 | Cargo     |
+------+----------------------+-------+-----------+
10 rows in set (0.01 sec)
```

---

mysql>Select * from Routes;

```
+---------+------+-----------+-----------+---------------+-------------+
| RouteID | T_id | S_StationID | E_StationID | DepartureTime | ArrivalTime |
+---------+------+-----------+-----------+---------------+-------------+
|       1 |    1 |         1 |         4 | 08:00:00      | 18:00:00    |
|       2 |    2 |         2 |         4 | 09:00:00      | 19:00:00    |
|       3 |    3 |         3 |         4 | 10:00:00      | 20:00:00    |
|       4 |    4 |         4 |         5 | 11:00:00      | 21:00:00    |
|       5 |    5 |         5 |         6 | 12:00:00      | 22:00:00    |
|       6 |    6 |         6 |         7 | 13:00:00      | 23:00:00    |
|       7 |    7 |         7 |         8 | 14:00:00      | 00:00:00    |
|       8 |    8 |         8 |         9 | 15:00:00      | 01:00:00    |
|       9 |    9 |         9 |        10 | 16:00:00      | 02:00:00    |
|      10 |   10 |        10 |         1 | 17:00:00      | 03:00:00    |
+---------+------+-----------+-----------+---------------+-------------+
10 rows in set (0.00 sec)
```

mysql>Select * from Passengers;

PassengerID	PassengerName	Age	Gender	Contact_Info
1	Amit Sharma	30	Male	9876543210
2	Priya Singh	25	Female	8765432109
3	Rahul Verma	28	Male	7654321098
4	Anita Desai	35	Female	6543210987
5	Vikram Patil	40	Male	5432109876
6	Sneha Reddy	32	Female	4321098765
7	Rakesh Gupta	29	Male	8210987654
8	Neha Kapoor	26	Female	9109876543
9	Sunil Mehta	33	Male	7098765432
10	Meera Nair	27	Female	8987654321

10 rows in set (0.01 sec)

mysql>Select * from Tickets;

TicketID	RouteID	PassengerID	SeatNumber	BookingDate	Compartment
1	1	1	41	2024-05-01	A1
2	2	2	32	2024-05-02	B2
3	3	3	30	2024-05-03	C3
4	4	4	19	2024-05-09	H1
5	5	5	10	2024-05-04	D4
6	6	6	26	2024-05-06	B1
7	7	7	51	2024-05-07	G7
8	8	8	29	2024-05-08	A6
9	9	9	64	2024-05-09	M2
10	10	10	8	2024-05-10	H2

10 rows in set (0.00 sec)

mysql>Select * from Employees;

EmployeeID	EmployeeName	Position	HireDate	Salary
1	Ramesh Kumar	Station Master	2020-03-15	50000.00
2	Priya Sharma	Ticket Checker	2019-06-28	35000.00
3	Amit Singh	Train Driver	2018-12-10	60000.00
4	Neha Patel	Reservation Clerk	2021-02-20	30000.00
5	Rajesh Verma	Platform Supervisor	2020-08-05	40000.00
6	Anita Gupta	Signal Operator	2017-10-12	45000.00
7	Sunil Tiwari	Train Conductor	2019-03-25	38000.00
8	Meena Devi	Cleaning Staff	2022-01-10	25000.00
9	Vijay Kumar	Security Guard	2018-05-18	32000.00
10	Shalini Singh	Customer Service Representative	2021-09-30	35000.00

10 rows in set (0.00 sec)

mysql>Select * from Schedules;

Schedule_ID	T_id	StationID	ArrivalTime	DepartureTime
1	1	1	08:00:00	08:15:00
2	1	2	09:00:00	09:15:00
3	2	2	10:00:00	10:15:00
4	2	3	11:00:00	11:15:00
5	3	3	12:00:00	12:15:00
6	3	4	13:00:00	13:15:00
7	4	4	14:00:00	14:15:00
8	4	5	15:00:00	15:15:00
9	5	5	16:00:00	16:15:00
10	5	6	17:00:00	17:15:00

10 rows in set (0.00 sec)

Query : Retrieve all train names.
mysql> SELECT T_Name FROM Trains;

