1. ***Represent the “book\_date” column in “yyyy-mmm-dd” format using Bookings table***

*Expected output: book\_ref, book\_date (in “yyyy-mmm-dd” format) , total amount*

**Answer:**

select book\_ref,

to\_char(book\_date,'YYYY-Mon-DD') as book\_date,

total\_amount

from bookings

1. **Get the following columns in the exact same sequence.**

Expected columns in the output: ticket\_no, boarding\_no, seat\_number, passenger\_id, passenger\_name.

**Answer:**

select t.ticket\_no, boarding\_no, bp.seat\_no as seat\_number,t.passenger\_id, t.passenger\_name

from tickets t

join boarding\_passes bp

on bp.ticket\_no=t.ticket\_no

1. **Write a query to find the seat number which is least allocated among all the seats?**

**Answer:** There are 3 seats which are allocated least with count number as 1.

with t1 as(

select seat\_no as seat\_least\_allocated, count(ticket\_no) as count\_of\_seat, rank()over(order by count(ticket\_no)) as ranked

from boarding\_passes

group by 1)

select seat\_least\_allocated, count\_of\_seat

from t1

where ranked=1

1. ***In the database, identify the month wise highest paying passenger name and passenger id.***

Expected output: Month\_name(“mmm-yy” format), passenger\_id, passenger\_name and total amount

**Answer:** rank and dense\_rank giving same 40 rows. There are multiple passengers with same total\_amount in a month.

with t1 as(

select to\_char(book\_date,'Mon-yy') as Month\_name, passenger\_id,passenger\_name, sum(total\_amount) as total\_amount,

rank() over(partition by to\_char(book\_date,'Mon-yy') order by sum(total\_amount) desc) as rnk

from bookings b

join tickets t

on b.book\_ref=t.book\_ref

group by 1,2,3)

select Month\_name,passenger\_id,passenger\_name,total\_amount

from t1

where rnk=1

1. ***In the database, identify the month wise least paying passenger name and passenger id?***

Expected output: Month\_name(“mmm-yy” format), passenger\_id, passenger\_name and total amount

**Answer:** same as above just total amount desc is changed to total amount asc in window function giving 30 rows

with t1 as(

select to\_char(book\_date,'Mon-yy') as Month\_name, passenger\_id,passenger\_name, sum(total\_amount) as total\_amount,

rank() over(partition by to\_char(book\_date,'Mon-yy') order by sum(total\_amount) asc) rnk

from bookings b

join tickets t

on b.book\_ref=t.book\_ref

group by 1,2,3)

select Month\_name,passenger\_id,passenger\_name,total\_amount

from t1

where rnk=1

1. **Identify the travel details of non stop journeys or return journeys (having more than 1 flight).**

Expected Output: Passenger\_id, passenger\_name, ticket\_number and flight count.

**Answer:** here count =2 (non stop journey) and count=4(return journey)

select passenger\_id,passenger\_name,tf.ticket\_no as ticket\_number,count(tf.flight\_id) as flight\_count

from tickets t

join ticket\_flights tf

on t.ticket\_no=tf.ticket\_no

join flights f

on tf.flight\_id=f.flight\_id

group by 1,2,3

having count(tf.flight\_id)>1

1. **How many tickets are there without boarding passes?**

Expected Output: just one number is required.

**Answer:** gives distinct tickets having ‘boarding\_no’ as null

with t1 as(

    select distinct tf.ticket\_no,boarding\_no

from boarding\_passes bp

right join ticket\_flights tf

on tf.ticket\_no=bp.ticket\_no

where boarding\_no is null

)

select count(ticket\_no) tickets\_without\_boarding\_passes

from t1

1. **Identify details of the longest flight (using flights table)?**

Expected Output: Flight number, departure airport, arrival airport, aircraft code and durations.

**Answer:**

with t1 as(

    select flight\_no as flight\_number, departure\_airport,arrival\_airport,aircraft\_code,(f.actual\_arrival-f.actual\_departure) as durations

    from flights f

    ),

 t2 as(

    select \*,

    dense\_rank() over(order by durations desc) rnk

    from t1)

select distinct flight\_number,departure\_airport,arrival\_airport,aircraft\_code,durations

from t2

where rnk=2

1. **Identify details of all the morning flights (morning means between 6AM to 11 AM, using flights table)?**

Expected output: flight\_id, flight\_number, scheduled\_departure, scheduled\_arrival and timings.

