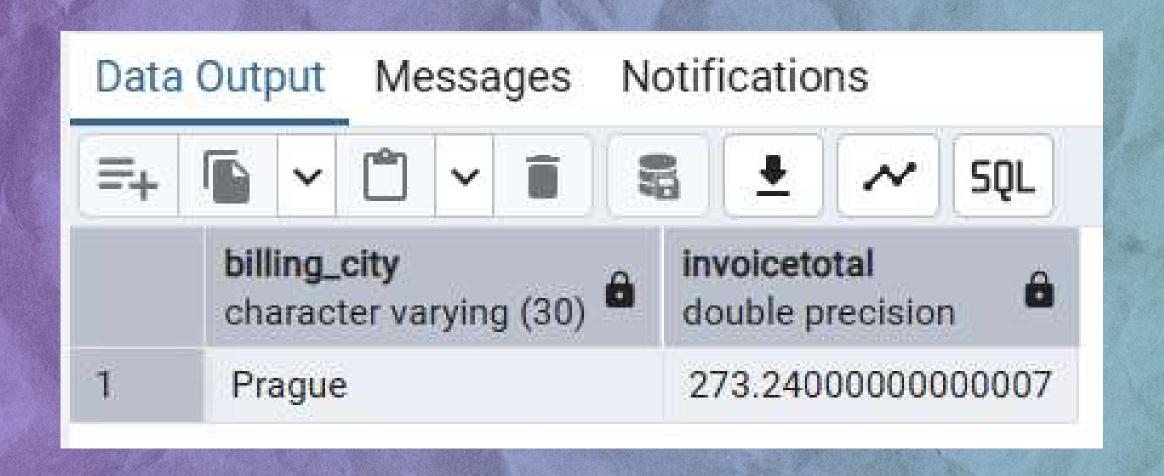


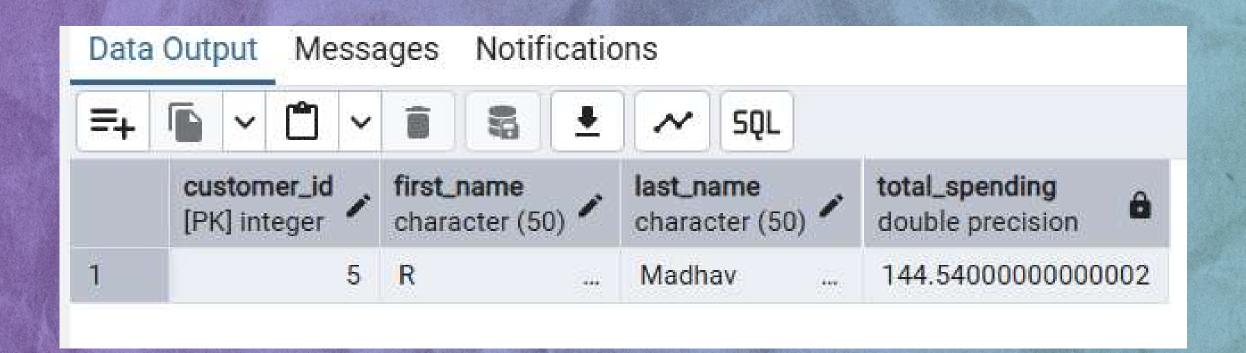


```
SELECT billing_city,SUM(total) AS InvoiceTotal
FROM invoice
GROUP BY billing_city
ORDER BY InvoiceTotal DESC
LIMIT 1;
```





```
SELECT c.customer_id, first_name, last_name, SUM(total) AS total_spending
FROM customer c
JOIN invoice i
   ON c.customer_id = i.customer_id
GROUP BY c.customer_id
ORDER BY total_spending DESC
LIMIT 1;
```



```
SELECT DISTINCT email, first_name, last_name
FROM customer c
JOIN invoice i
    ON c.customer_id = i.customer_id
JOIN invoice_line il
    ON i.invoice_id = il.invoice_id
WHERE track_id IN(
    SELECT track_id FROM track t
    JOIN genre g
        ON t.genre_id = g.genre_id
    WHERE g.name LIKE 'Rock'
ORDER BY email
```

	email character varying (50)	first_name character (50)	last_name character (50)
1	aaronmitchell@yahoo.ca	Aaron	Mitchell
2	alero@uol.com.br	Alexandre	Rocha
3	astrid.gruber@apple.at	Astrid	Gruber
4	bjorn.hansen@yahoo.no	Bjørn	Hansen
5	camille,bernard@yahoo.fr	Camille	Bernard
6	daan_peeters@apple.be	Daan	Peeters
7	diego.gutierrez@yahoo.ar	Diego	Gutiérrez
8	dmiller@comcast.com	Dan	Miller
9	dominiquelefebvre@gmail.c	Dominique	Lefebvre
10	edfrancis@yachoo.ca	Edward	Francis

```
SELECT a.artist_id, a.name,
        COUNT(a.artist_id) AS number_of_songs
FROM track t
JOIN album ab
        ON ab.album_id = t.album_id
JOIN artist a
        ON a.artist_id = ab.artist_id
JOIN genre g
        ON g.genre_id = t.genre_id
WHERE g.name LIKE 'Rock'
GROUP BY a.artist_id
ORDER BY number_of_songs DESC
LIMIT 10;
```

