K-Pop Market Research Database

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Business Narrative Description

K-Pop Market Research LTD provides innovative analytics and insights on K-Pop music trends and history. Our customers use our reports and analysis to make market decisions in the global K-Pop arena, a blossoming marketplace with an export value of $756.2m in 2019. This sector is expected to see sustained growth in the coming years.

We will create a database of K-Pop artists and their musical works by collecting data points related to artist biography, single and album release dates, sales numbers, chart performance, etc. We have already begun formulating lists of entities, attributes, and relationships. Our company will use this database to perform quantitative analysis and provide our clients with results that they can use to maximize investments in this fast-expanding entertainment industry. As our business grows, we anticipate increasing the size and scope of our database, allowing us to further specialize and diversify our products.

Presently, our small company is poised to become the leading market research firm in this industry. As our market share grows, we anticipate a parallel growth both in the size of our firm as well as the sophistication and capacity of our reports and models. We envision a sustainable pathway to success as a partnership between our senior leadership, technical roles, and the clients whose demands will ultimately shape our future.

Identification of Information Needs

Our report analysts need to be able to access artist information and the markets that they are in. They must be able to correlate sales to the amount of marketing that is occurring in those markets to be able to evaluate the effectiveness of the marketing. Being able to gather competitive sets of sales performance data will enable our analysts to benchmark performance. Tracking target customers will enable market size calculations, driving our recommendations. Our analysts will also need to track when content is released and sales over time to be able to estimate the life span of a particular property and its destined total value.

We will need to establish reliable data sourcing mechanisms to keep our data up to date. We will have to work with data sources in the Korean language and create procedures for handling such data. Additionally, we will need to establish our credibility to continue developing a client list including record labels, digital streaming platforms, concert promoters, producers, investors, music industry journalists, and other parties seeking to participate in the global K-Pop phenomenon.

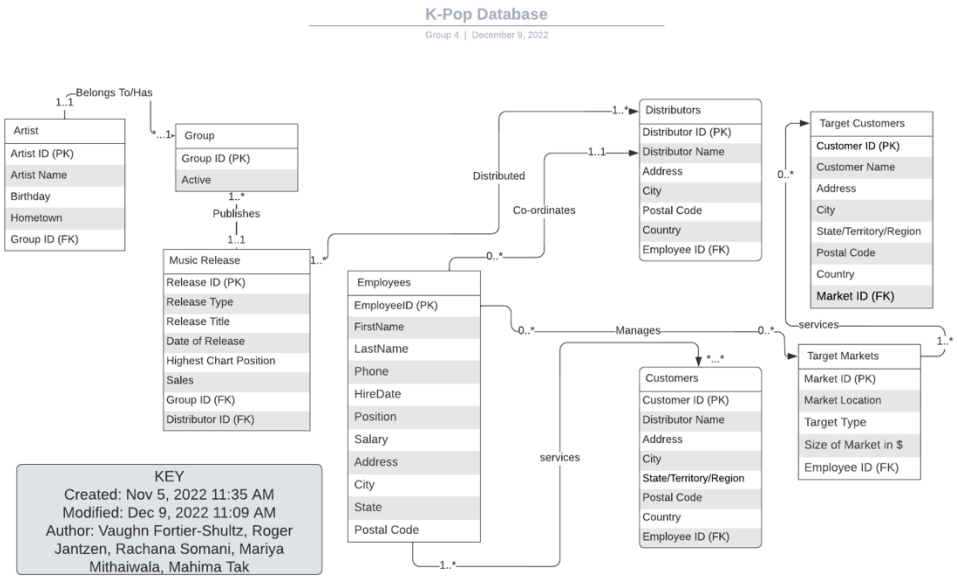
Initial List of Entities (Tables)

Entity (Table Name)
Artist (Individual)
Group (Comprised of Multiple Artists)
Music Releases
Distributors
Customers
Employees
Target Markets
Target Customers

Distribution of Duties

Name	Role	Duties
Mahima Tak	Systems Analyst	Systems testing and analysis, identification and documentation of vulnerabilities, recommendations for improvement and sustainability
Rachana Somani	Database Administrator	Ensure that data analysts and other users can easily use the database to find the information they need
Mariya Mithaiwala	Documentation Writer	Provide accountability by documenting processes and tracking developments across phases
Roger Jantzen	Logical & Conceptual Model Designer	Create diagrams, plan relational configuration, map related entities, avoid fan and chasm traps
Vaughn Fortier Shultz	Application Developer	Design, create, deploy, and maintain applications, forms, and reports for database users

