SQL QUERIES FOR MUSIC STORE DATA

-- DATA ANALYSIS QUESTIONS AND QUERIES:

-- 1. Most Senior Employee

```sql
SELECT employee_id, CONCAT(first_name, ' ', last_name) AS full_name, title
FROM employee
WHERE title = 'Senior General Manager'
```

	employee_id	full_name	title
1	9	Mohan Madan	Senior General Manager

-- 2. Countries with most invoices + Number of Invoices

```sql
SELECT MAX(DISTINCT(billing_country)) AS Country
FROM invoice
```

```sql
SELECT MAX(DISTINCT(billing_country)) AS Country, COUNT(invoice_id) AS Invoices
FROM invoice
WHERE billing_country = 'USA'
```

	Country	Invoices
1	USA	131

-- 3. Top 3 Values of Total Invoices

```sql
SELECT TOP 3 *
FROM invoice
ORDER BY total DESC
```

	invoice_id	customer_id	invoice_date	billing_address	billing_city	billing_state	billing_country	billing_postal_code	total
1	183	42	2018-02-09 00:00:00.0000000	9, Place Louis Barthou	Bordeaux	None	France	33000	23.7600002288818
2	31	3	2017-02-21 00:00:00.0000000	1498 rue Bélanger	Montréal	QC	Canada	H2G 1A7	19.7999992370605
3	92	32	2017-07-02 00:00:00.0000000	696 Osborne Street	Winnipeg	MB	Canada	R3L 2B9	19.7999992370605

-- 4. City with highest sum of invoice totals

```sql
SELECT TOP 1 billing_city, SUM(total) AS total_invoice
FROM invoice
GROUP BY billing_city
ORDER BY SUM(total) DESC
```

	billing_city	total_invoice
1	Prague	273.240000247955


```
-- 5. Best Customer

SELECT inv.customer_id, CONCAT(cus.first_name, ' ', cus.last_name) AS full_name,
SUM(inv.total) AS total_spent
FROM invoice inv
JOIN customer cus
ON cus.customer_id = inv.customer_id
GROUP BY inv.customer_id, CONCAT(cus.first_name, ' ', cus.last_name)
ORDER BY SUM(inv.total) DESC
```

	customer_id	full_name	total_spent
1	5	František Wichterlová	144.539998054504
2	6	Helena Holý	128.700002193451
3	46	Hugh O'Reilly	114.839999437332
4	58	Manoj Pareek	111.869999647141
5	1	Luís Gonçalves	108.899999380112
6	13	Fernanda Ramos	106.919999599457
7	34	João Fernandes	102.95999956131
8	42	Wyatt Girard	99.9899990558624
9	3	François Tremblay	99.9899981021881
10	17	Jack Smith	98.0099999904633
11	53	Phil Hughes	98.0099992752075
12	50	Enrique Muñoz	98.0099990367889
13	57	Luis Rojas	97.0199997425079
14	20	Dan Miller	95.0400006771088
15	37	Fynn Zimmermann	94.0499994754791
16	22	Heather Leacock	92.0699999332428
17	21	Kathy Chase	91.0799999237061
18	30	Edward Francis	91.0799992084503
19	26	Richard Cunningham	86.1299977302551
20	36	Hannah Schneider	85.1399991512299
21	27	Patrick Gray	84.1500000953674
22	12	Roberto Almeida	82.1700007915497
23	2	Leonie Köhler	82.1700000762939
24	35	Madalena Sampaio	82.1699998378754
25	55	Mark Taylor	81.1800003051758
26	44	Terhi Hämäläinen	79.2000005245209
27	39	Camille Bernard	79.2000000476837
28	54	Steve Murray	79.1999988555908
29	18	Michelle Brooks	79.1999988555908
30	45	Ladislav Kovács	78.2099997997284
31	49	Stanisław Wójcik	76.2300002574921
32	25	Victor Stevens	76.2299995422363
33	33	Ellie Sullivan	75.2399997711182
34	51	Joakim Johansson	75.2399995326996
35	16	Frank Harris	74.2500004768372


```
-- 6. Find the email, full name and genre of all rock music listeners. Alphabetically
ordered from A-Z

SELECT DISTINCT cus.email, CONCAT(cus.first_name, ' ', cus.last_name) AS full_name,
gen.name
FROM customer cus
JOIN invoice inv
ON cus.customer_id = inv.customer_id
JOIN invoice_line invline
ON invline.invoice_id = inv.invoice_id
JOIN track tra
ON tra.track_id = invline.track_id
JOIN genre gen
ON gen.genre_id = tra.genre_id
WHERE gen.name = 'Rock'
ORDER BY full_name ASC
```

