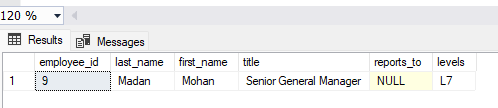
/\* Question Set 1 - Easy \*/

/\* Q1: Who is the senior most employee based on job title? \*/

SELECT TOP 1 employee\_id, last\_name, first\_name, title, reports\_to, levels

FROM employee

ORDER BY levels DESC



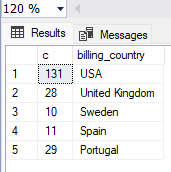
/\* Q2: Which countries have the most Invoices? \*/

select TOP 5 COUNT(\*)as c, billing\_country

from invoice

group by billing\_country

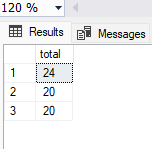
order by billing\_country desc



/\* Q3: What are top 3 values of total invoice? \*/

select TOP 3 total from invoice

order by total desc



/\* Q4: Which city has the best customers? We would like to throw a promotional Music Festival in the city we made the most money.

Write a query that returns one city that has the highest sum of invoice totals.

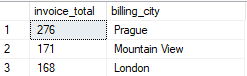
Return both the city name & sum of all invoice totals \*/

select sum(total) as invoice\_total, billing\_city

from invoice

group by billing\_city

order by invoice\_total desc



/\* Q5: Who is the best customer? The customer who has spent the most money will be declared the best customer.

Write a query that returns the person who has spent the most money.\*/

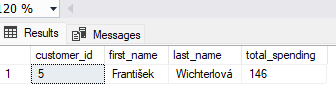
SELECT TOP 1 customer.customer\_id, customer.first\_name, customer.last\_name, SUM(invoice.total) AS total\_spending

FROM customer

JOIN invoice ON customer.customer\_id = invoice.customer\_id

GROUP BY customer.customer\_id, customer.first\_name, customer.last\_name

ORDER BY total\_spending DESC



/\* Question Set 2 - Moderate \*/

/\* Q1: Write query to return the email, first name, last name, & Genre of all Rock Music listeners.

Return your list ordered alphabetically by email starting with A. \*/

SELECT DISTINCT email AS Email,first\_name AS FirstName, last\_name AS LastName, genre.name AS Name

FROM customer

JOIN invoice ON invoice.customer\_id=customer.customer\_id

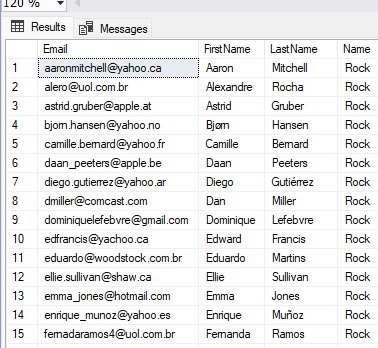
JOIN invoice\_line ON invoice\_line.invoice\_id = invoice.invoice\_id

JOIN track ON track.track\_id = invoice\_line.track\_id

JOIN genre ON genre.genre\_id = track.genre\_id

WHERE genre.name LIKE 'Rock'

ORDER BY email;



/\* Q2: Let's invite the artists who have written the most rock music in our dataset.

Write a query that returns the Artist name and total track count of the top 10 rock bands. \*/

SELECT TOP 10 artist.artist\_id, artist.name, COUNT(track.track\_id) AS number\_of\_songs

FROM track

JOIN album2 ON album2.album\_id = track.album\_id

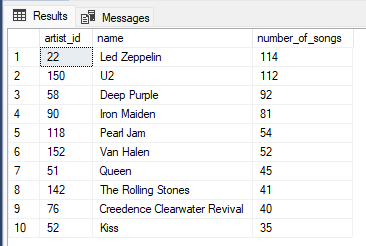
JOIN artist ON artist.artist\_id = album2.artist\_id

JOIN genre ON genre.genre\_id = track.genre\_id

WHERE genre.name LIKE 'Rock'

GROUP BY artist.artist\_id, artist.name

ORDER BY number\_of\_songs DESC



/\* Q3: Return all the track names that have a song length longer than the average song length.