```
mysql> SELECT T_Name FROM Trains;
+----------------------+
| T_Name               |
+----------------------+
| Rajdhani Express     |
| Shatabdi Express     |
| Duronto Express      |
| Garib Rath           |
| Mahananda Express    |
| Superfast Express    |
| Jan Shatabdi         |
| Humsafar Express     |
| Vande Bharat Express |
| Goods Carrier        |
+----------------------+
10 rows in set (0.00 sec)
```

Query : Retrieve all station names and their locations.
mysql> SELECT StationName, Location FROM Stations;

```
+----------------------+-----------+
| StationName          | Location  |
+----------------------+-----------+
| Mumbai Central       | Mumbai    |
| Howrah Junction      | Kolkata   |
| Chennai Central      | Chennai   |
| New Delhi            | Delhi     |
| Bangalore City       | Bangalore |
| Hyderabad Deccan     | Hyderabad |
| Secunderabad Junction| Hyderabad |
| Ahmedabad Junction   | Ahmedabad |
| Pune Junction        | Pune      |
| Patna Junction       | Patna     |
+----------------------+-----------+
10 rows in set (0.00 sec)
```

Query: Retrieve the names and types of trains with more than 1000 seats.
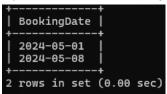mysql> SELECT T_Name, TrainType FROM Trains WHERE Seats > 1000;

```
+-------------------+------------+
| T_Name            | TrainType  |
+-------------------+------------+
| Garib Rath        | Passenger  |
| Superfast Express | Passenger  |
| Jan Shatabdi      | Mail       |
| Humsafar Express  | Super Fast |
+-------------------+------------+
4 rows in set (0.00 sec)
```

Query : Retrieve the names of passengers whose age is greater than 30.
mysql> SELECT RouteID, DepartureTime, ArrivalTime FROM Routes;

```
+---------+---------------+-------------+
| RouteID | DepartureTime | ArrivalTime |
+---------+---------------+-------------+
|       1 | 08:00:00      | 18:00:00    |
|       2 | 09:00:00      | 19:00:00    |
|       3 | 10:00:00      | 20:00:00    |
|       4 | 11:00:00      | 21:00:00    |
|       5 | 12:00:00      | 22:00:00    |
|       6 | 13:00:00      | 23:00:00    |
|       7 | 14:00:00      | 00:00:00    |
|       8 | 15:00:00      | 01:00:00    |
|       9 | 16:00:00      | 02:00:00    |
|      10 | 17:00:00      | 03:00:00    |
+---------+---------------+-------------+
10 rows in set (0.00 sec)
```

Query : Retrieve the booking dates of tickets with compartment starting with 'A'.
mysql> SELECT BookingDate FROM Tickets WHERE Compartment LIKE 'A%';

```
+--------------+
| BookingDate  |
+--------------+
| 2024-05-01   |
| 2024-05-08   |
+--------------+
2 rows in set (0.00 sec)
```
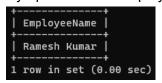
Query : Retrieve the names of passengers whose age is greater than 30.
mysql> SELECT PassengerName FROM Passengers WHERE Age > 30;

```
mysql> SELECT PassengerName FROM Passengers WHERE Age > 30;
+---------------+
| PassengerName |
+---------------+
| Anita Desai   |
| Vikram Patil  |
| Sneha Reddy   |
| Sunil Mehta   |
+---------------+
4 rows in set (0.00 sec)
```
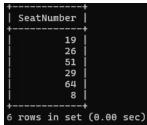
Query : Retrieve the names of employees who are station masters.
mysql> SELECT EmployeeName FROM Employees WHERE Position = 'Station Master';

```
+---------------+
| EmployeeName  |
+---------------+
| Ramesh Kumar  |
+---------------+
1 row in set (0.00 sec)
```

Query: Retrieve the seat numbers of tickets booked after 2024-05-05.
mysql> SELECT SeatNumber FROM Tickets WHERE BookingDate > '2024-05-05';

