CREATE TABLE empl(

emp\_id int NULL,

emp\_name varchar(50) NULL,

salary int NULL,

manager\_id int NULL,

emp\_age int NULL,

dep\_id int NULL,

dep\_name varchar(20) NULL,

gender varchar(10) NULL

) ;

insert into empl values(1,'Ankit',14300,4,39,100,'Analytics','Female');

insert into empl values(2,'Mohit',14000,5,48,200,'IT','Male');

insert into empl values(3,'Vikas',12100,4,37,100,'Analytics','Female');

insert into empl values(4,'Rohit',7260,2,16,100,'Analytics','Female');

insert into empl values(5,'Mudit',15000,6,55,200,'IT','Male');

insert into empl values(6,'Agam',15600,2,14,200,'IT','Male');

insert into empl values(7,'Sanjay',12000,2,13,200,'IT','Male');

insert into empl values(8,'Ashish',7200,2,12,200,'IT','Male');

insert into empl values(9,'Mukesh',7000,6,51,300,'HR','Male');

insert into empl values(10,'Rakesh',8000,6,50,300,'HR','Male');

insert into empl values(11,'Akhil',4000,1,31,500,'Ops','Male');

DROP TABLE empl;

SELECT \* FROM empl;

**-- --Write a sql query to find the details of employee with 3rd highest salary in each dept**

**-- --If there are less than 3 employees in a dept, return the details of emp with the lowest salary**

**-- You can't make multiple CTEs and do union**

**SELECT ABC.EMP\_NAME, ABC.SALARY, ABC.DEP\_NAME FROM**

**(WITH CT AS**

**(SELECT EMP\_NAME, SALARY,DEP\_NAME, dense\_rank() OVER (partition by DEP\_NAME ORDER BY SALARY DESC)AS RANKING FROM EMPL)**

**SELECT \*, MAX(RANKING) OVER (partition by DEP\_NAME) AS DIM FROM CT WHERE RANKING between 1 AND 3 ) ABC WHERE RANKING = DIM;**

**create table call\_details (**

**call\_type varchar(10),**

**call\_number varchar(12),**

**call\_duration int**

**);**

**insert into call\_details**

**values ('OUT','181868',13),('OUT','2159010',8)**

**,('OUT','2159010',178),('SMS','4153810',1),('OUT','2159010',152),('OUT','9140152',18),('SMS','4162672',1)**

**,('SMS','9168204',1),('OUT','9168204',576),('INC','2159010',5),('INC','2159010',4),('SMS','2159010',1)**

**,('SMS','4535614',1),('OUT','181868',20),('INC','181868',54),('INC','218748',20),('INC','2159010',9)**

**,('INC','197432',66),('SMS','2159010',1),('SMS','4535614',1);**

**SELECT \* FROM call\_details;**

**-- Write a sql query to identify phone numbers that satisfy below conditions**

**-- The numbers have both incoming and outgoing calls**

**-- The sum of duration of outgoing calls should be greater than sum of duration of incoming calls**

**WITH CTE AS (**

**WITH CT AS**

**(SELECT A.CALL\_TYPE , A.CALL\_NUMBER, A.CALL\_DURATION AS OUTGOING\_CALL, ifnull(B.CALL\_TYPE, "INC") AS INN , ifnull(B.CALL\_DURATION,0) AS INCOMING FROM**

**(SELECT CALL\_TYPE, CALL\_NUMBER , CALL\_DURATION FROM CALL\_DETAILS WHERE CALL\_TYPE = 'OUT') A**

**LEFT JOIN**

**(SELECT \* FROM CALL\_DETAILS WHERE CALL\_TYPE = 'INC') B ON A.CALL\_NUMBER = B.CALL\_NUMBER )**

**SELECT CALL\_NUMBER, SUM(OUTGOING\_CALL) AS OUTGOING\_DURATION, SUM(INCOMING) AS INCOMING\_DURATION FROM CT GROUP BY CALL\_NUMBER)**

**SELECT CALL\_NUMBER , OUTGOING\_DURATION, INCOMING\_DURATION FROM CTE WHERE OUTGOING\_DURATION > INCOMING\_DURATION;**

**CREATE TABLE booking\_table(**

**Booking\_id VARCHAR(3) NOT NULL**

**,Booking\_date date NOT NULL**

**,User\_id VARCHAR(2) NOT NULL**

**,Line\_of\_business VARCHAR(6) NOT NULL**

**);**

**INSERT INTO booking\_table(Booking\_id,Booking\_date,User\_id,Line\_of\_business) VALUES ('b1','2022-03-23','u1','Flight');**

