set A

1)Show all trains information travelling between Goa Mumbai and Ajmer-Lonavala where at least half the coaches are due for maintenance on or before 30 November this year.

select distinct t.train\_id, rs.route\_id, r.route\_name from train t join RunningSchedule rs on t.train\_id = rs.train\_id join route r on rs.route\_id = r.route\_id where r.route\_name like '%Goa-Mumbai%' or r.route\_name like '%Ajmer-Lonavala%' and t.train\_id in (select c.train\_id from coaches c where c.train\_id = t.train\_id group by c.train\_id having sum( case when c.distance\_after\_last\_maintenance > 5000 OR date\_add(c.last\_maintainence\_date,INTERVAL 6 MONTH)<='2023-11-30' then 1 else 0 end ) >= (count(\*) / 2) );

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| train\_id | route\_id | route\_name |

+----------+----------+-----------------+

| t11 | R017 | Ajmer-Lonavala |

| t13 | R020 | Goa-Mumbai |

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2)List all the routes in descending order of seats sold, including route information and distribution of seats sold (Children, Adult, Senior Citizen) in the month of October this year.

select r.route\_id,r.route\_name,r.distance,r.time\_taken,r.operating\_days,r.start\_location,r.end\_location,count(case when p.age\_group = 'Child' then 1 end) as children\_sold,count(case when p.age\_group = 'Adult' then 1 end) as adult\_sold,count(case when p.age\_group = 'Senior' then 1 end) as senior\_sold, count(\*) as total\_seats\_sold from route r left join bookticket b on r.route\_id = b.route\_id left join passenger p on

b.passenger\_id = p.passenger\_id where b.bookingdate >= '2023-10-01' and b.bookingdate <= '2023-10-31' and b.status = 'confirm' group by r.route\_id, r.route\_name order by total\_seats\_sold desc;

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| route\_id | route\_name | distance | time\_taken | operating\_days | start\_location | end\_location | children\_sold | adult\_sold | senior\_sold | total\_seats\_sold |

+----------+-----------------------------+----------+------------------------+---------------------------------------+-------------------------+---------------+---------------+------------+-------------+------------------+

| R010 | Mumbai - Goa | 588 | 6 hours | Every day | Mumbai | Goa | 5 | 3 | 2 | 10 |

| R006 | Bhopal-Delhi | 700 | 7 hours and 45 minutes | 6 days in a week but not on Saturdays | Bhopal | Delhi | 3 | 2 | 0 | 5 |

| R001 | Mumbai Central- Gandhinagar | 548 | 5 hours 40 minutes | 6 days a week except Sundays | Mumbai Central | Gandhinagar | 2 | 0 | 0 | 2 |

| R002 | New Delhi - Himachal | 412 | 6 hours 10 minutes | 6 days a week except Thursdays | NewDelhi | Himachal | 1 | 1 | 0 | 2 |

| R020 | Goa-Mumbai | 588 | 6 hours | Every day | Goa | Mumbai | 1 | 0 | 0 | 1 |

| R009 | Bhopal - Indore | 246 | 3 hours | Every day | Bhopal | Indore | 0 | 1 | 0 | 1 |

| R008 | Dharwad - Bengaluru | 432 | 5 hours | "Monday | Wednesday and Saturday" | Dharwad | 0 | 1 | 0 | 1 |

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3) List all agents’ information with more than 10 confirmed bookings in the month of September this year.

select a.agent\_id,a.agentname, a.contact\_number, a.address, count(bt.ticket\_id) as confirmed\_bookings from agent a join bookticket bt

on a.agent\_id = bt.agent\_id where month(bt.bookingdate) = 9 and YEAR(bt.bookingdate) = YEAR(CURRENT\_DATE()) and bt.status = 'confirm' group by a.agent\_id having count(bt.ticket\_id) > 10;

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| agent\_id | agentname | contact\_number | address | confirmed\_bookings |

+----------+-------------+----------------+-----------------+--------------------+

| a23 | Yuvaan Rana | 2147483647 | 567 Pear Street | 13 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |

4) Display the details of the route most travelled by Senior Citizens.

