

```
CREATE SCHEMA IF NOT EXISTS railway_system;
show databases;
use railway_system;
```

```
CREATE TABLE IF NOT EXISTS Reservation (
Train_id int,
Train_name Text,
Train_type TEXT,
Coaches TEXT,
PNR_no int,
First_name TEXT,
Last_name TEXT,
Contact TEXT,
Email_id TEXT,
Booking_id text,
Booking_date date,
Source_station TEXT,
Destination_station TEXT,
Seat_alloted TEXT,
State TEXT,
City TEXT,
Duration_minutes INT,
Payment_mode TEXT,
Fair int,
Booking_status TEXT,
Meal_booked BOOLEAN);
```

```
insert into Reservation (Train_id, Train_name, Train_type, Coaches,PNR_no,
First_name, Last_name, Contact, Email_id, Booking_id, Booking_date,
Source_station, Destination_station, Seat_alloted, State, City,
Duration_minutes, Payment_mode, Fair, Booking_status, Meal_booked)
values
(12490, 'Samparak_Kranti','Express', 25,45327839, 'Sneha', 'Jain',
9876543210, 'sneha@example.com', 6, '2023/09/25', 'Jaipur', 'Delhi', 5,
'Rajasthan', 'Jaipur', 180, 'Online', 640, 'Confirmed', true),
(11450, 'Varanasi Super', 'Express', 25,47836904, 'Rahul', 'Verma',
8765432109, 'rahul@example.com', 7, '2023/08/21', 'Mumbai', 'Pune', 3,
'Maharashtra', 'Mumbai', 120, 'Online', 750, 'Waiting', false),
(42999, 'Memu 2', 'Passenger', 10, 45527842, 'Amit', 'Yadav',
9876543211, 'amit@example.com', 8, '2023/07/15', 'Delhi', 'Agra', 6, 'UP',
'Delhi', 240, 'Cash', 350, 'Confirmed', true),
(80124, 'Vande Bharat', 'Superfast', 20,45627843, 'Neha', 'Singh',
8765432108, 'neha@example.com', 9, '2023/10/08', 'Kolkata', 'Chennai', 8,
'West Bengal', 'Kolkata', 300, 'Cash', 270, 'Confirmed', true),
(71424, 'Shanti Express', 'Express', 22,45727844, 'Rajat', 'Mishra',
9876543212, 'rajat@example.com', 10, '2023/11/28', 'Bhopal', 'Indore', 3,
'MP', 'Bhopal', 90, 'Online', 300, 'Waiting', false),
(62374, 'Rajdhani ', 'Rajdhani', 25,45927845, 'Sachin', 'Kumar',
9456789123, 'sachin@example.com', 11, '2023/09/10', 'Varanasi', 'Lucknow',
4, 'UP', 'Varanasi', 150, 'Cash', 450, 'Confirmed', true),
(56479, 'Duronto Express', 'Express', 18,46027846, 'Anjali', 'Gupta',
9876543213, 'anjali@example.com', 12, '2023/07/30', 'Chennai',
```

```

'Bangalore', 5, 'Tamil Nadu', 'Chennai', 180, 'Online', 800, 'Confirmed',
false),
(47941, 'Shatabdi', 'Super fast', 15, 46127847, 'Vishal', 'Sharma',
8765432107, 'vishal@example.com', 13, '2023/10/15', 'Hyderabad',
'Bangalore', 7, 'Telangana', 'Hyderabad', 210, 'Cash', 740, 'Confirmed',
true),
(25473, 'Local', 'Passenger', 18, 46227848, 'Preeti', 'Verma',
9876543214, 'preeti@example.com', 14, '2023/11/05', 'Ahmedabad', 'Surat',
3, 'Gujarat', 'Ahmedabad', 120, 'Online', 1200, 'Confirmed', false),
(14789, 'Darbhanga Expresss', 'Superfast', 20, 46327849, 'Aryan',
'Rajput', 8765432106, 'aryan@example.com', 15, '2023/09/20', 'Delhi',
'Jaipur', 6, 'Rajasthan', 'Delhi', 240, 'Online', 550, 'Confirmed', true),
(14228, 'Mahamna', 'Express', 20, 45267838, 'Manish', 'Sharma',
9569090882, 'dixit571@gmail.com', 1, '2023/07/12', 'Harpalpur', 'Delhi',
1, 'MP', 'Harpalpur', '120', 'Online', 640, 'Waiting', False),
(25486, 'Ambedkar Express', 'Express', 24, 45327840, 'Vipul',
'Rabari', 9545789346, 'vr71@gmail.com', 2, '2022/09/11', 'Ahmedabad',
'Mumbai', 2, 'Gujrat', 'Ahmedabad', '270', 'Cash', 780, 'Confirmed',
True),
(47111, 'Enter_City', 'Express', 22, 45247875, 'Harshit', 'Shahu',
9046987634, 'kp91@gmail.com', 3, '2023/06/10', 'Ropad', 'Delhi', 2,
'Punjab', 'Ropad', '460', 'Cash', 220, 'Confirmed', True),
(14816, 'Memu ', 'Passenger', 12, 45027849, 'Prince', 'Parihar',
9935677846, 'dg41@gmail.com', 4, '2023/08/16', 'Chhatarpur', 'Bhopal', 4,
'MP', 'Chhatarpur', '90', 'Online', 100, 'Waiting', False),
(48231, 'Chambal', 'Express', 25, 45827848, 'Kapil', 'Payak',
8765942461, 'rk51@gmail.com', 5, '2023/11/03', 'Lucknow', 'Banda', 10,
'UP', 'Lucknow', '620', 'Cash', 1350, 'Confirmed', True);