**INSERT INTO booking\_table(Booking\_id,Booking\_date,User\_id,Line\_of\_business) VALUES ('b2','2022-03-27','u2','Flight');**

**INSERT INTO booking\_table(Booking\_id,Booking\_date,User\_id,Line\_of\_business) VALUES ('b3','2022-03-28','u1','Hotel');**

**INSERT INTO booking\_table(Booking\_id,Booking\_date,User\_id,Line\_of\_business) VALUES ('b4','2022-03-31','u4','Flight');**

**INSERT INTO booking\_table(Booking\_id,Booking\_date,User\_id,Line\_of\_business) VALUES ('b5','2022-04-02','u1','Hotel');**

**INSERT INTO booking\_table(Booking\_id,Booking\_date,User\_id,Line\_of\_business) VALUES ('b6','2022-04-02','u2','Flight');**

**INSERT INTO booking\_table(Booking\_id,Booking\_date,User\_id,Line\_of\_business) VALUES ('b7','2022-04-06','u5','Flight');**

**INSERT INTO booking\_table(Booking\_id,Booking\_date,User\_id,Line\_of\_business) VALUES ('b8','2022-04-06','u6','Hotel');**

**INSERT INTO booking\_table(Booking\_id,Booking\_date,User\_id,Line\_of\_business) VALUES ('b9','2022-04-06','u2','Flight');**

**INSERT INTO booking\_table(Booking\_id,Booking\_date,User\_id,Line\_of\_business) VALUES ('b10','2022-04-10','u1','Flight');**

**INSERT INTO booking\_table(Booking\_id,Booking\_date,User\_id,Line\_of\_business) VALUES ('b11','2022-04-12','u4','Flight');**

**INSERT INTO booking\_table(Booking\_id,Booking\_date,User\_id,Line\_of\_business) VALUES ('b12','2022-04-16','u1','Flight');**

**INSERT INTO booking\_table(Booking\_id,Booking\_date,User\_id,Line\_of\_business) VALUES ('b13','2022-04-19','u2','Flight');**

**INSERT INTO booking\_table(Booking\_id,Booking\_date,User\_id,Line\_of\_business) VALUES ('b14','2022-04-20','u5','Hotel');**

**INSERT INTO booking\_table(Booking\_id,Booking\_date,User\_id,Line\_of\_business) VALUES ('b15','2022-04-22','u6','Flight');**

**INSERT INTO booking\_table(Booking\_id,Booking\_date,User\_id,Line\_of\_business) VALUES ('b16','2022-04-26','u4','Hotel');**

**INSERT INTO booking\_table(Booking\_id,Booking\_date,User\_id,Line\_of\_business) VALUES ('b17','2022-04-28','u2','Hotel');**

**INSERT INTO booking\_table(Booking\_id,Booking\_date,User\_id,Line\_of\_business) VALUES ('b18','2022-04-30','u1','Hotel');**

**INSERT INTO booking\_table(Booking\_id,Booking\_date,User\_id,Line\_of\_business) VALUES ('b19','2022-05-04','u4','Hotel');**

**INSERT INTO booking\_table(Booking\_id,Booking\_date,User\_id,Line\_of\_business) VALUES ('b20','2022-05-06','u1','Flight');**

**;**

**CREATE TABLE user\_table(**

**User\_id VARCHAR(3) NOT NULL**

**,Segment VARCHAR(2) NOT NULL**

**);**

**INSERT INTO user\_table(User\_id,Segment) VALUES ('u1','s1');**

**INSERT INTO user\_table(User\_id,Segment) VALUES ('u2','s1');**

**INSERT INTO user\_table(User\_id,Segment) VALUES ('u3','s1');**

**INSERT INTO user\_table(User\_id,Segment) VALUES ('u4','s2');**

**INSERT INTO user\_table(User\_id,Segment) VALUES ('u5','s2');**

**INSERT INTO user\_table(User\_id,Segment) VALUES ('u6','s3');**

**INSERT INTO user\_table(User\_id,Segment) VALUES ('u7','s3');**

**INSERT INTO user\_table(User\_id,Segment) VALUES ('u8','s3');**

**INSERT INTO user\_table(User\_id,Segment) VALUES ('u9','s3');**

**INSERT INTO user\_table(User\_id,Segment) VALUES ('u10','s3');**

**SELECT \* FROM booking\_table;**

**SELECT \* FROM user\_table**

**--Return a table which has user sement, total user count, users who booked flights in April 2022**

**--user Segment, #users, #users who booked flight in Apr 2022**

**SELECT a.segment, COUNT( DISTINCT a.user\_id) AS Total\_user\_count,**

**COUNT (DISTINCT case when b.line\_of\_business = 'Flight' AND booking\_date BETWEEN '2022-04-01' AND '2022-04-30' then b.user\_id end) AS user\_flight\_april**