	artist_id [PK] character varying (50)	name character varying (120)	number_of_songs bigint
1	22	Led Zeppelin	114
2	150	U2	112
3	58	Deep Purple	92
4	90	Iron Maiden	81
5	118	Pearl Jam	54
6	152	Van Halen	52
7	51	Queen	45
8	142	The Rolling Stones	41
9	76	Creedence Clearwater Revival	40
10	52	Kiss	35

```
SELECT name,milliseconds
FROM track
WHERE milliseconds > (
    SELECT AVG(milliseconds) AS avg_track_length
    FROM track )
ORDER BY milliseconds DESC;
```

	name character varying (150)	milliseconds a integer
1	Occupation / Precipice	5286953
2	Through a Looking Glass	5088838
3	Greetings from Earth, Pt. 1	2960293
4	The Man With Nine Lives	2956998
5	Battlestar Galactica, Pt. 2	2956081
6	Battlestar Galactica, Pt. 1	2952702
7	Murder On the Rising Star	2935894
8	Battlestar Galactica, Pt. 3	2927 <mark>8</mark> 02
9	Take the Celestra	2927677
10	Fire In Space	2926 <mark>5</mark> 93
11	The Long Patrol	2925008
12	The Magnificent Warriors	2924716



```
WITH best_selling_artist AS (
    SELECT a.artist_id, a.name AS artist_name,
        SUM(il.unit_price * il.quantity) AS total_sales
    FROM invoice_line il
    JOIN track t ON t.track_id = il.track_id
    JOIN album ab ON ab.album_id = t.album_id
    JOIN artist a ON a.artist_id = ab.artist_id
    GROUP BY a.artist_id
    ORDER BY total_sales DESC
    LIMIT 1
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 album 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
```

	customer_id integer	first_name character (50)	last_name character (50)	artist_name character varying (120)	amount_spent double precision
1	46	Hugh	O'Reilly	Queen	27.71999999999985
2	38	Niklas	Schröder	Queen	18.81
3	3	François	Tremblay	Queen	17.82
4	34	João	Fernandes	Queen	16.830000000000002
5	53	Phil	Hughes	Queen	11.88
6	41	Marc	Dubois	Queen	11.88
7	47	Lucas	Mancini	Queen	10.89
8	33	Ellie	Sullivan	Queen	10.89
9	20	Dan	Miller	Queen	3.96
10	5	R	Madhav	Oueen	3.96



```
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 2,3,4
ORDER BY 2 ASC, 1 DESC
)
SELECT * FROM popular_genre WHERE RowNo <= 1</pre>
```

	purchases bigint	country character varying (50)	name character varying (120)	genre_id character varying (50)	rowno bigint
1	17	Argentina	Alternative & Punk	4	1
2	34	Australia	Rock	1	1
3	40	Austria	Rock	1	1
4	26	Belgium	Rock	1	1
5	205	Brazil	Rock	1	1
6	333	Canada	Rock	1	1
7	61	Chile	Rock	1	1
8	143	Czech Republic	Rock	1	1
9	24	Denmark	Rock	1	1

```
WITH RECURSIVE
    customter_with_country AS (
        SELECT c.customer_id, first_name, last_name, billing_country,
            SUM(total) AS total_spending
        FROM invoice i
        JOIN customer c ON c.customer_id = i.customer_id
        GROUP BY c.customer_id, first_name, last_name, billing_country
        ORDER BY first_name,last_name DESC),
    country_max_spending AS(
        SELECT billing_country, MAX(total_spending) AS max_spending
        FROM customter_with_country
        GROUP BY billing_country)
SELECT cc.billing_country, cc.total_spending, cc.first_name, cc.last_name, cc.customer_id
FROM customter_with_country cc
JOIN country_max_spending ms ON cc.billing_country = ms.billing_country
WHERE cc.total_spending = ms.max_spending
ORDER BY cc.billing_country
```

	billing_country character varying (30)	total_spending double precision	first_name character (50)	last_name character (50)	customer_id integer
1	Argentina	39.6	Diego	Gutiérrez	56
2	Australia	81.18	Mark	Taylor	55
3	Austria	69.3	Astrid	Gruber	7
4	Belgium	60.38999999999999	Daan	Peeters	8
5	Brazil	108.8999999999998	Luís	Gonçalves	1
6	Canada	99.99	François	Tremblay	3
7	Chile	97.02000000000001	Luis	Rojas	57
8	Czech Republic	144.540000000000002	R	Madhav	5