**Questions And Answers**

**Railway System Database**

**1) Find the total number of passengers who have booked tickets on each train?**

SELECT t.TrainName, COUNT(DISTINCT tick.PassengerID) AS TotalPassengers

FROM Tickets tick

JOIN Schedules s ON tick.ScheduleID = s.ScheduleID

JOIN Trains t ON s.TrainID = t.TrainID

GROUP BY t.TrainName;

**2)Calculate the total number of schedules available for each station, either as a departure or arrival station?**

SELECT

s.StationName,

(COUNT(sc.DepartureStationID) + COUNT(sc.ArrivalStationID)) AS TotalSchedules

FROM Stations LEFT JOIN

Schedules sc ON s.StationID = sc.DepartureStationID OR s.StationID = sc.ArrivalStationID

GROUP BY

s.StationName;

**3) List the total number of passengers by gender who have traveled on the Rajdhani Express?**

SELECT p.Gender, COUNT(p.PassengerID) AS TotalPassengers

FROM Passengers p

JOIN Tickets t ON p.PassengerID = t.PassengerID

JOIN Schedules s ON t.ScheduleID = s.ScheduleID

JOIN Trains tr ON s.TrainID = tr.TrainID

WHERE tr.TrainName = 'Rajdhani Express'

GROUP BY p.Gender;

**4)Find the average age of passengers who have traveled from 'New Delhi' station?**

SELECT avg(p.Age) AS AVG\_AGE\_Passengers

FROM Passengers p

JOIN tickets t ON P.PassengerID=t.PassengerID

JOIN Schedules s ON t.ScheduleID = s.ScheduleID

JOIN Stations st ON s.DepartureStationID = st.StationID

where st.StationName= 'New Delhi';

**5)Calculate the total number of tickets booked for each train type (e.g., Express, Passenger)?**

select t.TrainType,count(tk.TicketID) as Total\_Tickets from tickets tk

JOIN Schedules s ON tk.ScheduleID = s.ScheduleID

JOIN Trains t ON s.TrainID = t.TrainID

group by t.TrainType;

**6)List all passengers along with the trains they have traveled on, including the train name and type?**

select p.PassengerName,t.TrainName,t.TrainType from Passengers p

JOIN Tickets tk ON p.PassengerID = tk.PassengerID

JOIN Schedules s ON tk.ScheduleID = s.ScheduleID

JOIN Trains t ON s.TrainID = t.TrainID;

**7)Find the schedule details for the 'Rajdhani Express', including station names for both departure and arrival?**

select stations.StationName,Schedules.DepartureTime,Schedules.ArrivalTime from schedules

JOIN tickets ON tickets.ScheduleID = Schedules.ScheduleID

JOIN Trains ON Schedules .TrainID = Trains .TrainID

JOIN Stations ON Schedules.DepartureStationID = Stations.StationID

where TrainName= 'Rajdhani Express';

**8)List all passengers who have booked tickets on a train that departs from 'Chhatrapati Shivaji Maharaj Terminus'?**

select p.PassengerName FROM Passengers p

JOIN Tickets t ON p.PassengerID = t.PassengerID

JOIN Schedules s ON t.ScheduleID = s.ScheduleID

JOIN Stations st ON s.DepartureStationID = st.StationID

where StationName= 'Chhatrapati Shivaji Maharaj Terminus';

**9)Find all trains that pass through 'Pune Junction' station, listing the train name and type?**

select Tr.TrainName,tr.TrainType from Trains tr

JOIN schedules ON Schedules .TrainID = Tr.TrainID

JOIN Stations ON Schedules.DepartureStationID = Stations.StationID

where StationName='Pune Junction'

group by Tr.TrainName,tr.TrainType ;

**10)List all schedules where the train departs from 'Bengaluru City Junction' , along with the departure and arrival times?**

select tr.TrainName,stations.StationName,Schedules.DepartureTime,Schedules.ArrivalTime from schedules

JOIN Trains tr ON Schedules .TrainID = Tr.TrainID

JOIN Stations ON Schedules.DepartureStationID = Stations.StationID

where StationName ='Bengaluru City Junction';

**11)Rank passengers by the number of tickets they have booked, showing the passenger name and rank?**

select passengers.PassengerName,count(t.TicketID) as TicketsBooked,

rank() over( order by count(t.TicketID)) as rank\_tickets

from passengers JOIN Tickets t ON passengers .PassengerID = t.PassengerID

group by passengers.PassengerName;

**12)Create a view that shows the total number of schedules available for each train, including train name and type?**

CREATE VIEW TrainScheduleCountView AS

SELECT t.TrainID,t.TrainName,t.TrainType,COUNT(s.ScheduleID) AS TotalSchedules

FROM Trains t

JOIN Schedules s ON t.TrainID = s.TrainID

GROUP BY t.TrainID, t.TrainName, t.TrainType;

select \* from TrainScheduleCountView;