

SQL PROJECT

Presented by Drashti Bamharoliya

INTRODUCTION

In this project, we used SQL to find useful information from a Music Store database.

The database includes details about customers, employees, artists, albums, songs, and invoices.

Using different SQL queries, we answered questions like:

- Who is the most senior employee?
- Which country has the most invoices?
- Which city or customer brings in the most money?
- Who listens to Rock music the most?

This project shows how we can use SQL to understand business data and make smart decisions.

BACKGROUND

 Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla vel turpis at est varius dignissim. Integer facilisis porta malesuada. Curabitur vel euismod tortor, vel lobortis odio. Suspendisse mollis maximus turpis sit amet egestas. Donec consequat id magna facilisis volutpat. Pellentesque mollis ornare fermentum. Ut et maximus tortor, non egestas est. Mauris euismod arcu et enim imperdiet, et malesuada diam sagittis. Etiam sit amet justo a velit maximus varius at non risus. Mauris a maximus orci. Etiam nec convallis enim.



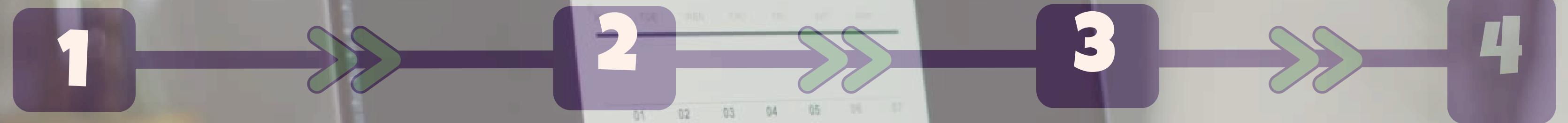
PROJECT GOALS

1. Answer Real-World Business Questions
2. Make Data-Driven Decisions
3. Support decisions like planning a music festival or targeting top-spending customers using query results.
4. Develop Analytical Thinking
5. Learn how to break down a business question into an SQL solution and interpret the results meaningfully.

MUSIC STORE DATA ANALYSIS

The Music Store Data Analysis project provides an opportunity to apply SQL concepts to a real-world dataset. By working with a music store database, you will practice creating tables, defining relationships, importing data, and writing complex queries to answer business questions. This project reinforces skills in database design, data manipulation, and analytical query writing.

PROCESS



Load & Set Up Database

- Dropped and created the music_store database
- Created tables: Customers, Employees, Tracks, Albums, etc.
- Defined relationships using foreign keys

Understand the Data Structure

- Reviewed each table's purpose
- Identified key connections between tables (e.g., Track ↔ Album ↔ Artist)

Write SQL Querier

- Used SELECT, JOIN, GROUP BY, ORDER BY, LIMIT, and subqueries
- Solved each business question with efficient SQL code

Analyze Results

- Interpreted the output of each query
- Connected findings with business insights

TABLE CREATION

1

```
• CREATE TABLE Genre (
    genre_id INT PRIMARY KEY,
    name VARCHAR(120)
);
```

	genre_id	name
▶	1	Rock
	2	Jazz
	3	Metal
	4	Alternative & Punk
	5	Rock And Roll
	6	Blues
	7	Latin
	8	Reggae
	9	Pop
	10	Soundtrack
	11	Bossa Nova
	12	Easy Listening
	13	Heavy Metal
genre 70		x

2

```
• CREATE TABLE MediaType (
    media_type_id INT PRIMARY KEY,
    name VARCHAR(120)
);
```

	media_type_id	name
▶	1	MPEG audio file
	2	Protected AAC audio file
	3	Protected MPEG-4 video file
	4	Purchased AAC audio file
	5	AAC audio file
	NULL	NULL

TABLE CREATION

3

```
CREATE TABLE Employees (
    employee_id INT PRIMARY KEY,
    last_name VARCHAR(120),
    first_name VARCHAR(120),
    title VARCHAR(120),
    reports_to INT,
    levels VARCHAR(255),
    birthdate varchar(100),
    hire_date varchar(100),
    address VARCHAR(255),
    city VARCHAR(100),
    state VARCHAR(100),
    country VARCHAR(100),
    postal_code VARCHAR(20),
    phone VARCHAR(50),
    fax VARCHAR(50),
    email VARCHAR(100)
```



