

MUSIC DATA ANALYSIS

Tables in Database

```
-- tables list  
  
SELECT table_name  
FROM information_schema.tables  
WHERE table_schema = 'public'  
AND table_type = 'BASE TABLE';
```

	table_name	🔒
1	Employee	
2	Customer	
3	Invoice	
4	Invoice_line	
5	Media_type	
6	Genre	
7	Artist	
8	playlist	
9	track	
10	playlist_track	
11	Album	

LEVEL

BASIC

Conce
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Most senior employee based on job title

```
-- most senior employee based on job title
```

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

	first_name character varying	last_name character varying
1	Mohan	Madan

Countries that have the most invoices

```
-- 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 character varying	total_invoices bigint
1	USA	131
2	Canada	76
3	Brazil	61
4	France	50
5	Germany	41
6	Czech Republic	30
7	Portugal	29
8	United Kingdom	28
9	India	21
10	Chile	13
11	Ireland	13
12	Spain	11
13	Finland	11
14	Australia	10
15	Netherlands	10
16	Sweden	10
17	Poland	10
18	Hungary	10

Top 3 invoice totals

```
-- top 3 invoice totals
```

```
SELECT *
FROM "Invoice"
ORDER BY "total" DESC
LIMIT 3;
```

	invoice_date date	billing_address character varying	billing_city character varying	billing_state character varying	billing_country character varying	billing_postal_code character varying	total numeric
1	2018-02-09	9, Place Louis Barthou	Bordeaux	None	France	33000	23.759999999999998
2	2017-07-02	696 Osborne Street	Winnipeg	MB	Canada	R3L 2B9	19.8
3	2017-02-21	1498 rue Bélanger	Montréal	QC	Canada	H2G 1A7	19.8

City with the highest total invoice amount

```
-- city with the highest total invoice amount
```

```
SELECT "billing_city", ROUND(SUM("total"), 2) AS total_amount
FROM "Invoice"
GROUP BY "billing_city"
ORDER BY total_amount DESC
LIMIT 1;
```

	billing_city	total_amount
1	Prague	273.24

Customer who has spent the most money

```
-- customer who has spent the most money

SELECT c."customer_id", c."first_name", c."last_name", ROUND(SUM(i."total"),2) 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 [PK] integer	first_name character varying	last_name character varying	total_spent numeric
1	5	František	Wichterlová	144.54

LEVEL

MODERATE

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Email, first name, and last name of customers who listen to Rock music

```
--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 character varying	first_name character varying	last_name character varying
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
11	eduardo@woodstock.com.br	Eduardo	Martins
12	ellie.sullivan@shaw.ca	Ellie	Sullivan
13	emma_jones@hotmail.com	Emma	Jones
14	enrique_munoz@yahoo.es	Enrique	Muñoz
15	fernadaramos4@uol.com.br	Fernanda	Ramos
16	farris@google.com	Frank	Harris
17	fralston@gmail.com	Frank	Ralston
18	frantisekw@jetbrains.com	František	Wichterlová
19	ftremblay@gmail.com	François	Tremblay
20	fzimmermann@yahoo.de	Fynn	Zimmermann

Top 10 Rock artists based on track count

```
--top 10 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
1	Led Zeppelin	114
2	U2	112
3	Deep Purple	92
4	Iron Maiden	81
5	Pearl Jam	54
6	Van Halen	52
7	Queen	45
8	The Rolling Stones	41
9	Creedence Clearwater Revival	40
10	Kiss	35

Track names longer than the average track length

--track names longer than the average track length

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

	artist_name character varying	rock_track_count bigint
1	Led Zeppelin	114
2	U2	112
3	Deep Purple	92
4	Iron Maiden	81
5	Pearl Jam	54
6	Van Halen	52
7	Queen	45
8	The Rolling Stones	41
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10	Kiss	35



ADVANCE

LEVEL

ADVANCE

How much each customer has spent on each artist

-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 character varying	last_name character varying	artist_name character varying	total_spent numeric
1	Hugh	O'Reilly	Queen	27.72
2	Wyatt	Girard	Frank Sinatra	23.76
3	Aaron	Mitchell	James Brown	19.80
4	Robert	Brown	Creedence Clearwater Revival	19.80
5	Helena	Holý	Red Hot Chili Peppers	19.80
6	François	Tremblay	The Who	19.80
7	František	Wichterlová	Kiss	19.80
8	Heather	Leacock	House Of Pain	18.81
9	Hugh	O'Reilly	Nirvana	18.81
10	Niklas	Schröder	Queen	18.81
11	Camille	Bernard	Marisa Monte	17.82
12	Luís	Gonçalves	The Cult	17.82
13	Mark	Taylor	The Clash	17.82
14	Hugh	O'Reilly	Marisa Monte	17.82
15	Dan	Miller	Eric Clapton	17.82
16	František	Wichterlová	Eric Clapton	17.82
17	Richard	Cunningham	Marvin Gaye	17.82
18	Ladislav	Kovács	The Cult	17.82