System Analysis



Logical and Physical Modeling

Table of Normalized Relations

ARTIST (Artist ID (PK), Name, Birthday, Hometown, Group ID (FK))

Checklist of Criteria for Normalized Forms

Normal Form	Criteria	Resolved?
UNF	A table containing one or more repeating groups	☑
1NF	A relation in which each row and column intersection contains exactly one value	☑
2NF	A 1NF relation with every non-primary-key attribute fully functionally dependent on the primary key	☑
3NF	A 2NF relation with no non-primary-key attribute transitively dependent on the primary key	☑
BCNF	If B is a primary-key attribute and A is not a candidate key, BCNF insists that for a functional dependency A ® B, A must be a candidate key.	N/A
4NF	A relation is in 4NF if and only if for every nontrivial multivalued dependency A —>> B, A is a candidate key of the relation.	N/A
5NF	No relations may contain a nontrivial join dependency (JD) without the associated projection including a candidate key of the original relation	N/A

Table of Normalized Relations

GROUP (Group ID (PK), Name, Active)

Checklist of Criteria for Normalized Forms

Normal Form	Criteria	Resolved?
UNF	A table containing one or more repeating groups	☑
1NF	A relation in which each row and column intersection contains exactly one value	☑
2NF	A 1NF relation with every non-primary-key attribute fully functionally dependent on the primary key	☑
3NF	A 2NF relation with no non-primary-key attribute transitively dependent on the primary key	☑
BCNF	If B is a primary-key attribute and A is not a candidate key, BCNF insists that for a functional dependency A ® B, A must be a candidate key.	N/A
4NF	A relation is in 4NF if and only if for every nontrivial multivalued dependency A —>> B, A is a candidate key of the relation.	N/A
5NF	No relations may contain a nontrivial join dependency (JD) without the associated projection including a candidate key of the original relation	N/A

Table of Normalized Relations

MUSIC RELEASE (Release ID (PK), Type, Title, Release Date, Runtime, Highest Chart Position, Current Chart Position, Sales, Group ID (FK), Distributor ID (FK))

Checklist of Criteria for Normalized Forms

Normal Form	Criteria	Resolved?
UNF	A table containing one or more repeating groups	☑
1NF	A relation in which each row and column intersection contains exactly one value	☑
2NF	A 1NF relation with every non-primary-key attribute fully functionally dependent on the primary key	☑
3NF	A 2NF relation with no non-primary-key attribute transitively dependent on the primary key	☑
BCNF	If B is a primary-key attribute and A is not a candidate key, BCNF insists that for a functional dependency A ® B, A must be a candidate key.	☑
4NF	A relation is in 4NF if and only if for every nontrivial multivalued dependency A —>> B, A is a candidate key of the relation.	☑
5NF	No relations may contain a nontrivial join dependency (JD) without the associated projection including a candidate key of the original relation	☑

Table of Normalized Relations

DISTRIBUTORS (Distributor ID (PK), Distributor Name, Address, City, State/Territory/Region, Postal Code, Employee ID (FK)

Checklist of Criteria for Normalized Forms

Normal Form	Criteria	Resolved?
UNF	A table containing one or more repeating groups	☑
1NF	A relation in which each row and column intersection contains exactly one value	☑
2NF	A 1NF relation with every non-primary-key attribute fully functionally dependent on the primary key	☑
3NF	A 2NF relation with no non-primary-key attribute transitively dependent on the primary key	☑
BCNF	If B is a primary-key attribute and A is not a candidate key, BCNF insists that for a functional dependency A ® B, A must be a candidate key.	N/A
4NF	A relation is in 4NF if and only if for every nontrivial multivalued dependency A —>> B, A is a candidate key of the relation.	N/A
5NF	No relations may contain a nontrivial join dependency (JD) without the associated projection including a candidate key of the original relation	N/A

Table of Normalized Relations

CUSTOMERS (Customer ID (PK), Customer Name, Address, City, State/Territory/Region, Postal Code, Employee ID (FK))

Checklist of Criteria for Normalized Forms

Normal Form	Criteria	Resolved?
UNF	A table containing one or more repeating groups	☑
1NF	A relation in which each row and column intersection contains exactly one value	☑
2NF	A 1NF relation with every non-primary-key attribute fully functionally dependent on the primary key	☑
3NF	A 2NF relation with no non-primary-key attribute transitively dependent on the primary key	☑
BCNF	If B is a primary-key attribute and A is not a candidate key, BCNF insists that for a functional dependency A ® B, A must be a candidate key.	N/A
4NF	A relation is in 4NF if and only if for every nontrivial multivalued dependency A —>> B, A is a candidate key of the relation.	N/A
5NF	No relations may contain a nontrivial join dependency (JD) without the associated projection including a candidate key of the original relation	N/A

