INNOMATİCS®
RESEARCH LABS

INNOVATION. AUTOMATION. ANALYTICS

PROJECT ON

MUSIC STORE MANAGEMENT

MUSIC STORE MANAGEMENT

The Composers

D. Sai Sumanth

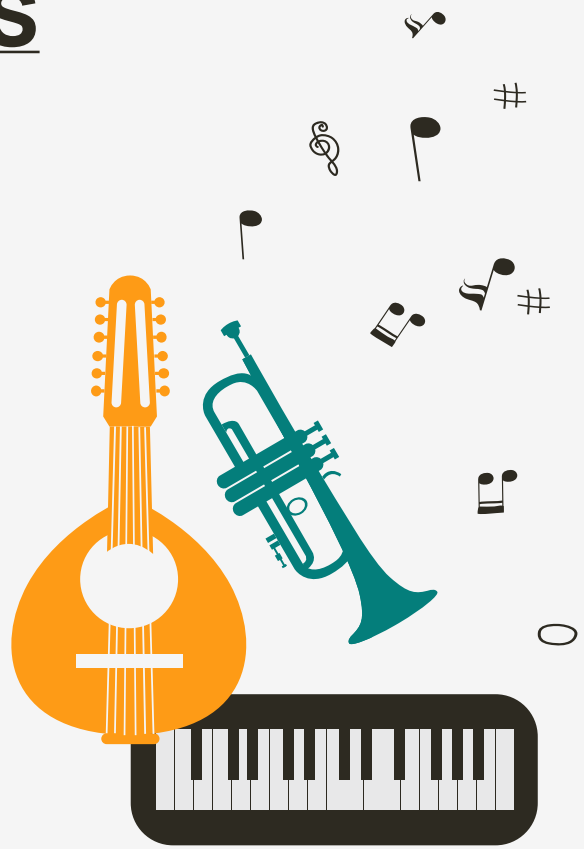
Background – B.Tech CSE AI/ML, BATCH - 433

V. Amarnath Reddy

Background – B.Tech CSE AI/ML, BATCH - 433

M. Aravind

Background – B.Tech ECE, BATCH - 433



INTRODUCTION

- In this project, we conducted a comprehensive analysis of music store data using MySQL to uncover key insights into customer behavior, music genre preferences, and sales performance.

- By leveraging advanced SQL queries, we explored patterns in revenue, top-spending customers, most popular genres by country, and best-selling tracks and artists.

- This analysis supports data-driven decision-making for promotional planning, market segmentation, and inventory optimization.

TABLES

Genre

GenreId	Name
1	Rock
2	Jazz
3	Metal
4	Alternative & Punk
5	Rock And Roll

MediaType

MediaTypeId	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

Track

TrackId	Name	AlbumId	MediaTypeId	GenreId	Composer	Milliseconds	Bytes	UnitPrice
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. Dirkscneider & 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

Employee

EmployeeId	LastName	FirstName	Title	ReportsTo	Levels	BirthDate	HireDate	Address	City	State	Country	PostalCode	Phone	Fax	Email
1	Adams	Andrew	General Manager	9	L6	1962-02-18	2016-08-14	11120 Jasper Ave NW	Edmonton	AB	Canada	T5K 2N1	+1 (780) 428-9482	+1 (780) 428-3457	andrew@chinookcorp.com
2	Edwards	Nancy	Sales Manager	1	L4	1958-12-08	2016-05-01	825 8 Ave SW	Calgary	AB	Canada	T2P 2T3	+1 (403) 262-3443	+1 (403) 262-3322	nancy@chinookcorp.com
3	Peacock	Jane	Sales Support Agent	2	L1	1973-08-29	2017-04-01	1111 6 Ave SW	Calgary	AB	Canada	T2P 5M5	+1 (403) 262-3443	+1 (403) 262-6712	jane@chinookcorp.com
4	Park	Margaret	Sales Support Agent	2	L1	1947-09-19	2017-05-03	683 10 Street SW	Calgary	AB	Canada	T2P 5G3	+1 (403) 263-4423	+1 (403) 263-4289	margaret@chinookcorp.com
5	Johnson	Steve	Sales Support Agent	2	L1	1965-03-03	2017-10-17	7727B 41 Ave	Calgary	AB	Canada	T3B 1Y7	1 (780) 836-9987	1 (780) 836-9543	steve@chinookcorp.com
6	Mitchell	Michael	IT Manager	1	L3	1973-07-01	2016-10-17	5827 Bowness Road NW	Calgary	AB	Canada	T3B 0C5	+1 (403) 246-9887	+1 (403) 246-9899	michael@chinookcorp.com
7	King	Robert	IT Staff	6	L2	1970-05-29	2017-01-02	590 Columbia Boulevard West	Lethbridge	AB	Canada	T1K 5N8	+1 (403) 456-9986	+1 (403) 456-8485	robert@chinookcorp.com
8	Callahan	Laura	IT Staff	6	L2	1968-01-09	2017-03-04	923 7 ST NW	Lethbridge	AB	Canada	T1H 1Y8	+1 (403) 467-3351	+1 (403) 467-8772	laura@chinookcorp.com
9	Madan	Mohan	Senior General Manager	0	L7	1961-01-26	2016-01-14	1008 Vrinda Ave MT	Edmonton	AB	Canada	T5K 2N1	+1 (780) 428-9482	+1 (780) 428-3457	madan.mohan@chinookcorp.co