**FROM user\_table a LEFT JOIN booking\_table b ON a.user\_id = b.user\_id**

**GROUP BY a.segment**

**--Alternate solution**

**with c1 AS**

**(SELECT a.segment, COUNT( DISTINCT a.user\_id) AS Total\_user\_count**

**FROM user\_table a**

**GROUP BY a.segment),**

**c2 AS**

**(**

**SELECT a.segment, COUNT(DISTINCT a.user\_id) AS user\_april\_flight**

**FROM user\_table a LEFT JOIN booking\_table b ON a.user\_id = b.user\_id**

**WHERE line\_of\_business = 'Flight'**

**AND booking\_date BETWEEN '2022-04-01' AND '2022-04-30'**

**GROUP BY a.segment**

**)**

**SELECT c1.segment, c1.Total\_user\_count, c2.user\_april\_flight**

**FROM c1 INNER JOIN c2 ON c1.segment = c2.segment**

**--Write a query to find users whose first booking is a hotel booking**

**SELECT DISTINCT user\_id**

**FROM (SELECT \*, DENSE\_RANK() OVER (PARTITION BY user\_id ORDER BY booking\_date) AS rnk**

**FROM booking\_table) a**

**WHERE rnk=1 AND line\_of\_business = 'Hotel'**

**--Alternative soln**

**--First booking**

**WITH c1 AS**

**(SELECT user\_id, MIN(booking\_date) AS first\_booking**

**FROM booking\_table**

**GROUP BY user\_id)**

**, c2 AS**

**(SELECT a.user\_id, line\_of\_business, booking\_date , CASE WHEN booking\_date = first\_booking then 1 end AS first\_booking\_flag**

**FROM booking\_table a INNER JOIN c1 ON a.user\_id=c1.user\_id)**

**SELECT user\_id FROM c2**

**WHERE line\_of\_business = 'Hotel' AND first\_booking\_flag = 1**

**--Write a query to find the no. of days between first an last order for all users**

**SELECT user\_id, MIN(booking\_date) AS first\_order\_date, MAX(booking\_date) AS last\_order\_date,**

**MAX(booking\_date) :: timestamp - MIN(booking\_date) :: timestamp AS days\_difference**

**FROM booking\_table**

**GROUP BY user\_id**

**SELECT user\_id, MIN(booking\_date) AS first\_order\_date, MAX(booking\_date) AS last\_order\_date,**

**DATEDIFF(MIN(booking\_date), MAX(booking\_date)) AS days\_difference**

**FROM booking\_table**

**GROUP BY user\_id**

**--DATEDIFF(unit, start\_date, end\_date)**

**--Write a query to count the number of flight and hotel bookings in each of the user segment for the year 2022**

**--Segment, #hotel\_bookings, #flight\_bookings**

**SELECT b.segment, COUNT(case when line\_of\_business = 'Hotel' then a.user\_id end) AS hotel\_count,**

**COUNT(case when line\_of\_business = 'Flight' then a.user\_id end) AS flight\_count**

**FROM booking\_table a INNER JOIN user\_table b ON a.user\_id = b.user\_id**

**WHERE EXTRACT(year FROM booking\_date) = '2022'**

**GROUP BY b.segment**

**-- --Use the output from the query above(c1) to generate the final output for this question**

**WITH c1 AS (**

**SELECT b.segment, line\_of\_business, COUNT(a.user\_id)**

**FROM booking\_table a**

**INNER JOIN user\_table b ON a.user\_id = b.user\_id**

**GROUP BY b.segment, line\_of\_business**

**)**

**SELECT user\_id, TIMESTAMPDIFF(SECOND, MIN(booking\_date), MAX(booking\_date)) as booking\_duration**

**FROM booking\_table**

**GROUP BY user\_id;**