```

```

USE railway_system;
ALTER TABLE Reservation
ADD COLUMN km INT;
select * from Reservation;

```

```
-- Update the new column with values for existing rows
```

```

UPDATE Reservation
SET km = CASE
    WHEN Train_id = 12490 THEN 840
    WHEN Train_id = 11450 THEN 200
    WHEN Train_id = 42999 THEN 150
    WHEN Train_id = 80124 THEN 250
    WHEN Train_id = 71424 THEN 300
    WHEN Train_id = 62374 THEN 180
    WHEN Train_id = 56479 THEN 220
    WHEN Train_id = 47941 THEN 270
    WHEN Train_id = 25473 THEN 320
    WHEN Train_id = 14789 THEN 180
    WHEN Train_id = 14228 THEN 120
    WHEN Train_id = 25486 THEN 270
    WHEN Train_id = 47111 THEN 460
    WHEN Train_id = 14816 THEN 90
    WHEN Train_id = 48231 THEN 620
    ELSE 0
END;

```

```
select * from Reservation;
```

```
SELECT First_name, Last_name  
FROM Reservation;
```

```
SELECT DISTINCT Train_type  
FROM Reservation;
```

```
SELECT COUNT(*)  
FROM Reservation;
```

```
SELECT Train_name,First_name,Booking_status  
FROM Reservation  
WHERE Booking_status = 'Confirmed' OR Booking_status = 'Waiting';
```

```
SELECT First_name,Train_name  
FROM Reservation  
WHERE Meal_booked = false;
```

```
SELECT state, count('Reservation')  
FROM Reservation  
WHERE state = 'MP'  
GROUP BY State;
```

```
SELECT AVG(Fair)  
FROM Reservation;
```

```
SELECT PNR_no,Train_id,Booking_date  
FROM Reservation  
WHERE Booking_date between '2023-08-21' AND '2023-10-08'  
order by Booking_date;
```

```
SELECT Train_name, Sum(fair) AS Reservation_price  
FROM Reservation  
GROUP BY Train_name  
ORDER BY Reservation_price DESC  
LIMIT 4;
```

```
SELECT * FROM Reservation  
WHERE Duration_minutes > 120;
```

```
SELECT *  
FROM Reservation  
WHERE Source_station = 'Delhi' AND Destination_station = 'Mumbai';
```

```
SELECT AVG(Duration_minutes)  
FROM Reservation;
```

```
SELECT * FROM Reservation  
WHERE Payment_mode = 'Cash';
```

```
SELECT Source_station, SUM(Duration_minutes) AS Total_Duration
FROM Reservation
GROUP BY Source_station;
```

```
SELECT Train_name, First_name, Contact, Coaches
FROM Reservation
WHERE Train_id IN (SELECT Train_id FROM Reservation WHERE Coaches > 20);
```

```
SELECT AVG(Fair)
FROM Reservation
WHERE Booking_status = 'Confirmed';
```

```
SELECT First_name, Last_name, COUNT(*) AS Reservation_Count
FROM Reservation
GROUP BY First_name, Last_name
HAVING COUNT(*) > 1;
```

```
SELECT Train_name, Train_id, (km * fair) AS Total_Revenue
FROM Reservation
ORDER BY Total_Revenue ASC
LIMIT 4
OFFSET 3;
```

```
SELECT First_name, Last_name
FROM Reservation
GROUP BY First_name, Last_name
HAVING COUNT(DISTINCT Train_type) > 1;
```

```
SELECT Payment_mode
FROM Reservation
WHERE Payment_mode LIKE '%h';
```

```
SELECT Source_station, Destination_station, COUNT(*) AS Reservation_Count
FROM Reservation
GROUP BY Source_station, Destination_station;
```

```
SELECT Train_type, AVG(Duration_minutes) AS Average_Duration
FROM Reservation
GROUP BY Train_type;
```

```
SELECT Payment_mode, COUNT(*) AS Payment_Mode_Count
FROM Reservation
GROUP BY Payment_mode
ORDER BY Payment_Mode_Count DESC
LIMIT 1;
```

```
SELECT MAX(Duration_minutes) AS Max_Duration, km
FROM Reservation
GROUP BY km;
```

```

SELECT MAX(Duration_minutes) AS Max_Duration, km
FROM Reservation
GROUP BY km
UNION
SELECT MIN(Duration_minutes) AS Min_Duration, km
FROM Reservation
GROUP BY km;