Most popular music genre for each country

```
--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 rank
    FROM genre_sales
)
SELECT country, genre_name, purchase_count
FROM ranked_genres
WHERE rank = 1
ORDER BY "country";
```

	country character varying	genre_name character varying	purchase_count bigint
1	Argentina	Alternative & Punk	17
2	Australia	Rock	34
3	Austria	Rock	40
4	Belgium	Rock	26
5	Brazil	Rock	205
6	Canada	Rock	333
7	Chile	Rock	61
8	Czech Republic	Rock	143
9	Denmark	Rock	24
10	Finland	Rock	46
11	France	Rock	211
12	Germany	Rock	194
13	Hungary	Rock	44
14	India	Rock	102
15	Ireland	Rock	72
16	Italy	Rock	35
17	Netherlands	Rock	33
18	Norway	Rock	40
19	Poland	Rock	40
20	Portugal	Rock	108

Top-spending customer for each country

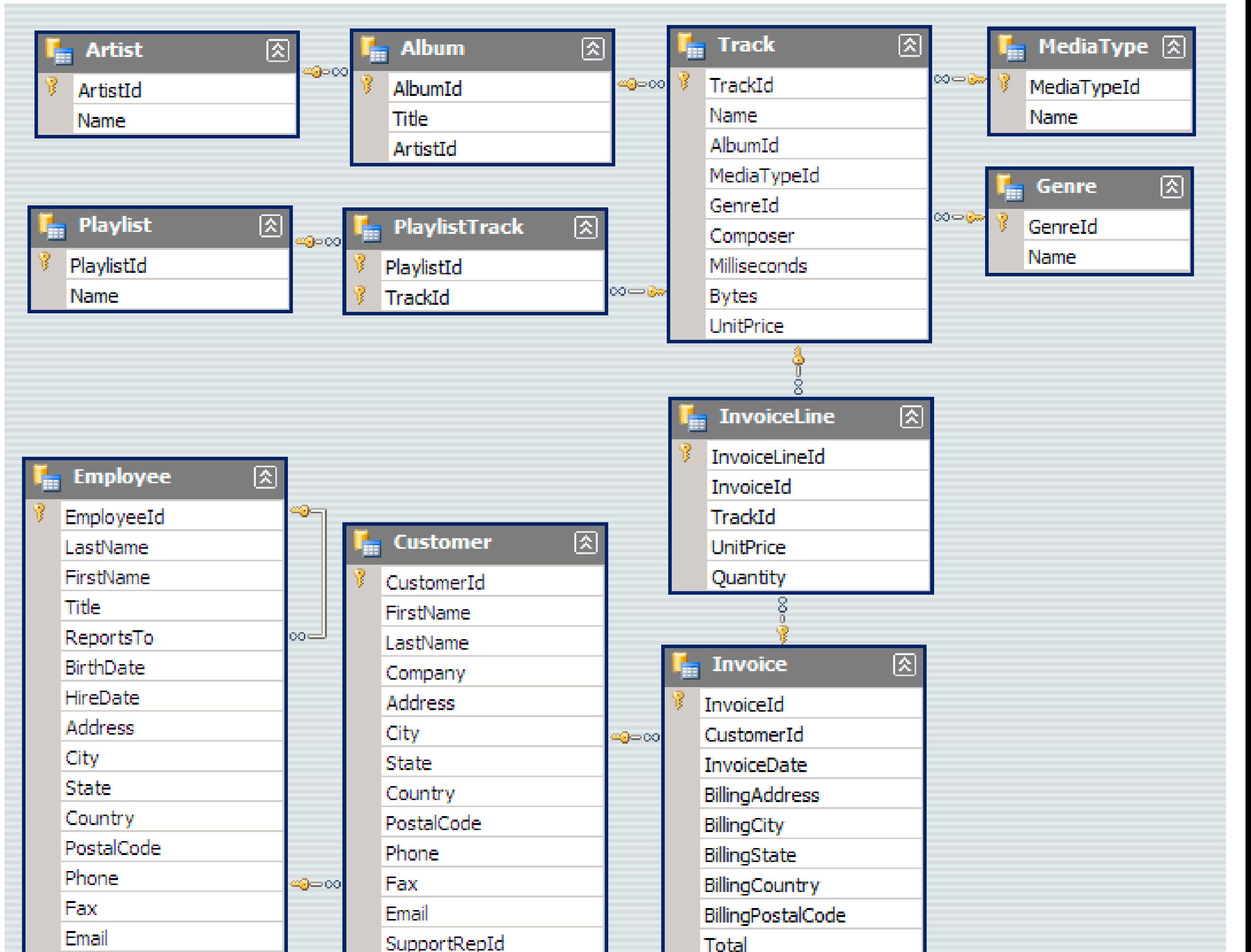
```
--top-spending customer for each country

WITH customer_spending AS (
    SELECT
        c."customer_id",
        c."first_name",
        c."last_name",
        c."country",
        ROUND(SUM(i."total"),2) 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 rank
    FROM customer_spending
)
SELECT country, first_name, last_name, total_spent
FROM ranked_customers
WHERE rank = 1
ORDER BY "country";
```