```
+------------+
| SeatNumber |
+------------+
|         19 |
|         26 |
|         51 |
|         29 |
|         64 |
|          8 |
+------------+
6 rows in set (0.00 sec)
```

Query : Retrieve the names of passengers who booked tickets on the Mahananda Express.
mysql> SELECT p.PassengerName FROM Passengers p
    -> JOIN Tickets t ON p.PassengerID = t.PassengerID
    -> JOIN Routes r ON t.RouteID = r.RouteID
    -> JOIN Trains tr ON r.T_id = tr.T_id
    -> WHERE tr.T_Name = 'Mahananda Express';

```
+---------------+
| PassengerName |
+---------------+
| Vikram Patil  |
+---------------+
1 row in set (0.01 sec)
```

Query : Retrieve the total number of seats for each train.
mysql> SELECT T_Name, Seats FROM Trains;

```
+----------------------+-------+
| T_Name               | Seats |
+----------------------+-------+
| Rajdhani Express     |  1000 |
| Shatabdi Express     |   800 |
| Duronto Express      |   900 |
| Garib Rath           |  1200 |
| Mahananda Express    |   850 |
| Superfast Express    |  1100 |
| Jan Shatabdi         |  1500 |
| Humsafar Express     |  1100 |
| Vande Bharat Express |   750 |
| Goods Carrier        |   100 |
+----------------------+-------+
10 rows in set (0.00 sec)
```

Query : Retrieve the route details for tickets booked by passengers aged 25.

```
+---------+------------+------------+
| RouteID | S_StationID | E_StationID |
+---------+------------+------------+
|       2 |          2 |          4 |
+---------+------------+------------+
1 row in set (0.01 sec)
```

Query : Retrieve the contact information of passengers who booked tickets after 2024-05-06.
mysql> SELECT Contact_Info FROM Passengers WHERE PassengerID IN (SELECT PassengerID FROM Tickets WHERE BookingDate > '2024-05-06');

```
+--------------+
| Contact_Info |
+--------------+
| 6543210987   |
| 8210987654   |
| 9109876543   |
| 7098765432   |
| 8987654321   |
+--------------+
5 rows in set (0.00 sec)
```

Query : Retrieve the positions of employees whose names start with 'R'.
mysql> SELECT Position FROM Employees WHERE EmployeeName LIKE 'R%';

```
+---------------------+
| Position            |
+---------------------+
| Station Master      |
| Platform Supervisor |
+---------------------+
2 rows in set (0.00 sec)
```
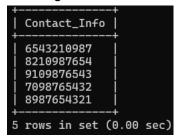
Query : Retrieve the arrival times of schedules for trains starting from station 1.
mysql> SELECT ArrivalTime FROM Schedules WHERE StationID = 1;

```
+-------------+
| ArrivalTime |
+-------------+
| 08:00:00    |
+-------------+
1 row in set (0.01 sec)
```

Query : Retrieve the station names and departure times of schedules for trains ending at station 4.
mysql> SELECT st.StationName, sc.DepartureTime
　　-> FROM Schedules sc
　　-> JOIN Stations st ON sc.StationID = st.StationID
　　-> WHERE sc.StationID IN (SELECT E_StationID FROM Routes WHERE E_StationID = 4);

```
+-------------+---------------+
| StationName | DepartureTime |
+-------------+---------------+
| New Delhi   | 13:15:00      |
| New Delhi   | 14:15:00      |
+-------------+---------------+
2 rows in set (0.01 sec)
```
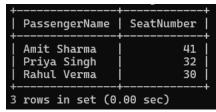
Query : Retrieve the passenger names and seat numbers of tickets booked on or before 2024-05-03.
mysql> SELECT p.PassengerName, t.SeatNumber
　　-> FROM Passengers p
　　-> JOIN Tickets t ON p.PassengerID = t.PassengerID
　　-> WHERE t.BookingDate <= '2024-05-03';

```
+---------------+------------+
| PassengerName | SeatNumber |
+---------------+------------+
| Amit Sharma   |         41 |
| Priya Singh   |         32 |
| Rahul Verma   |         30 |
+---------------+------------+
3 rows in set (0.00 sec)
```

Query : Retrieve the names of trains that have 'Express' in their name.
mysql> SELECT T_Name FROM Trains WHERE T_Name LIKE '%Express%';