**Answer:** There is discrepancy in database schedule departure and Extracted scheduled departure in the output because database contains time in UTC timezone while extraction in the output is occuring as per computer timezone that is Kolkata UTC+5:30 (IST)

with t1 as(

    select flight\_id,flight\_no as flight\_number,scheduled\_departure,scheduled\_arrival,extract(Hour from scheduled\_departure) as hours,extract(minute from scheduled\_departure) as minutes

    from flights

)

    select flight\_id,flight\_number,scheduled\_departure,scheduled\_arrival,

    case when hours between 06 and 10 then 'Morning'

    end as timings

    from t1

    where (hours between 06 and 10) and (minutes between 00 and 59)

1. **Identify the earliest morning flight available from every airport.**

Expected output: flight\_id, flight\_number, scheduled\_departure, scheduled\_arrival, departure airport and timings.

**Answer:**

with t1 as(

    select flight\_id,flight\_no as flight\_number,scheduled\_departure,scheduled\_arrival,departure\_airport,

    extract(Hour from scheduled\_departure) as hours,

    extract(minute from scheduled\_departure) as minutes

    from flights

),

t2 as(

    select flight\_id,flight\_number,scheduled\_departure,scheduled\_arrival, departure\_airport, hours,

    case when hours between 06 and 10 then 'Morning'

    end as timings,

    dense\_rank() over(partition by departure\_airport order by scheduled\_departure) ranked

    from t1

    where (hours between 06 and 10) and (minutes between 00 and 59)

)

select flight\_id,flight\_number,scheduled\_departure,scheduled\_arrival,departure\_airport,timings

from t2

where ranked=1

1. **Questions:** **Find list of airport codes in Europe/Moscow timezone**

Expected Output: Airport\_code.

**Answer:**

select airport\_code

from airports

where timezone like '%Europe/Moscow%'

1. **Write a query to get the count of seats in various fare condition for every aircraft code?**

Expected Outputs: Aircraft\_code, fare\_conditions ,seat count

**Answer:** Although question doesn’t ask us to order by but used order by so as to make data presentable for every aircraft code

select distinct aircraft\_code,fare\_conditions,

count(seat\_no) over(partition by fare\_conditions) as seat\_count

from seats

order by 1

1. **How many aircrafts codes have at least one Business class seats?**

Expected Output : Count of aircraft codes

**Answer:**

select count(distinct aircraft\_code) count\_of\_aircraft\_codes

from seats

group by fare\_conditions

having count(aircraft\_code)>=1 and fare\_conditions='Business'

1. **Find out the name of the airport having maximum number of departure flight**

Expected Output : Airport\_name

**Answer:**  Count of departure flight is 2230. CTE is made just to check airport and count of flight side by side

with t1 as(

    select  a.airport\_name, count(flight\_no)

    from airports a

    join flights f

    on a.airport\_code=f.departure\_airport

    group by 1

    order by 2 desc

    limit 1

)

select airport\_name

from t1

1. **Find out the name of the airport having least number of scheduled departure flights**

Expected Output : Airport\_name

**Answer:**  same as 14th just ‘order by’ done by ascending

with t1 as(

    select  a.airport\_name, count(flight\_no)

    from airports a

    join flights f

    on a.airport\_code=f.departure\_airport

    group by 1

    order by 2

    limit 1

)

select airport\_name

from t1

1. **How many flights from ‘DME’ airport don’t have actual departure?**

Expected Output : Flight Count

**Answer:**

select count(flight\_id)Flight\_count

from flights

group by departure\_airport,actual\_departure

having departure\_airport='DME' and actual\_departure is null

1. **Identify flight ids having range between 3000 to 6000**

Expected Output : Flight\_Number , aircraft\_code, ranges

**Answer:**

select distinct flight\_no as flight\_number,f.aircraft\_code,range

from aircrafts a

join flights f

on a.aircraft\_code=f.aircraft\_code

where range between 3000 and 6000

1. **Write a query to get the count of flights flying between URS and KUF?**

Expected Output : Flight\_count

**Answer:** we can either count flight\_id(unique) or flight\_no(repetitive) to get count of 24. Besides we can also use HAVING statement in place of where but then we will have to group them by departure\_airport and arrival\_airport.

select count(flight\_id) as flight\_count

from flights

where (departure\_airport='URS' and arrival\_airport='KUF') or (departure\_airport='KUF' and arrival\_airport='URS')

1. **Write a query to get the count of flights flying from either from NOZ or KRR?**

Expected Output : Flight count

**Answer:**  In this also, we can use either flight\_id or fligt\_no for flight count.same logic as above if we want to use HAVING statement

select count(flight\_id) flight\_count

from flights

where departure\_airport in('NOZ','KRR')

1. **Write a query to get the count of flights flying from KZN,DME,NBC,NJC,GDX,SGC,VKO,ROV**

Expected Output : Departure airport ,count of flights flying from these airports.