	country character varying	first_name character varying	last_name character varying	total_spent numeric
1	Argentina	Diego	Gutiérrez	39.60
2	Australia	Mark	Taylor	81.18
3	Austria	Astrid	Gruber	69.30
4	Belgium	Daan	Peeters	60.39
5	Brazil	Luís	Gonçalves	108.90
6	Canada	François	Tremblay	99.99
7	Chile	Luis	Rojas	97.02
8	Czech Republic	František	Wichterlová	144.54
9	Denmark	Kara	Nielsen	37.62
10	Finland	Terhi	Hämäläinen	79.20
11	France	Wyatt	Girard	99.99
12	Germany	Fynn	Zimmermann	94.05
13	Hungary	Ladislav	Kovács	78.21
14	India	Manoj	Pareek	111.87
15	Ireland	Hugh	O'Reilly	114.84
16	Italy	Lucas	Mancini	50.49
17	Netherlands	Johannes	Van der Berg	65.34
18	Norway	Bjørn	Hansen	72.27
19	Poland	Stanisław	Wójcik	76.23
20	Portugal	João	Fernandes	102.96
21	Spain	Enrique	Muñoz	98.01
22	Sweden	Joakim	Johansson	75.24
23	United Kingdom	Phil	Hughes	98.01

Entity- Relationship Diagram

concept

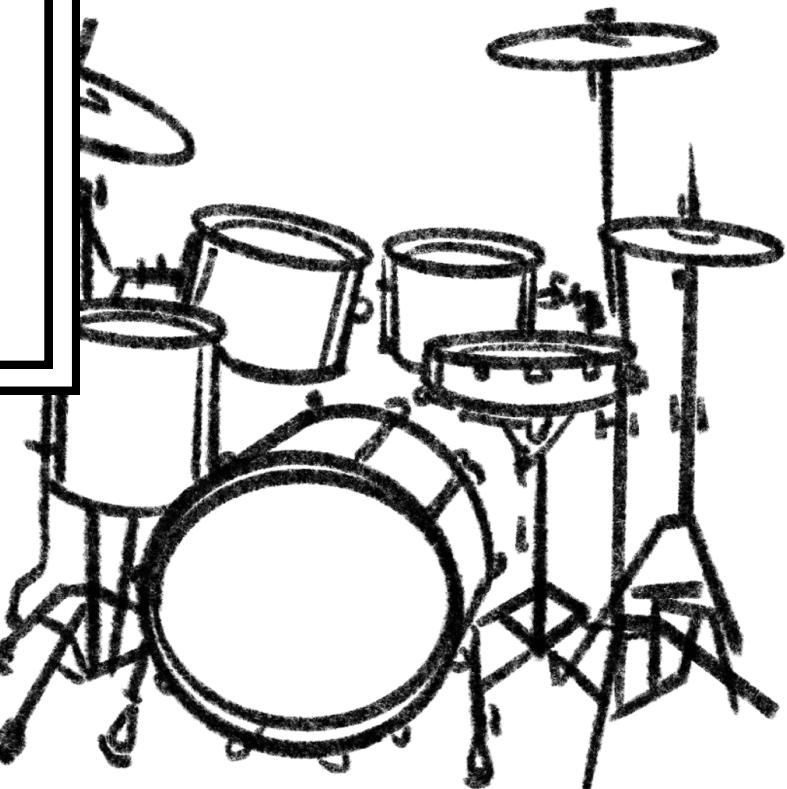


Important Links

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Thank You

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