



Data Analysis

MUSIC



Tables in Database

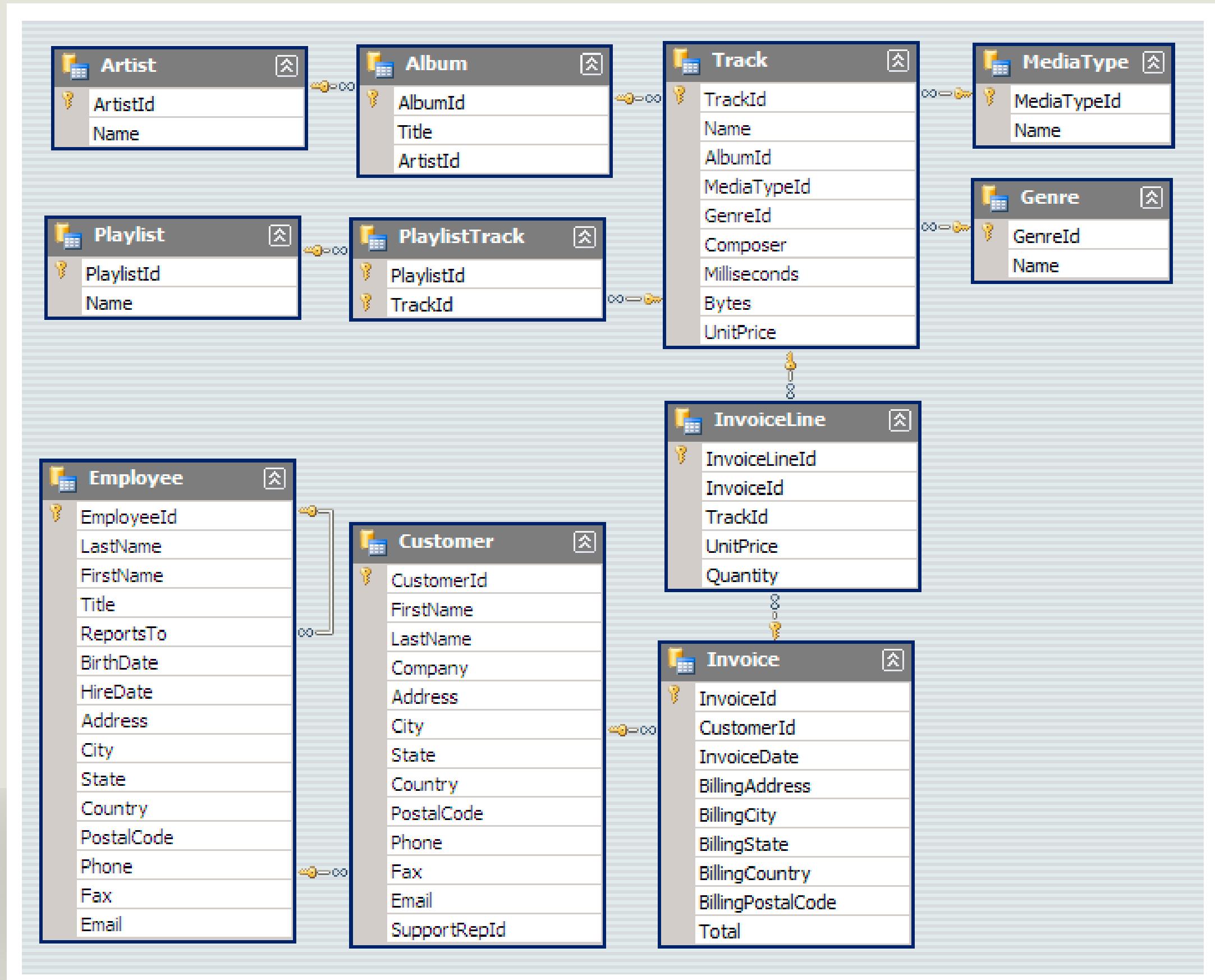
```
use project_db;  
show tables;
```

Tables_in_project_db	
▶	album
	artist
	customer
	employee
	genre
	invoice
	invoice_line
	media_type
	playlist
	playlist_track
	track