Table of Normalized Relations

TARGET MARKETS (Market ID (PK), Market Location, Target Type, Market Size, Employee ID (FK))

Checklist of Criteria for Normalized Forms

Normal Form	Criteria	Resolved?
UNF	A table containing one or more repeating groups	☑
1NF	A relation in which each row and column intersection contains exactly one value	☑
2NF	A 1NF relation with every non-primary-key attribute fully functionally dependent on the primary key	☑
3NF	A 2NF relation with no non-primary-key attribute transitively dependent on the primary key	☑
BCNF	If B is a primary-key attribute and A is not a candidate key, BCNF insists that for a functional dependency A ® B, A must be a candidate key.	☑
4NF	A relation is in 4NF if and only if for every nontrivial multivalued dependency A —>> B, A is a candidate key of the relation.	☑
5NF	No relations may contain a nontrivial join dependency (JD) without the associated projection including a candidate key of the original relation	☑

Table of Normalized Relations

TARGET CUSTOMERS (Customer ID (PK), Customer Name, Customer Type, Address, City, State/Territory/Region, Postal Code, Market ID (FK))

Checklist of Criteria for Normalized Forms

Normal Form	Criteria	Resolved?
UNF	A table containing one or more repeating groups	☑
1NF	A relation in which each row and column intersection contains exactly one value	☑
2NF	A 1NF relation with every non-primary-key attribute fully functionally dependent on the primary key	☑
3NF	A 2NF relation with no non-primary-key attribute transitively dependent on the primary key	☑
BCNF	If B is a primary-key attribute and A is not a candidate key, BCNF insists that for a functional dependency A ® B, A must be a candidate key.	N/A
4NF	A relation is in 4NF if and only if for every nontrivial multivalued dependency A —>> B, A is a candidate key of the relation.	N/A
5NF	No relations may contain a nontrivial join dependency (JD) without the associated projection including a candidate key of the original relation	N/A

Table of Normalized Relations

EMPLOYEES (Employee ID (PK), Name, Salary, Hiring Date, Address, City, State/Territory/Region, Postal Code, HireDate)

Checklist of Criteria for Normalized Forms

Normal Form	Criteria	Resolved?
UNF	A table containing one or more repeating groups	☑
1NF	A relation in which each row and column intersection contains exactly one value	☑
2NF	A 1NF relation with every non-primary-key attribute fully functionally dependent on the primary key	☑
3NF	A 2NF relation with no non-primary-key attribute transitively dependent on the primary key	☑
BCNF	If B is a primary-key attribute and A is not a candidate key, BCNF insists that for a functional dependency A ® B, A must be a candidate key.	N/A
4NF	A relation is in 4NF if and only if for every nontrivial multivalued dependency A —>> B, A is a candidate key of the relation.	N/A
5NF	No relations may contain a nontrivial join dependency (JD) without the associated projection including a candidate key of the original relation	N/A

SQL DDL: Table Creation

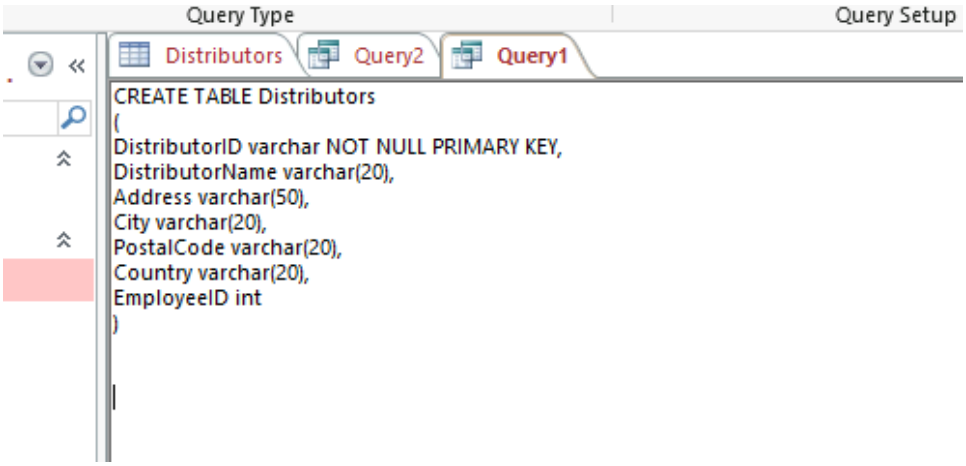
Creating the table Distributors with the help of QUERY1 and inserting values in the table can be done by using either Query 2, 3 or 4.