Customer

CustomerId	FirstName	LastName	Company	Address	City	State	Country	PostalCode	Phone	Fax	Email	SupportRepId
1	LuÃs	GonÃ§alves	Embraer - Empresa Brasileira de AeronÃ¡utica S.A.	Av. Brigadeiro Faria Lima, 2170	SÃ£o JosÃ© dos Campos	SP	Brazil	12227-000	+55 (12) 3923-5555	+55 (12) 3923-5566	luisg@embraer.com.br	3
2	Leonie	KÃ¶hler		Theodor-Heuss-StraÃŸe 34	Stuttgart		Germany	70174	+49 0711 2842222		leonekohler@surfeu.de	5
3	FranÃ§ois	Tremblay		1498 rue BÃ©langer	MontrÃ©al	QC	Canada	H2G 1A7	+1 (514) 721-4711		ftremblay@gmail.com	3
4	BjÃ¸rn	Hansen		Ullevålsveien 14	Oslo		Norway	171	+47 22 44 22 22		bjorn.hansen@yahoo.no	4
5	FrantiÅ¡ek	WichterlovÃ¡	JetBrains s.r.o.	Klanova 9/506	Prague		Czech Republic	14700	+420 2 4172 5555	+420 2 4172 5555	frantisekw@jetbrains.com	4
6	Helena	HolÃ½		RÃskÃ¡ 3174/6	Prague		Czech Republic	14300	+420 2 4177 0449		hholy@gmail.com	5
7	Astrid	Gruber		RotenturmstraÃŸe 4, 1010 Innere Stadt	Vienne		Austria	1010	+43 01 5134505		astrid.gruber@apple.at	5
8	Daan	Peeters		GrÃ©trystraat 63	Brussels		Belgium	1000	+32 02 219 03 03		daan_peeters@apple.be	4
9	Kara	Nielsen		SÃ¸nder Boulevard 51	Copenhagen		Denmark	1720	+453 3331 9991		kara.nielsen@jubii.dk	4
10	Eduardo	Martins	Woodstock Discos	Rua Dr. FalcÃ£o Filho, 155	SÃ£o Paulo	SP	Brazil	01007-010	+55 (11) 3033-5446	+55 (11) 3033-4564	eduardo@woodstock.com.br	4

Invoice

InvoiceId	CustomerId	InvoiceDate	BillingAddress	BillingCity	BillingState	BillingCountry	BillingPostalCode	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

InvoiceLine

InvoiceLineId	InvoiceId	TrackId	UnitPrice	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