Data Analysis

SCHENIA





Level

BASIC



Most senior employee based on job title

```
SELECT first_name, last_name  
FROM employee  
ORDER BY levels DESC  
LIMIT 1;
```

	first_name	last_name
▶	Mohan	Madan

Countries that have the most invoices

```
SELECT billing_country, COUNT(*) AS total_invoices  
FROM invoice  
GROUP BY billing_country  
ORDER BY total_invoices DESC;
```

billing_country	total_invoices
USA	131
Canada	76
Brazil	61
France	50
Germany	41
Czech Republic	30
Portugal	29
United Kingdom	28
India	21
Ireland	13
Chile	13
Finland	11
Spain	11
Poland	10
Denmark	10
Australia	10
Hungary	10
Sweden	10
Netherlands	10
Norway	9
Italy	9
Austria	9
Belgium	7
Argentina	5

Top 3 invoice totals

```
SELECT invoice_id, customer_id, billing_city, total  
FROM invoice  
ORDER BY total DESC  
LIMIT 3;
```

	invoice_id	customer_id	billing_city	total
▶	183	42	Bordeaux	23.759999999999998
	92	32	Winnipeg	19.8
	526	5	Prague	19.8

city with the highest total invoice amount

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

	billing_city	total_amount
▶	Prague	273.2400000000007

Customer who has spent the most money

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

	customer_id	first_name	last_name	total_spent
▶	5	František	Wichterlová	144.54000000000002



Level

MODERATE



Email, First name, and Last name of customers who listen to Rock music

```

SELECT DISTINCT c.email, c.first_name, c.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
JOIN track t ON il.track_id = t.track_id
JOIN Genre g ON t.genre_id = g.genre_id
WHERE g.name = 'Rock';
    
```

	email	first_name	last_name
▶	marthasilk@gmail.com	Martha	Silk
	luisg@embraer.com.br	Luís	Gonçalves
	dmiller@comcast.com	Dan	Miller
	kara.nielsen@jubii.dk	Kara	Nielsen
	roberto.almeida@riotur.gov.br	Roberto	Almeida
	edfrancis@yahoo.ca	Edward	Francis
	jfernandes@yahoo.pt	João	Fernandes
	tgoyer@apple.com	Tim	Goyer
	ellie.sullivan@shaw.ca	Ellie	Sullivan
	jenniferp@rogers.ca	Jennifer	Peterson
	leonekohler@surfeu.de	Leonie	Köhler
	farris@google.com	Frank	Harris
	frantisek.wichterle@seznam.cz	František	Wichterle

Top Rock artists based on track count

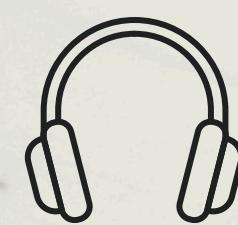
```
SELECT ar.name AS artist_name,  
       COUNT(t.track_id) AS rock_track_count  
  FROM Artist ar  
  JOIN Album al ON ar.artist_id = al.artist_id  
  JOIN track t ON al.album_id = t.album_id  
  JOIN Genre g ON t.genre_id = g.genre_id  
 WHERE g.name = 'Rock'  
 GROUP BY ar.name  
 ORDER BY rock_track_count DESC  
 LIMIT 10;
```

	artist_name	rock_track_count
▶	AC/DC	18
	Aerosmith	15
	Audioslave	14
	Led Zeppelin	14
	Alanis Morissette	13
	Alice In Chains	12
	Frank Zappa & Captain Beefheart	9
	Accept	4

Track names longer than the average track length

```
SELECT name, milliseconds
FROM track
WHERE milliseconds > (
    SELECT AVG(milliseconds) FROM track
)
```

	name	milliseconds
▶	For Those About To Rock (We Salute You)	343719
	Balls to the Wall	342562
	Restless and Wild	252051
	Princess of the Dawn	375418
	Evil Walks	263497
	Breaking The Rules	263288
	Spellbound	270863
	Go Down	331180
	Let There Be Rock	366654
	Bad Boy Boogie	267728
	Problem Child	325041
	Overdose	369319
	Hell Ain't A Bad Place To Be	254380
	Whole Lotta Rosie	323761
	Walk On Water	295680



Level

ADVANCE



How much each customer has spent on each artist

```

WITH artist_revenue AS (
  SELECT
    il.invoice_id,
    t.track_id,
    al.artist_id,
    il.unit_price * il.quantity AS revenue
  FROM Invoice_line il
  JOIN track t ON il.track_id = t.track_id
  JOIN Album a ON t.album_id = a.album_id
  JOIN Artist al ON a.artist_id = al.artist_id
),
customer_artist_spending AS (
  SELECT
    i.customer_id,
    ar.artist_id,
    SUM(ar.revenue) AS total_spent
  FROM artist_revenue ar
  JOIN Invoice i ON ar.invoice_id = i.invoice_id
  GROUP BY i.customer_id, ar.artist_id
)
SELECT
  c.first_name,
  c.last_name,
  a.name AS artist_name,
  cas.total_spent
FROM customer_artist_spending cas
JOIN Customer c ON cas.customer_id = c.customer_id
JOIN Artist a ON cas.artist_id = a.artist_id
ORDER BY cas.total_spent DESC;