TABLE CREATION

4

```
CREATE TABLE Customerss (
    customer_id INT PRIMARY KEY,
    first_name VARCHAR(120),
    last_name VARCHAR(120),
    company VARCHAR(120),
    address VARCHAR(255),
    city VARCHAR(100),
    state VARCHAR(100),
    country VARCHAR(100),
    postal_code VARCHAR(20),
    phone VARCHAR(50),
    fax VARCHAR(50),
    email VARCHAR(100),
    support_rep_id INT,
    FOREIGN KEY (support_rep_id) REFERENCES Employees(employee_id));
```



customer_id	first_name	last_name	company	address	city	state	country	postal_code	phone
1	Luís	Gonçalves	Embraer - Empresa Brasileira de Aeronáutica S.A.	Av. Brigadeiro Faria Lima, 2170	São José dos Campos	SP	Brazil	12227-000	+55 (12) 3923-5
2	Leonie	Käthler		Theodor-Heuss-Straße 34	Stuttgart		Germany	70174	+49 0711 28422
3	François	Tremblay		1498 rue Béclanger	Montréal	QC	Canada	H2G 1A7	+1 (514) 721-47
4	Bjørn	Hansen		Ullevålsveien 14	Oslo		Norway	171	+47 22 44 22 22
5	František	Wichterlová	JetBrains s.r.o.	Klanova 9/506	Prague		Czech Republic	14700	+420 2 4172 55
6	Helena	Holářka		Rilská 3174/6	Prague		Czech Republic	14300	+420 2 4177 04
7	Astrid	Gruber		Rotenturmstraße 4, 1010 Innere Stadt	Vienne		Austria	1010	+43 01 5134505
8	Daan	Peeters		Grötstraat 63	Brussels		Belgium	1000	+32 02 219 03 0
9	Kara	Nielsen		Sønder Boulevard 51	Copenhagen		Denmark	1720	+453 3331 9991
10	Eduardo	Martins	Woodstock Discos	Rua Dr. Falcão Filho, 155	São Paulo	SP	Brazil	01007-010	+55 (11) 3033-5

TABLE CREATION

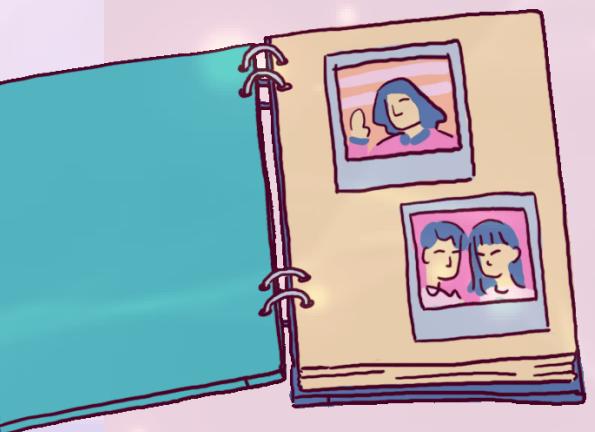
5

```
CREATE TABLE Album (
    album_id INT PRIMARY KEY,
    title VARCHAR(160),
    artist_id INT,
    FOREIGN KEY (artist_id) REFERENCES Artist(artist_id)
);
```

6

```
CREATE TABLE Artist (
    artist_id INT PRIMARY KEY,
    name VARCHAR(120)
);
```

	album_id	title	artist_id
▶	1	For Those About To Rock We Salute You	1
	2	Balls to the Wall	2
	3	Restless and Wild	2
	4	Let There Be Rock	1
	5	Big Ones	3
	6	Jagged Little Pill	4
	7	Facelift	5
	8	Warner 25 Anos	6
	9	Plays Metallica By Four Cellos	7
	10	Audioslave	8
	11	Out Of Exile	8
	12	BackBeat Soundtrack	9



	artist_id	name
▶	1	AC/DC
	2	Accept
	3	Aerosmith
	4	Alanis Morissette
	5	Alice In Chains
	6	Antônio Carlos Jobim
	7	Apocalyptica
	8	Audioslave
	9	BackBeat
	10	Billy Cobham
	11	Black Label Society
	12	Black Sabbath