Return the Name and Milliseconds for each track. Order by the song length with the longest songs listed first. \*/

SELECT name,milliseconds

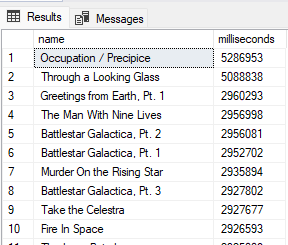
FROM track

WHERE milliseconds > (

SELECT AVG(milliseconds) AS avg\_track\_length

FROM track )

ORDER BY milliseconds DESC;



/\* Question Set 3 - Advance \*/

/\* Q1: Find how much amount spent by each customer on artists? Write a query to return customer name, artist name and total spent \*/

/\* Steps to Solve: First, find which artist has earned the most according to the InvoiceLines. Now use this artist to find

which customer spent the most on this artist. For this query, you will need to use the Invoice, InvoiceLine, Track, Customer,

Album, and Artist tables. Note, this one is tricky because the Total spent in the Invoice table might not be on a single product,

so you need to use the InvoiceLine table to find out how many of each product was purchased, and then multiply this by the price

for each artist. \*/

WITH best\_selling\_artist AS (

SELECT artist.artist\_id AS artist\_id, artist.name AS artist\_name,

SUM(invoice\_line.unit\_price \* invoice\_line.quantity) AS total\_sales

FROM

invoice\_line

JOIN track ON track.track\_id = invoice\_line.track\_id

JOIN album2 ON album2.album\_id = track.album\_id

JOIN artist ON artist.artist\_id = album2.artist\_id

GROUP BY artist.artist\_id, artist.name

ORDER BY total\_sales DESC

OFFSET 0 ROWS

FETCH NEXT 1 ROWS ONLY

)

SELECT c.customer\_id, c.first\_name, c.last\_name, bsa.artist\_name,

SUM(il.unit\_price \* il.quantity) AS amount\_spent

FROM invoice i

JOIN customer c ON c.customer\_id = i.customer\_id

JOIN invoice\_line il ON il.invoice\_id = i.invoice\_id

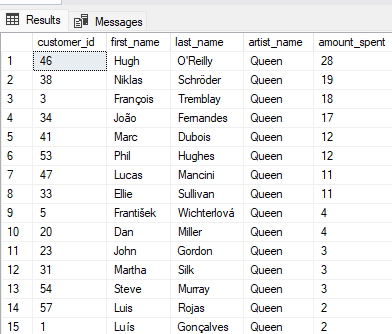
JOIN track t ON t.track\_id = il.track\_id

JOIN album2 alb ON alb.album\_id = t.album\_id

JOIN best\_selling\_artist bsa ON bsa.artist\_id = alb.artist\_id

GROUP BY c.customer\_id, c.first\_name, c.last\_name, bsa.artist\_name

ORDER BY amount\_spent DESC;



/\* Q2: We want to find out the most popular music Genre for each country. We determine the most popular genre as the genre

with the highest amount of purchases. Write a query that returns each country along with the top Genre. For countries where

the maximum number of purchases is shared return all Genres. \*/

/\* Steps to Solve: There are two parts in question- first most popular music genre and second need data at country level. \*/

/\* Method 1: Using CTE \*/

WITH popular\_genre AS

(

SELECT

COUNT(invoice\_line.quantity) AS purchases,

customer.country,

genre.name,

genre.genre\_id,

ROW\_NUMBER() OVER(PARTITION BY customer.country ORDER BY COUNT(invoice\_line.quantity) DESC) AS RowNo

FROM

invoice\_line

JOIN invoice ON invoice.invoice\_id = invoice\_line.invoice\_id

JOIN customer ON customer.customer\_id = invoice.customer\_id

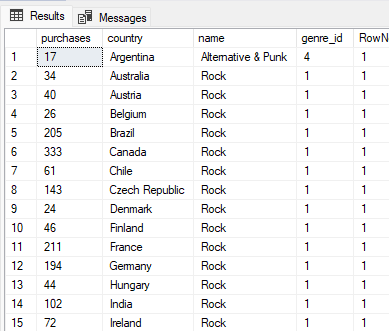
JOIN track ON track.track\_id = invoice\_line.track\_id

JOIN genre ON genre.genre\_id = track.genre\_id

GROUP BY customer.country, genre.name, genre.genre\_id

)

SELECT \* FROM popular\_genre WHERE RowNo = 1



/\* Q3: Write a query that determines the customer that has spent the most on music for each country.

Write a query that returns the country along with the top customer and how much they spent.

For countries where the top amount spent is shared, provide all customers who spent this amount. \*/

/\* Steps to Solve: Similar to the above question. There are two parts in question-

first find the most spent on music for each country and second filter the data for respective customers. \*/

/\* Method 1: using CTE \*/

WITH Customer\_with\_country AS (

SELECT

customer.customer\_id,first\_name,last\_name,billing\_country,

SUM(total) AS total\_spending,

ROW\_NUMBER() OVER(PARTITION BY billing\_country ORDER BY SUM(total) DESC) AS RowNo

FROM

invoice

JOIN customer ON customer.customer\_id = invoice.customer\_id

GROUP BY

customer.customer\_id,first\_name,last\_name,billing\_country

)

SELECT \* FROM Customer\_with\_country WHERE RowNo = 1