	email	full_name	name
1	aaronmitchell@yahoo.ca	Aaron Mitchell	Rock
2	alero@uol.com.br	Alexandre Rocha	Rock
3	astrid.gruber@apple.at	Astrid Gruber	Rock
4	bjorn.hansen@yahoo.no	Bjørn Hansen	Rock
5	camille.bernard@yahoo.fr	Camille Bernard	Rock
6	daan_peeters@apple.be	Daan Peeters	Rock
7	dmiller@comcast.com	Dan Miller	Rock
8	diego.gutierrez@yahoo.ar	Diego Gutiérrez	Rock
9	dominiquelefebvre@gmail.com	Dominique Lefebvre	Rock
10	eduardo@woodstock.com.br	Eduardo Martins	Rock
11	edfrancis@yachoo.ca	Edward Francis	Rock
12	ellie.sullivan@shaw.ca	Ellie Sullivan	Rock
13	emma_jones@hotmail.com	Emma Jones	Rock
14	enrique_munoz@yahoo.es	Enrique Muñoz	Rock
15	fernadaramos4@uol.com.br	Fernanda Ramos	Rock
16	ftremblay@gmail.com	François Tremblay	Rock
17	fharris@google.com	Frank Harris	Rock
18	fralston@gmail.com	Frank Ralston	Rock
19	frantisekw@jetbrains.com	František Wichterl...	Rock
20	fzimmermann@yahoo.de	Fynn Zimmermann	Rock
21	hannah.schneider@yahoo.de	Hannah Schneider	Rock
22	hleacock@gmail.com	Heather Leacock	Rock
23	hholy@gmail.com	Helena Holý	Rock
24	hughoreilly@apple.ie	Hugh O'Reilly	Rock
25	isabelle_mercier@apple.fr	Isabelle Mercier	Rock
26	jacksmith@microsoft.com	Jack Smith	Rock
27	jenniferp@rogers.ca	Jennifer Peterson	Rock
28	joakim.johansson@yahoo.se	Joakim Johansson	Rock
29	jfernandes@yahoo.pt	João Fernandes	Rock
30	johavanderberg@yahoo.nl	Johannes Van der ...	Rock
31	johngordon22@yahoo.com	John Gordon	Rock
32	jubarnett@gmail.com	Julia Barnett	Rock
33	kara.nielsen@jubii.dk	Kara Nielsen	Rock
34	kachase@hotmail.com	Kathy Chase	Rock
35	ladislav_kovacs@apple.hu	Ladislav Kovács	Rock

```sql
-- Find the artists who have written the most Rock Music. Artist name + count of total
track for TOP 10

SELECT art.artist_id, art.name, COUNT(tra.track_id) AS tracks
FROM track tra
JOIN album alb1
ON tra.album_id = alb1.album_id
JOIN artist art
ON art.artist_id = alb1.artist_id
JOIN genre gen
ON gen.genre_id = tra.genre_id
WHERE gen.name LIKE 'Rock'
GROUP BY art.name, art.artist_id
ORDER BY tracks DESC
```

	artist_id	name	tracks
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
11	84	Foo Fighters	33
12	127	Red Hot Chili Peppers	31
13	139	The Cult	30
14	100	Lenny Kravitz	30
15	110	Nirvana	29
16	88	Guns N' Roses	28
17	59	Santana	27
18	130	Skank	23
19	144	The Who	20
20	114	Ozzy Osbourne	18
21	1	AC/DC	18
22	94	Jimi Hendrix	17
23	132	Soundgarden	17
24	78	Def Leppard	16
25	82	Faith No More	15
26	3	Aerosmith	15
27	111	O Terço	15
28	124	R.E.M.	14
29	126	Raul Seixas	14

```sql
-- Find track names with > AVG song length. Present as track name and length. Order by
length (Longest-Shortest)

SELECT tra.name, tra.milliseconds AS length
FROM track tra
WHERE tra.milliseconds > (SELECT AVG(tra.milliseconds) FROM track tra)
ORDER BY length DESC
```