Artist

ArtistId	Name
1	AC/DC
2	Accept
3	Aerosmith
4	Alanis Morissette
5	Alice In Chains

Album

AlbumId	Title	ArtistId
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

Playlist

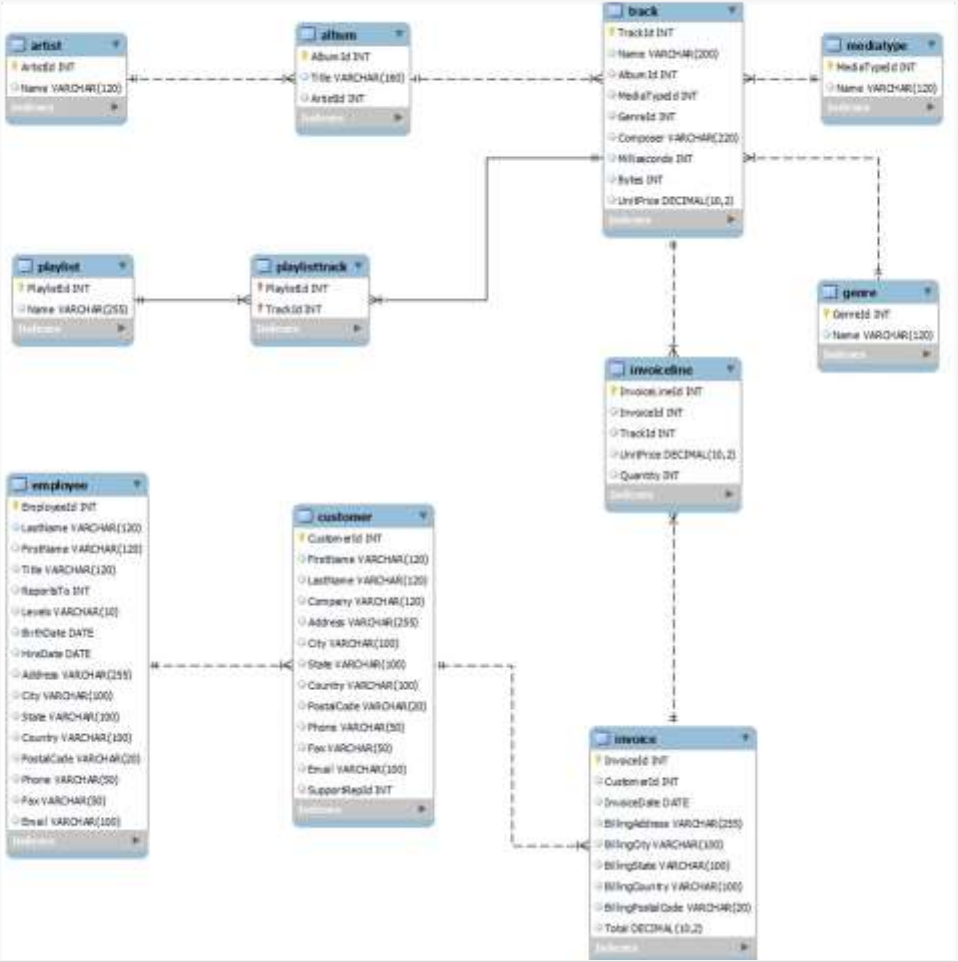
PlaylistId	Name
1	Music
2	Movies
3	TV Shows
4	Audiobooks
5	90â€™s Music
6	Audiobooks
7	Movies
8	Music

Playlist Track

PlaylistId	TrackId
1	1
8	1
17	1
1	2
8	2
17	2
1	3
5	3

INNOMATICS
RESEARCH LABS

ENTITY RELATIONSHIP(ER) DIAGRAM



INNOMATICS RESEARCH LABS

PROBLEM STATEMENT

- Analyze sales performance across countries and cities to identify top markets and revenue sources.
- Identify top customers based on spending behavior and track their musical preferences by genre and artist.
- Discover popular music genres and high-performing tracks to inform marketing and playlist strategies.
- Evaluate artist contributions, especially in the Rock genre, to target promotional opportunities and events.
- Segment customers by region a tailor promotions, identify high-value users, and understand country-specific trends.

INNOMATICS RESEARCH LABS

QUERIES

1. Who is the senior most employee based on job title?

```
SELECT * FROM Employee
ORDER BY Levels DESC
LIMIT 1;
```

EmployeeId	LastName	FirstName	Title	ReportsTo	Levels	BirthDate	HireDate	Address	City	State	Country	PostalCode	Phone	Fax	Email
9	Madan	Mohan	Senior General Manager	0	L7	1961-01-26	2016-08-22	1008 Vrinda Ave MT	Edmonton	AB	Canada	T5K 2N1	+1 (780) 428-9482	+1 (780) 428-3457	madan.moha
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

INNOMATICS RESEARCH LABS

2 . Which countries have the most Invoices?

```
SELECT BillingCountry , COUNT(InvoiceId)
FROM Invoice
GROUP BY BillingCountry
ORDER BY COUNT(InvoiceId) DESC;
```

BillingCountry	COUNT(InvoiceId)
USA	131
Canada	76
Brazil	61
France	50
Germany	41
Czech Republic	30
Portugal	29
United Kingdom	28
India	21
Ireland	13
Chile	13

INNOMATICS
RESEARCH LABS

3.What are the top 3 values of total invoice?

```
SELECT total FROM Invoice
ORDER BY Total DESC
LIMIT 3;
```