**Answer:** It has been ordered in desceding manner for better sorting. Same as above, IN operator is used for multiple departure\_airports

select departure\_airport,count(flight\_id) flight\_count

from flights

group by 1

having departure\_airport in('KZN','DME','NBC','NJC','GDX','SGC','VKO','ROV')

order by 2 desc

1. **Write a query to extract flight details having range between 3000 and 6000 and flying from DME**

Expected Output :Flight\_no,aircraft\_code,range,departure\_airport

**Answer:** DISTINCT flight\_no can be used to find distinct 26 flight\_no.

select flight\_no,f.aircraft\_code,range,departure\_airport

from flights f

join aircrafts a

on a.aircraft\_code=f.aircraft\_code

where (range between 3000 and 6000) and departure\_airport='DME'

1. **Find the list of flight ids which are using aircrafts from “Airbus” company and got cancelled or delayed**

Expected Output : Flight\_id,aircraft\_model

**Answer:** zero such flights

select flight\_id,model as aircraft\_model,status

from flights f

join aircrafts a

on f.aircraft\_code=a.aircraft\_code

where model like '%Airbus%' and status in('Cancelled','Delayed')

1. **Find the list of flight ids which are using aircrafts from “Boeing” company and got cancelled or delayed**

Expected Output : Flight\_id,aircraft\_model

**Answer:** Same as above just the change of company name. two such flight\_id

select flight\_id,model as aircraft\_model

from flights f

join aircrafts a

on f.aircraft\_code=a.aircraft\_code

where model like '%Boeing%' and status in('Cancelled','Delayed')

1. **Which airport(name) has most cancelled flights (arriving)?**

Expected Output : Airport\_name

**Answer:**

with t1 as(

    select arrival\_airport as airport\_name, count(status) as cancelled\_flight\_count,

rank()over(order by count(status) desc) ranked

from flights

where status='Cancelled'

group by 1

)

select airport\_name

from t1

where ranked=1

1. ***Identify flight ids which are using “Airbus aircrafts”***

*Expected Output : Flight\_id,aircraft\_model*

**Answer:**

select flight\_id,model as aircraft\_model

from aircrafts a

join flights f

on a.aircraft\_code=f.aircraft\_code

where model like'%Airbus%'

order by 1

1. ***Identify date-wise last flight id flying from every airport?***

*Expected Output: Flight\_id,flight\_number,schedule\_departure,departure\_airport*

**Answer:**

with t1 as(

    select flight\_id,flight\_no as flight\_number,scheduled\_departure,departure\_airport,

    rank() over(partition by departure\_airport order by scheduled\_departure desc) ranked

    from flights)

select flight\_id,flight\_number,scheduled\_departure,departure\_airport

from t1

where ranked=1

1. ***Identify list of customers who will get the refund due to cancellation of the flights and how much amount they will get?***

*Expected Output : Passenger\_name,total\_refund.*

**Answer:**

**following gives null result:**

select passenger\_name, sum(amount) as total\_refund

    from flights f

    join ticket\_flights tf

    on f.flight\_id=tf.flight\_id

    join tickets t

    on t.ticket\_no=tf.ticket\_no

    where status='Cancelled'

    group by1

**Alternatively:** gives 380 result but might not be correct

    select passenger\_name, sum(amount) as total\_refund

    from flights f

    join ticket\_flights tf

    on f.flight\_id=tf.flight\_id

    join tickets t

    on t.ticket\_no=tf.ticket\_no

    where actual\_departure is null

    group by 1

1. ***Identify date wise first cancelled flight id flying for every airport?***

*Expected Output : Flight\_id,flight\_number,schedule\_departure,departure\_airport*

**Answer:**

    with t1 as(

    select flight\_id,flight\_no as flight\_number,scheduled\_departure,departure\_airport,

    rank() over(partition by departure\_airport order by scheduled\_departure) ranked

    from flights

    where status='Cancelled'

    )

   select flight\_id,flight\_number,scheduled\_departure,departure\_airport

   from t1

   where ranked=1

1. ***Identify list of Airbus flight ids which got cancelled.***

*Expected Output : Flight\_id*

**Answer:**

select flight\_id

from flights f

join aircrafts a

on a.aircraft\_code=f.aircraft\_code

where status='Cancelled' and model like '%Airbus%'

1. ***Identify list of flight ids having highest range.***

*Expected Output : Flight\_no, range*

**Answer:** Question mentions flight\_id and Output mentions flight\_no so both has been taken in query.

with t1 as(

    select flight\_id,flight\_no,range, rank() over(order by range desc)ranked

    from flights f

    join aircrafts a

    on a.aircraft\_code=f.aircraft\_code)

select flight\_id,flight\_no

from t1

where ranked=1