select r.route\_id, r.route\_name,r.distance,r.time\_taken,r.operating\_days,r.start\_location,r.end\_location, count(p.age\_group) as senior\_passengers\_count from route r join bookticket b on r.route\_id = b.route\_id join passenger p on b.passenger\_id = p.passenger\_id where p.age\_group = 'Senior' group by r.route\_id, r.route\_name order by senior\_passengers\_count desc limit 1;

+----------+--------------+----------+------------+----------------+----------------+--------------+-------------------------+

| route\_id | route\_name | distance | time\_taken | operating\_days | start\_location | end\_location | senior\_passengers\_count |

+----------+--------------+----------+------------+----------------+----------------+--------------+-------------------------+

| R010 | Mumbai - Goa | 588 | 6 hours | Every day | Mumbai | Goa | 4 |

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5) Display the details of the route where a train was always on time.

select \* from route r where not exists (select 1 from RunningSchedule rs where rs.route\_id=r.route\_id and rs.isdelayover30min=1);

+----------+-------------------------------+----------+------------------------+----------------------------------------+-------------------------+------------------+

| route\_id | route\_name | distance | time\_taken | operating\_days | start\_location | end\_location |

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| R001 | Mumbai Central- Gandhinagar | 548 | 5 hours 40 minutes | 6 days a week except Sundays | Mumbai Central | Gandhinagar |

| R002 | New Delhi - Himachal | 412 | 6 hours 10 minutes | 6 days a week except Thursdays | NewDelhi | Himachal |

| R003 | Secunderabad - Visakhapatnam | 500 | 8 hrs 30 minutes | once a week (every Sunday) | Secunderabad | Visakhapatnam |

| R004 | Mumbai -SainagarShirdi | 248 | 5 hours 20 minutes | 6 days in a week but not on Tuesdays | Mumbai | SainagarShirdi |

| R005 | Mumbai - Solapur | 400 | 6 hours and 35 minutes | 6 days in a week but not on Wednesdays | Mumbai | Solapur |

| R006 | Bhopal-Delhi | 700 | 7 hours and 45 minutes | 6 days in a week but not on Saturdays | Bhopal | Delhi |

| R007 | Lonavala - Ajmer | 1062 | 10 hours 45 minutes | once a week (every Saturday) | Lonavla | Ajmer |

| R008 | Dharwad - Bengaluru | 432 | 5 hours | "Monday | Wednesday and Saturday" | Dharwad |

| R009 | Bhopal - Indore | 246 | 3 hours | Every day | Bhopal | Indore |

| R010 | Mumbai - Goa | 588 | 6 hours | Every day | Mumbai | Goa |

| R011 | Gandhinagar - Mumbai Central | 548 | 5 hours 40 minutes | 6 days a week except Sundays | Gandhinagar | Mumbai Central |

| R012 | Himachal - New Delhi | 412 | 6 hours 10 minutes | 6 days a week except Thursdays | Himachal | New Delhi |

| R013 | Visakhapatnam - Secunderabad | 500 | 8 hrs 30 minutes | once a week (every Sunday) | Visakhapatnam | Secunderabad |

| R014 | SainagarShirdi - Mumbai | 248 | 5 hours 20 minutes | 6 days in a week but not on Tuesdays | SainagarShirdi | Mumbai |

| R015 | Solapur - Mumbai | 400 | 6 hours and 35 minutes | 6 days in a week but not on Wednesdays | Solapur | Mumbai |

| R016 | Delhi-Bhopal | 700 | 7 hours and 45 minutes | 6 days in a week but not on Saturdays | Delhi | Bhopal |

| R017 | Ajmer-Lonavala | 1062 | 10 hours 45 minutes | once a week (every Saturday) | Ajmer | Lonavala |

| R018 | Bengaluru-Dharwad | 432 | 5 hours | "Monday | Wednesday and Saturday" | Bengaluru |

| R019 | Indore-Bhopal | 246 | 3 hours | Every day | Indore | Bhopal |

| R020 | Goa-Mumbai | 588 | 6 hours | Every day | Goa | Mumbai |

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