	Total
▶	23.76
	19.80
	19.80

4. Which city has the best customers? We would like to throw a promotional Music Festival in the city we made the most money. Write a Query that returns one city has the highest sum of invoice totals. Return both the city name & sum of all invoice totals.

```
SELECT BillingCity ,SUM(TOTAL) AS INVOICE_TOTAL FROM invoice
GROUP BY BillingCity
ORDER BY SUM(TOTAL) DESC
LIMIT 1;
```

	BillingCity	INVOICE_TOTAL
▶	Prague	273.24

INNOMATICS RESEARCH LABS

5. Who is the best customer? The customer who has spent the most money will be declared the best customer. Write a query that returns the person who has spent the most money

```
SELECT Customer.FirstName, Customer.LastName, SUM(Invoice.Total) AS TOTAL_SPENT
FROM Customer
Inner JOIN Invoice ON Customer.CustomerId = Invoice.CustomerId
GROUP BY Customer.CustomerId, Customer.FirstName, Customer.LastName
ORDER BY SUM(Invoice.Total) DESC
LIMIT 1
```

	CustomerId	FirstName	LastName	TOTAL_SPENT
▶	5	FrantiÅiek	WichterlovÃ¡	144.54

INNOMATICS RESEARCH LABS

6. 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

```
SELECT DISTINCT Customer.Email, Customer.FirstName, Customer.LastName, Genre.Name AS GENRE
FROM Customer
INNER JOIN Invoice ON Customer.CustomerId = Invoice.CustomerId
INNER JOIN InvoiceLine ON Invoice.InvoiceId = InvoiceLine.InvoiceId
INNER JOIN Track ON InvoiceLine.TrackId = Track.TrackId
INNER JOIN Genre ON Track.GenreId = Genre.GenreId
WHERE Genre.Name = 'Rock'
ORDER BY Customer.email;
```

Email	FirstName	LastName	GENRE
aaronmitchell@yahoo.ca	Aaron	Mitchell	Rock
alero@uol.com.br	Alexandre	Rocha	Rock
astrid.gruber@apple.at	Astrid	Gruber	Rock
bjorn.hansen@yahoo.no	BjÃ¸rn	Hansen	Rock
camille.bernard@yahoo.fr	Camille	Bernard	Rock
daan_peeters@apple.be	Daan	Peeters	Rock
diego.gutierrez@yahoo.ar	Diego	GutiÃ©rrez	Rock
dmiller@comcast.com	Dan	Miller	Rock
dominiquelefebvre@gmail.com	Dominique	Lefebvre	Rock
edfrancis@yachoo.ca	Edward	Francis	Rock

INNOMATICS RESEARCH LABS

7. Let's invite the artists who have written the most rock music in our dataset. Write a query that returns the Artist name and total track count of the top 10 rock bands

```sql
SELECT Artist.ArtistId,Artist.Name , COUNT(Track.TrackId) AS TRACK_COUNT
FROM Artist
INNER JOIN Album ON Artist.ArtistId = Album.ArtistId
INNER JOIN Track ON Album.AlbumId = Track.AlbumId
INNER JOIN Genre ON Track.GenreId = Genre.GenreId
WHERE Genre.Name = 'Rock'
GROUP BY Artist.ArtistId
ORDER BY TRACK_COUNT DESC
LIMIT 10;
```

ArtistId	Name	TRACK_COUNT
22	Led Zeppelin	114
150	U2	112
58	Deep Purple	92
90	Iron Maiden	81
118	Pearl Jam	54
152	Van Halen	52
51	Queen	45
142	The Rolling Stones	41
76	Creedence Clearwater Revival	40
52	Kiss	35

8. Return all the track names that have a song length longer than the average song length. Return the Name and Milliseconds for each track. Orderby the song length with the longest songs listed first.

```
SELECT Name , Milliseconds
FROM Track
WHERE Milliseconds > (SELECT AVG(Milliseconds) FROM Track)
ORDER BY Milliseconds DESC;
```

Name	Milliseconds
Occupation / Precipice	5286953
Through a Looking Glass	5088838
Greetings from Earth, Pt. 1	2960293
The Man With Nine Lives	2956998
Battlestar Galactica, Pt. 2	2956081
Battlestar Galactica, Pt. 1	2952702
Murder On the Rising Star	2935894
Battlestar Galactica, Pt. 3	2927802
Take the Celestra	2927677
Fire In Space	2926593
The Long Patrol	2925008
The Magnificent Warriors	2924716