```
+----------------------+
| T_Name               |
+----------------------+
| Rajdhani Express     |
| Shatabdi Express     |
| Duronto Express      |
| Mahananda Express    |
| Superfast Express    |
| Humsafar Express     |
| Vande Bharat Express |
+----------------------+
7 rows in set (0.00 sec)
```

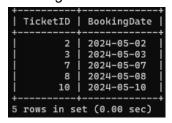Query : Retrieve the ages and genders of passengers who booked tickets with seat numbers starting with 'H'.
mysql> SELECT p.Age, p.Gender
　　-> FROM Passengers p
　　-> JOIN Tickets t ON p.PassengerID = t.PassengerID
　　-> WHERE t.Compartment LIKE 'H%';

```
+------+--------+
| Age  | Gender |
+------+--------+
|   35 | Female |
|   27 | Female |
+------+--------+
2 rows in set (0.00 sec)
```

Query : Retrieve the ticket IDs and booking dates for passengers aged less than 30.
mysql> SELECT TicketID, BookingDate FROM Tickets WHERE PassengerID IN (SELECT PassengerID FROM Passengers WHERE Age < 30);

```
+----------+-------------+
| TicketID | BookingDate |
+----------+-------------+
|        2 | 2024-05-02  |
|        3 | 2024-05-03  |
|        7 | 2024-05-07  |
|        8 | 2024-05-08  |
|       10 | 2024-05-10  |
+----------+-------------+
5 rows in set (0.00 sec)
```

Query : Retrieve the contact information of passengers who booked tickets on the Rajdhani Express.
mysql> SELECT p.Contact_Info
    -> FROM Passengers p
    -> JOIN Tickets t ON p.PassengerID = t.PassengerID
    -> JOIN Routes r ON t.RouteID = r.RouteID
    -> JOIN Trains tr ON r.T_id = tr.T_id
    -> WHERE tr.T_Name = 'Rajdhani Express';

```
+--------------+
| Contact_Info |
+--------------+
| 9876543210   |
+--------------+
1 row in set (0.00 sec)
```

Query : Try to insert a ticket with a seat number that already exists for the same route and passenger.
mysql> INSERT INTO Tickets (RouteID, PassengerID, SeatNumber, BookingDate, Compartment) VALUES (1, 1, 10, '2024-05-12','A5');

```
Query OK, 1 row affected (0.01 sec)
```

Query : Try to insert a passenger with an age less than 18.
mysql> INSERT INTO Passengers (PassengerName, Age, Gender, Contact_Info) VALUES ('Ravi Kumar', 16, 'Male', '1234567890');

```
Query OK, 1 row affected (0.01 sec)
```

Query : To create a view .
mysql> CREATE VIEW SimpleTicketDetails AS SELECT t.TicketID, p.PassengerName,p.Contact_Info, tr.T_Name AS TrainName, s1.StationName AS SourceStation, s2.StationName AS DestinationStation, r.DepartureTime, r.ArrivalTime, t.SeatNumber, t.BookingDate FROM Tickets t JOIN Passengers p ON t.PassengerID = p.PassengerID JOIN Routes r ON t.RouteID = r.RouteID JOIN Trains tr ON r.T_id = tr.T_id JOIN Stations s1 ON r.S_StationID = s1.StationID JOIN Stations s2 ON r.E_StationID = s2.StationID;

```
Query OK, 0 rows affected (0.01 sec)
```

mysql> SELECT * FROM SimpleTicketDetails WHERE PassengerName = 'Amit Sharma';

```
mysql> SELECT * FROM SimpleTicketDetails WHERE PassengerName = 'Amit Sharma';
+----------+---------------+--------------+------------------+----------------+--------------------+---------------+-------------+------------+-------------+
| TicketID | PassengerName | Contact_Info | TrainName        | SourceStation  | DestinationStation | DepartureTime | ArrivalTime | SeatNumber | BookingDate |
+----------+---------------+--------------+------------------+----------------+--------------------+---------------+-------------+------------+-------------+
|        1 | Amit Sharma   | 9876543210   | Rajdhani Express | Mumbai Central | New Delhi          | 08:00:00      | 18:00:00    |         41 | 2024-05-01  |
|       13 | Amit Sharma   | 9876543210   | Rajdhani Express | Mumbai Central | New Delhi          | 08:00:00      | 18:00:00    |         10 | 2024-05-12  |
+----------+---------------+--------------+------------------+----------------+--------------------+---------------+-------------+------------+-------------+
2 rows in set (0.01 sec)
```

mysql> SELECT * FROM SimpleTicketDetails WHERE TrainName = 'Rajdhani Express';