TABLE CREATION

7

```
CREATE TABLE Track (
    track_id INT PRIMARY KEY,
    name VARCHAR(200),
    album_id INT,
    media_type_id INT,
    genre_id INT,
    composer VARCHAR(220),
    milliseconds INT,
    bytes INT,
    unit_price DECIMAL(10,2),
    FOREIGN KEY (album_id) REFERENCES Album(album_id),
    FOREIGN KEY (media_type_id) REFERENCES MediaType(med
    FOREIGN KEY (genre_id) REFERENCES Genre(genre_id)
);
```



	track_id	name	album_id	media_type_id	genre_id	composer	milliseconds	bytes	unit_price
▶	1	For Those About To Rock (We Salute You)	1	1	1	Angus Young, Malcolm Young, Brian Johnson	343719	11170334	0.99
	2	Balls to the Wall	2	2	1		342562	5510424	0.99
	3	Fast As a Shark	3	2	1	F. Baltes, S. Kaufman, U. Dirksneider & W. Hof...	230619	3990994	0.99
	4	Restless and Wild	3	2	1	F. Baltes, R.A. Smith-Diesel, S. Kaufman, U. Dir...	252051	4331779	0.99
	5	Princess of the Dawn	3	2	1	Deaffy & R.A. Smith-Diesel	375418	6290521	0.99
	6	Put The Finger On You	1	1	1	Angus Young, Malcolm Young, Brian Johnson	205662	6713451	0.99
	7	Let's Get It Up	1	1	1	Angus Young, Malcolm Young, Brian Johnson	233926	7636561	0.99
	8	Inject The Venom	1	1	1	Angus Young, Malcolm Young, Brian Johnson	210834	6852860	0.99
	9	Snowballed	1	1	1	Angus Young, Malcolm Young, Brian Johnson	203102	6599424	0.99
	10	Evil Walks	1	1	1	Angus Young, Malcolm Young, Brian Johnson	263497	8611245	0.99
	11	C.O.D.	1	1	1	Angus Young, Malcolm Young, Brian Johnson	199836	6566314	0.99
	12	Breaking The Rules	1	1	1	Angus Young, Malcolm Young, Brian Johnson	263288	8596840	0.99

TABLE CREATION

8

```
CREATE TABLE Invoice (
    invoice_id INT PRIMARY KEY,
    customer_id INT,
    invoice_date DATE,
    billing_address VARCHAR(255),
    billing_city VARCHAR(100),
    billing_state VARCHAR(100),
    billing_country VARCHAR(100),
    billing_postal_code VARCHAR(20),
    total DECIMAL(10,2),
    FOREIGN KEY (customer_id) REFERENCES Customers(customer_id));
```



	invoice_id	customer_id	invoice_date	billing_address	billing_city	billing_state	billing_country	billing_postal_code	total
▶	1	18	2017-01-03	627 Broadway	New York	NY	USA	10012-2612	15.84
	2	30	2017-01-03	230 Elgin Street	Ottawa	ON	Canada	K2P 1L7	9.90
	3	40	2017-01-05	8, Rue Hanovre	Paris	None	France	75002	1.98
	4	18	2017-01-06	627 Broadway	New York	NY	USA	10012-2612	7.92
	5	27	2017-01-07	1033 N Park Ave	Tucson	AZ	USA	85719	16.83
	6	31	2017-01-10	194A Chain Lake Drive	Halifax	NS	Canada	B3S 1C5	1.98
	7	49	2017-01-12	Ordynacka 10	Warsaw	None	Poland	00-358	10.89
	8	59	2017-01-13	3,Raj Bhavan Road	Bangalore	None	India	560001	9.90
	9	18	2017-01-18	627 Broadway	New York	NY	USA	10012-2612	8.91
	10	31	2017-01-18	194A Chain Lake Drive	Halifax	NS	Canada	B3S 1C5	1.98
	11	38	2017-01-20	Barbarossastraße 19	Berlin	None	Germany	10779	10.89
	12	42	2017-01-21	9, Place Louis Barthou	Bordeaux	None	France	33000	3.96

TABLE CREATION

9

```
create table invoice_line (
    invoice_line_id int,
    invoice_id int,
    track_id bigint,
    unit_price float,
    quantity int);
```