9. Find how much amount is spent by each customer on artists? Write a query to return customer name, artist name and total spent

```
SELECT
CONCAT(Customer.FirstName, ' ', Customer.LastName) AS CustomerName,
Artist.Name as ArtistName,
SUM(InvoiceLine.UnitPrice * InvoiceLine.Quantity) AS Expenditure
FROM Customer
JOIN Invoice ON Customer.CustomerId = Invoice.CustomerId
JOIN InvoiceLine ON Invoice.InvoiceId = InvoiceLine.InvoiceId
JOIN Track ON Track.TrackId = InvoiceLine.TrackId
JOIN Album ON Album.AlbumId = Track.AlbumId
JOIN Artist ON Artist.ArtistId = Album.ArtistId
GROUP BY Customer.CustomerId, Artist.ArtistId
ORDER BY CustomerName;
```

CustomerName	ArtistName	Expenditure
Aaron Mitchell	U2	1.98
Aaron Mitchell	Marvin Gaye	0.99
Aaron Mitchell	The Clash	0.99
Aaron Mitchell	Pink Floyd	0.99
Aaron Mitchell	The Rolling Stones	0.99
Aaron Mitchell	Black Sabbath	0.99
Aaron Mitchell	Def Leppard	0.99
Aaron Mitchell	Chris Cornell	13.86
Aaron Mitchell	Alanis Morissette	0.99
Aaron Mitchell	The Who	0.99
Aaron Mitchell	House Of Pain	0.99

10. We want to find out the most popular music Genre for each country. We determine the most popular genre as the genre with the highest amount of purchases. Write a query that returns each country along with the top Genre. For countries where the maximum number of purchases is shared return all Genres

```sql
WITH Top_Genre_Per_Country AS (
SELECT
Invoice.BillingCountry AS Country,
Genre.Name AS GenreName,
SUM(InvoiceLine.UnitPrice * InvoiceLine.Quantity) AS genre_total,
RANK() OVER (PARTITION BY Invoice.BillingCountry
ORDER BY SUM(InvoiceLine.UnitPrice * InvoiceLine.Quantity) DESC) AS rnk
FROM Genre
INNER JOIN Track ON Track.GenreId = Genre.GenreId
INNER JOIN InvoiceLine ON InvoiceLine.TrackId = Track.TrackId
INNER JOIN Invoice ON Invoice.InvoiceId = InvoiceLine.InvoiceId
GROUP BY Invoice.BillingCountry, Genre.Name
)
SELECT
Country,
GenreName AS Most_Popular_Genre
FROM Top_Genre_Per_Country
WHERE rnk = 1
ORDER BY Country;
```

Country	Most_Popular_Genre
Argentina	Alternative & Punk
Australia	Rock
Austria	Rock
Belgium	Rock
Brazil	Rock
Canada	Rock
Chile	Rock
Czech Republic	Rock
Denmark	Rock
Finland	Rock
France	Rock

INNOMATICS RESEARCH LABS

11. Write a query that determines the customer that has spent the most on music for each country. Write a query that returns the country along with the top customer and how much they spent. For countries where the top amount spent is shared, provide all customers who spent this amount

```
WITH Top_Customers_by_Country AS (
SELECT
CONCAT(Customer.FirstName, ' ', Customer.LastName) AS Customer,
Invoice.BillingCountry AS Country,
SUM(Invoice.Total) AS Expenditure,
RANK() OVER (PARTITION BY Invoice.BillingCountry
ORDER BY SUM(Invoice.Total) DESC) AS Rnk
FROM Invoice
INNER JOIN Customer ON Customer.CustomerId = Invoice.CustomerId
GROUP BY Invoice.BillingCountry, Customer.CustomerId, Customer
)
SELECT Country, Customer, Expenditure
FROM Top_Customers_by_Country
WHERE Rnk = 1
ORDER BY Country, Customer;
```

Country	Customer	Expenditure
Argentina	Diego GutiÃ©rrez	39.60
Australia	Mark Taylor	81.18
Austria	Astrid Gruber	69.30
Belgium	Daan Peeters	60.39
Brazil	LuÃ-s GonÃ§alves	108.90
Canada	FranÃ§ois Tremblay	99.99
Chile	Luis Rojas	97.02
Czech Republic	FrantiÅiek WichterlovÃi	144.54
Denmark	Kara Nielsen	37.62
Finland	Terhi HÃ¤mÃ¤lÃ¤inen	79.20
France	Wyatt Girard	99.99

INNOMATICS RESEARCH LABS

THANK YOU

INNOMATICS RESEARCH LABS