	name	length
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	2927802
9	Take the Celestra	2927677
10	Fire In Space	2926593
11	The Long Patrol	2925008
12	The Magnificent Warriors	2924716
13	The Living Legend, Pt. 1	2924507
14	The Gun On Ice Planet Zero, Pt. 2	2924341
15	The Hand of God	2924007
16	Experiment In Terra	2923548
17	War of the Gods, Pt. 2	2923381
18	The Living Legend, Pt. 2	2923298
19	War of the Gods, Pt. 1	2922630
20	Lost Planet of the Gods, Pt. 1	2922547
21	Baltar's Escape	2922088
22	The Lost Warrior	2920045
23	Lost Planet of the Gods, Pt. 2	2914664
24	The Gun On Ice Planet Zero, Pt. 1	2907615
25	Greetings from Earth, Pt. 2	2903778
26	Crossroads, Pt. 2	2869953
27	The Young Lords	2863571
28	Dave	2825166
29	"?"	2782333
30	Maternity Leave	2780416
31	Three Minutes	2763666
32	Hero	2713755
33	One of Them	2698791
34	How to Stop an Exploding Man	2687103

```sql
-- Find the amount spent by each customer on the top artist

WITH sales AS (
SELECT TOP 1 art.artist_id, art.name, SUM(invl.unit_price*invl.quantity) AS total_sales
FROM artist art
JOIN album alb
ON art.artist_id = alb.artist_id
JOIN track tra
ON tra.album_id = alb.album_id
JOIN invoice_line invl
ON invl.track_id = tra.track_id
GROUP BY art.artist_id, art.name
ORDER BY total_sales DESC
)
SELECT cus.customer_id, CONCAT(cus.first_name, ' ', cus.last_name) AS full_name,
sales.name, SUM(invl.unit_price*invl.quantity) AS total_sales
FROM customer cus
JOIN invoice inv
ON inv.customer_id = cus.customer_id
JOIN invoice_line invl
ON invl.invoice_id = inv.invoice_id
JOIN track tra
ON tra.track_id = invl.track_id
```

```sql
JOIN album alb
ON alb.album_id = tra.album_id
JOIN sales
ON sales.artist_id = alb.artist_id
GROUP BY cus.customer_id, CONCAT(cus.first_name, ' ', cus.last_name), sales.name
ORDER BY total_sales DESC
```

	customer_id	full_name	name	total_sales
1	46	Hugh O'Reilly	Queen	27.7200002670288
2	38	Niklas Schröder	Queen	18.8100001811981
3	3	François Tremblay	Queen	17.8200001716614
4	34	João Fernandes	Queen	16.8300001621246
5	41	Marc Dubois	Queen	11.8800001144409
6	53	Phil Hughes	Queen	11.8800001144409
7	47	Lucas Mancini	Queen	10.8900001049042
8	33	Ellie Sullivan	Queen	10.8900001049042
9	20	Dan Miller	Queen	3.96000003814697
10	5	František Wichte...	Queen	3.96000003814697
11	23	John Gordon	Queen	2.97000002861023
12	31	Martha Silk	Queen	2.97000002861023
13	54	Steve Murray	Queen	2.97000002861023
14	44	Terhi Hämäläinen	Queen	1.98000001907349
15	49	Stanisław Wójcik	Queen	1.98000001907349
16	42	Wyatt Girard	Queen	1.98000001907349
17	8	Daan Peeters	Queen	1.98000001907349
18	28	Julia Barnett	Queen	1.98000001907349
19	1	Luís Gonçalves	Queen	1.98000001907349
20	57	Luis Rojas	Queen	1.98000001907349
21	35	Madalena Samp...	Queen	1.98000001907349
22	48	Johannes Van d...	Queen	1.98000001907349
23	17	Jack Smith	Queen	1.98000001907349
24	15	Jennifer Peterson	Queen	1.98000001907349
25	36	Hannah Schneid...	Queen	1.98000001907349
26	16	Frank Harris	Queen	1.98000001907349
27	24	Frank Ralston	Queen	1.98000001907349
28	30	Edward Francis	Queen	1.98000001907349
29	11	Alexandre Rocha	Queen	1.98000001907349
30	52	Emma Jones	Queen	1.98000001907349
31	50	Enrique Muñoz	Queen	0.990000009536...
32	13	Fernanda Ramos	Queen	0.990000009536...
33	39	Camille Bernard	Queen	0.990000009536...

```sql
-- Find out the most popular music genre (most purchases) for every country

WITH popgen AS (
SELECT cus.country, gen.name, gen.genre_id, COUNT(invline.quantity) AS purchases,
ROW_NUMBER() OVER (PARTITION BY cus.country ORDER BY COUNT(invline.quantity) DESC) AS
Rows
FROM invoice inv
JOIN invoice_line invline
ON invline.invoice_id = inv.invoice_id
JOIN track tra
ON tra.track_id = invline.track_id
JOIN genre gen
ON gen.genre_id = tra.genre_id
JOIN customer cus
ON cus.customer_id = inv.customer_id
GROUP BY cus.country, gen.name, gen.genre_id
)
SELECT *
FROM popgen
WHERE Rows <= 1
ORDER BY purchases DESC
```