```

```

ALTER TABLE Reservation
ADD COLUMN Age INT;
UPDATE Reservation
SET Age = CASE
    WHEN Train_id = 12490 THEN 15
    WHEN Train_id = 11450 THEN 20
    WHEN Train_id = 42999 THEN 18
    WHEN Train_id = 80124 THEN 25
    WHEN Train_id = 71424 THEN 30
    WHEN Train_id = 62374 THEN 18
    WHEN Train_id = 56479 THEN 22
    WHEN Train_id = 47941 THEN 27
    WHEN Train_id = 25473 THEN 32
    WHEN Train_id = 14789 THEN 60
    WHEN Train_id = 14228 THEN 45
    WHEN Train_id = 25486 THEN 50
    WHEN Train_id = 47111 THEN 32
    WHEN Train_id = 14816 THEN 28
    WHEN Train_id = 48231 THEN 18
    ELSE 0
END;

```

```

select * from Reservation;

```

```

SELECT First_name, Age,
CASE
    WHEN Age < 18 THEN '2% discount'
    WHEN Age >= 18 AND Age < 50 THEN 'Both'
    ELSE 'Insurance'
END AS Age_Difference
FROM Reservation;

```

```

SELECT First_name, Train_id, Train_name
FROM Reservation
WHERE Train_type IN ('Express', 'Superfast', 'Memu')
GROUP BY First_name, Train_id, Train_name
HAVING COUNT(DISTINCT Train_type) = 1;

```

```

SELECT SUM(Duration_minutes) AS Total_Duration
FROM Reservation;

```

```

SELECT Source_station
FROM Reservation
WHERE Source_station LIKE '_u_';

```

```
select Train_name,First_name
from Reservation
where Train_name LIKE "V%T" or First_name LIKE "%a";
```

```
SELECT Train_type,
(SUM(CASE WHEN Booking_status = 'Confirmed' THEN 1 ELSE 0 END) / COUNT(*))
* 100 AS Confirmed_Booking_Percentage
FROM Reservation
GROUP BY Train_type
ORDER BY Confirmed_Booking_Percentage DESC;
```

```
SELECT Train_id AS Main_id, first_name AS name
FROM Reservation;
```

```
SELECT Email_id, First_name
FROM Reservation
WHERE Email_id BETWEEN 'f' AND 's';
```

```
SELECT age
FROM Reservation
WHERE Age = (SELECT MIN(Age) FROM Reservation);
```

```
SELECT Fair, km
FROM Reservation
WHERE Fair BETWEEN 200 AND 600;
SELECT Coaches
FROM Reservation
WHERE EXISTS (SELECT PNR_no FROM Reservation WHERE Train_id = 42999)
LIMIT 5;
```

```
SELECT Seat_alloted,Train_name,Train_type
FROM Reservation
WHERE Fair = ANY
(SELECT Fair FROM Reservation WHERE City = 'Delhi');
```

```
SELECT First_name, city,Coaches,Train_name
FROM Reservation
WHERE city in ('Delhi','Mumbai','Delhi');
```