10

```
CREATE TABLE Playlist (
    playlist_id INT PRIMARY KEY,
    name VARCHAR(255)
);
```

	invoice_line_id	invoice_id	track_id	unit_price	quantity
▶	1	1	1158	0.99	1
	2	1	1159	0.99	1
	3	1	1160	0.99	1
	4	1	1161	0.99	1
	5	1	1162	0.99	1
	6	1	1163	0.99	1
	7	1	1164	0.99	1
	8	1	1165	0.99	1
	9	1	1166	0.99	1
	10	1	1167	0.99	1
	11	1	1168	0.99	1
	12	1	1169	0.99	1



	playlist_id	name
▶	1	Music
	2	Movies
	3	TV Shows
	4	Audiobooks
	5	90â€™s Music
	6	Audiobooks
	7	Movies
	8	Music
	9	Music Videos
	10	TV Shows
	11	Brazilian Music
	12	Classical

TABLE CREATION

11

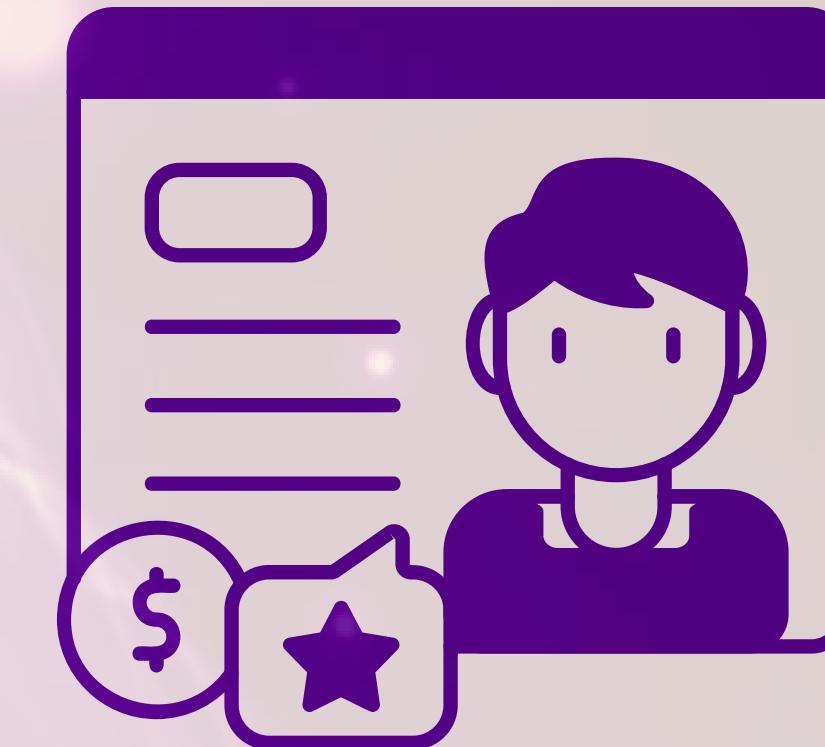
```
CREATE TABLE Playlisttrack (
    playlist_id INT,
    track_id INT);
```



	playlist_id	track_id
▶	1	1137
	1	1138
	1	1139
	1	1140
	1	1141
	1	1142
	1	1143
	1	1144
	1	1145
	1	468
	1	469
	1	470

Q1 WHO IS THE SENIOR MOST EMPLOYEE BASED ON JOB TITLE?

```
select title,levels from employees  
order by levels desc  
LIMIT 1;
```



Q2 WHICH COUNTRIES HAVE THE MOST INVOICES?

```
select count(invoice_id), billing_country from invoice  
group by billing_country  
order by count(invoice_id) desc;
```

Q3 WHAT ARE THE TOP 3 VALUES OF TOTAL INVOICE?

```
select total from invoice  
order by total desc limit 3;
```



Q4 WHICH CITY HAS THE BEST CUSTOMERS?

```
select city, count(invoice_id) as count_invoice  
from customers c  
join invoice i on i.customer_id=c.customer_id  
group by city  
order by count_invoice desc;
```

Q5 WHO IS THE BEST CUSTOMER?

```
select first_name, last_name ,count(total) from customerss c join  
invoice i on  
c.customer_id=i.customer_id  
group by first_name, last_name  
order by count(total) desc;
```



Q6 WRITE A 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

**THANK
YOU**