```

	first_name	last_name	artist_name	total_spent
▶	Steve	Murray	AC/DC	17.82
	Mark	Taylor	Aerosmith	14.850000000000001
	Jennifer	Peterson	Aerosmith	14.850000000000001
	Fernanda	Ramos	Antônio Carlos Jobim	13.860000000000001
	Leonie	Käthler	Audioslave	13.860000000000001
	Emma	Jones	Alanis Morissette	12.870000000000001
	João	Fernandes	Alanis Morissette	12.870000000000001
	Edward	Francis	Alanis Morissette	12.870000000000001
	Victor	Stevens	Alice In Chains	11.88
	Phil	Hughes	AC/DC	10.89
	Kathy	Chase	AC/DC	10.89
	Stanisław	Wąjciak	Buddy Guy	10.89
	Stanisław	Wąjciak	AC/DC	9.9
	Frank	Ralston	AC/DC	7.920000000000001
	Luís	Gonçalves	AC/DC	7.920000000000001

Most popular music genre for each country

```

WITH genre_sales AS (
    SELECT
        c.country,
        g.name AS genre_name,
        COUNT(il.invoice_line_id) AS purchase_count
    FROM Customer c
    JOIN Invoice i ON c.customer_id = i.customer_id
    JOIN Invoice_line il ON i.invoice_id = il.invoice_id
    JOIN track t ON il.track_id = t.track_id
    JOIN Genre g ON t.genre_id = g.genre_id
    GROUP BY c.country, g.name
),
ranked_genres AS (
    SELECT *,
        RANK() OVER (PARTITION BY country ORDER BY purchase_count DESC) AS ranks
    FROM genre_sales
)
SELECT country, genre_name, purchase_count
FROM ranked_genres
WHERE ranks = 1
ORDER BY country;

```

	country	genre_name	purchase_count
▶	Argentina	Rock	1
	Australia	Rock	18
	Austria	Rock	6
	Belgium	Rock	5
	Brazil	Rock	26
	Canada	Rock	57
	Chile	Rock	7
	Czech Republic	Rock	14
	Denmark	Rock	6
	Finland	Rock	6
	France	Rock	26
	Germany	Rock	28
	Hungary	Rock	4
	India	Rock	13
	Ireland	Rock	2
	Italy	Rock	3
	Netherlands	Rock	6
	Norway	Metal	2
	Poland	Rock	14

Top-spending customer for each country

```

WITH customer_spending AS (
    SELECT
        c.customer_id,
        c.first_name,
        c.last_name,
        c.country,
        SUM(i.total) AS total_spent
    FROM Customer c
    JOIN Invoice i ON c.customer_id = i.customer_id
    GROUP BY c.customer_id, c.first_name, c.last_name, c.country
),
ranked_customers AS (
    SELECT *,
        RANK() OVER (PARTITION BY country ORDER BY total_spent DESC) AS ranks
    FROM customer_spending
)
SELECT country, first_name, last_name, total_spent
FROM ranked_customers
WHERE ranks = 1
ORDER BY country;

```

	country	first_name	last_name	total_spent
▶	Argentina	Diego	Gutiérrez	39.6
	Australia	Mark	Taylor	81.18
	Austria	Astrid	Gruber	69.3
	Belgium	Daan	Peeters	60.38999999999999
	Brazil	Luís	Gonçalves	108.8999999999998
	Canada	François	Tremblay	99.99
	Chile	Luis	Rojas	97.02000000000001
	Czech Republic	František	Wichterlová	144.54000000000002
	Denmark	Kara	Nielsen	37.61999999999999
	Finland	Terhi	Hämäläinen	79.2
	France	Wyatt	Girard	99.99
	Germany	Fynn	Zimmermann	94.05000000000001
	Hungary	Ladislav	Kovács	78.21
	India	Manoj	Pareek	111.86999999999999
	Ireland	Hugh	O'Reilly	114.8399999999997
	Italy	Lucas	Mancini	50.49
	Netherlands	Johannes	Van der Berg	65.34
	Norway	Bjørn	Hansen	72.27000000000001