	country	name	genre_id	purchases	Rows
1	USA	Rock	1	561	1
2	Canada	Rock	1	333	1
3	France	Rock	1	211	1
4	Brazil	Rock	1	205	1
5	Germ...	Rock	1	194	1
6	United...	Rock	1	166	1
7	Czech...	Rock	1	143	1
8	Portug...	Rock	1	108	1
9	India	Rock	1	102	1
10	Ireland	Rock	1	72	1
11	Chile	Rock	1	61	1
12	Sweden	Rock	1	60	1
13	Spain	Rock	1	46	1
14	Finland	Rock	1	46	1
15	Hung...	Rock	1	44	1
16	Austria	Rock	1	40	1
17	Norway	Rock	1	40	1
18	Poland	Rock	1	40	1
19	Italy	Rock	1	35	1
20	Austra...	Rock	1	34	1
21	Nethe...	Rock	1	33	1
22	Belgiu...	Rock	1	26	1
23	Denm...	Rock	1	24	1
24	Argent...	Alter...	4	17	1

```sql
-- Find the customers that have spent the most on music for every country. Return
country, customer name, customer id, and amount spent

WITH big_spenders AS (
SELECT cus.country, cus.customer_id, CONCAT(cus.first_name, ' ', cus.last_name) AS
full_name, COUNT(inv.total) AS money_spent, ROW_NUMBER() OVER (PARTITION BY cus.country
ORDER BY COUNT(inv.total) DESC) AS Rows
FROM invoice inv
JOIN invoice_line invline
ON invline.invoice_id = inv.invoice_id
JOIN track tra
ON tra.track_id = invline.track_id
JOIN genre gen
ON gen.genre_id = tra.genre_id
JOIN customer cus
ON cus.customer_id = inv.customer_id
GROUP BY cus.country, cus.customer_id, CONCAT(cus.first_name, ' ', cus.last_name)
)
SELECT *
FROM big_spenders
WHERE Rows <= 1
ORDER BY big_spenders.country ASC, money_spent DESC
```

	country	customer_id	full_name	money_spent	Rows
1	Argentina	56	Diego Gutiérrez	40	1
2	Australia	55	Mark Taylor	82	1
3	Austria	7	Astrid Gruber	70	1
4	Belgium	8	Daan Peeters	61	1
5	Brazil	1	Luís Gonçalves	110	1
6	Canada	3	François Tremblay	101	1
7	Chile	57	Luis Rojas	98	1
8	Czech Republic	5	František Wichterlová	146	1
9	Denmark	9	Kara Nielsen	38	1
10	Finland	44	Terhi Hämäläinen	80	1
11	France	42	Wyatt Girard	101	1
12	Germany	37	Fynn Zimmermann	95	1
13	Hungary	45	Ladislav Kovács	79	1
14	India	58	Manoj Pareek	113	1
15	Ireland	46	Hugh O'Reilly	116	1
16	Italy	47	Lucas Mancini	51	1
17	Netherlands	48	Johannes Van der ...	66	1
18	Norway	4	Bjørn Hansen	73	1
19	Poland	49	Stanisław Wójcik	77	1
20	Portugal	34	João Fernandes	104	1
21	Spain	50	Enrique Muñoz	99	1
22	Sweden	51	Joakim Johansson	76	1
23	United Kingdo...	53	Phil Hughes	99	1
24	USA	17	Jack Smith	99	1