```
mysql> SELECT * FROM SimpleTicketDetails WHERE TrainName = 'Rajdhani Express';
+----------+---------------+--------------+------------------+----------------+--------------------+---------------+-------------+------------+-------------+
| TicketID | PassengerName | Contact_Info | TrainName        | SourceStation  | DestinationStation | DepartureTime | ArrivalTime | SeatNumber | BookingDate |
+----------+---------------+--------------+------------------+----------------+--------------------+---------------+-------------+------------+-------------+
|        1 | Amit Sharma   | 9876543210   | Rajdhani Express | Mumbai Central | New Delhi          | 08:00:00      | 18:00:00    |         41 | 2024-05-01  |
|       13 | Amit Sharma   | 9876543210   | Rajdhani Express | Mumbai Central | New Delhi          | 08:00:00      | 18:00:00    |         10 | 2024-05-12  |
+----------+---------------+--------------+------------------+----------------+--------------------+---------------+-------------+------------+-------------+
2 rows in set (0.01 sec)
```

mysql> SELECT * FROM SimpleTicketDetails WHERE BookingDate BETWEEN
'2024-05-01' AND '2024-05-31';

```
mysql> SELECT * FROM SimpleTicketDetails WHERE BookingDate BETWEEN '2024-05-01' AND '2024-05-31';
+----------+---------------+--------------+----------------------+----------------------+----------------------+---------------+-------------+------------+-------------+
| TicketID | PassengerName | Contact_Info | TrainName            | SourceStation        | DestinationStation   | DepartureTime | ArrivalTime | SeatNumber | BookingDate |
+----------+---------------+--------------+----------------------+----------------------+----------------------+---------------+-------------+------------+-------------+
|        1 | Amit Sharma   | 9876543210   | Rajdhani Express     | Mumbai Central       | New Delhi            | 08:00:00      | 18:00:00    |         41 | 2024-05-01  |
|        2 | Priya Singh   | 8765432109   | Shatabdi Express     | Howrah Junction      | New Delhi            | 09:00:00      | 19:00:00    |         32 | 2024-05-02  |
|        3 | Rahul Verma   | 7654321098   | Duronto Express      | Chennai Central      | New Delhi            | 10:00:00      | 20:00:00    |         30 | 2024-05-03  |
|        4 | Anita Desai   | 6543210987   | Garib Rath           | New Delhi            | Bangalore City       | 11:00:00      | 21:00:00    |         19 | 2024-05-04  |
|        5 | Vikram Patil  | 5432109876   | Mahananda Express    | Bangalore City       | Hyderabad Deccan     | 12:00:00      | 22:00:00    |         10 | 2024-05-04  |
|        6 | Sneha Reddy   | 4321098765   | Superfast Express    | Hyderabad Deccan     | Secunderabad Junction| 13:00:00      | 23:00:00    |         26 | 2024-05-06  |
|        7 | Rakesh Gupta  | 8210987654   | Jan Shatabdi         | Secunderabad Junction| Ahmedabad Junction   | 14:00:00      | 00:00:00    |         51 | 2024-05-07  |
|        8 | Neha Kapoor   | 9109876543   | Humsafar Express     | Ahmedabad Junction   | Pune Junction        | 15:00:00      | 01:00:00    |         29 | 2024-05-08  |
|        9 | Sunil Mehta   | 7098765432   | Vande Bharat Express | Pune Junction        | Patna Junction       | 16:00:00      | 02:00:00    |         64 | 2024-05-09  |
|       10 | Meera Nair    | 8987654321   | Goods Carrier        | Patna Junction       | Mumbai Central       | 17:00:00      | 03:00:00    |          8 | 2024-05-10  |
|       13 | Amit Sharma   | 9876543210   | Rajdhani Express     | Mumbai Central       | New Delhi            | 08:00:00      | 18:00:00    |         10 | 2024-05-12  |
+----------+---------------+--------------+----------------------+----------------------+----------------------+---------------+-------------+------------+-------------+
11 rows in set (0.00 sec)
```