TABLE Distributors

QUERY1:

CREATE TABLE Distributors

(DistributorID varchar NOT NULL PRIMARY KEY,DistributorName varchar(20),Address varchar(50),City varchar(20),PostalCode varchar(20),Country varchar(20),EmployeeID int)

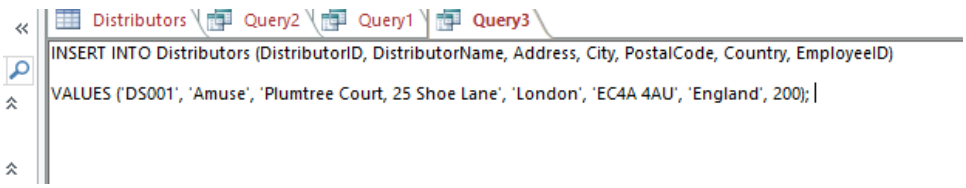


Insertion of the single rows can be done either by mentioning the column names (Query2) or by just mentioning the name of the table (as shown in Query3)

QUERY2:

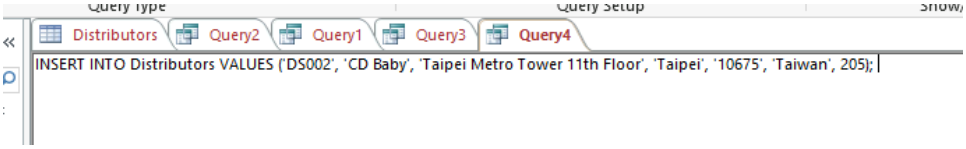
INSERT INTO Distributors (DistributorID, DistributorName, Address, City, PostalCode, Country, EmployeeID)

VALUES ('DS001', 'Amuse', 'Plumtree Court, 25 Shoe Lane', 'London', 'EC4A 4AU', 'England', 200);

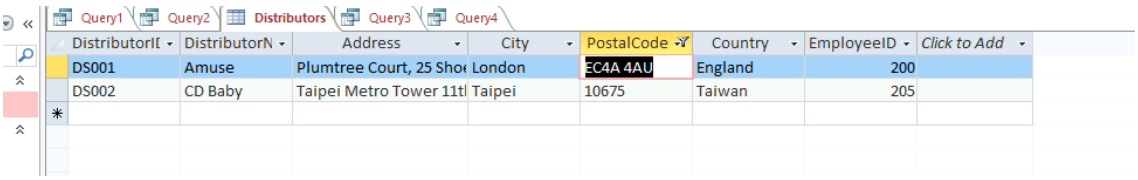


QUERY3:

INSERT INTO Distributors VALUES ('DS002', 'CD Baby', 'Taipei Metro Tower 11th Floor', 'Taipei', '10675', 'Taiwan', 205);



Outcome:



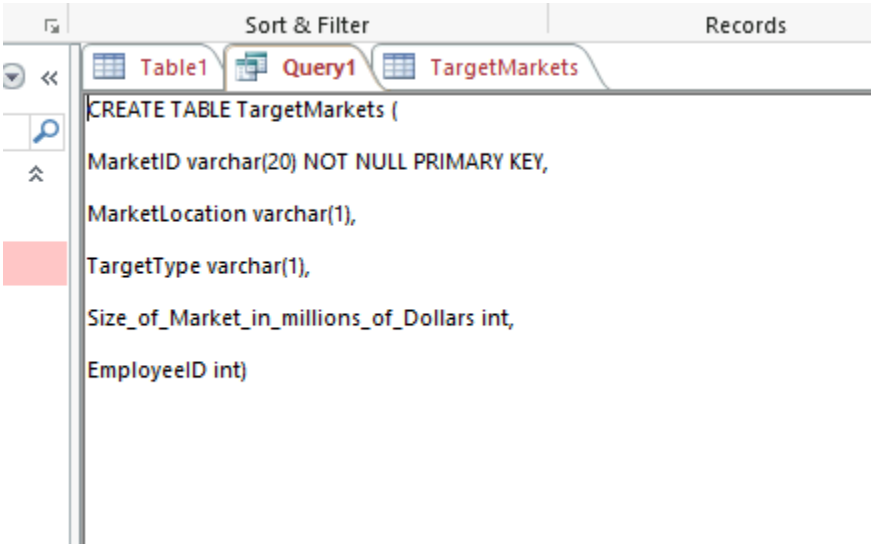
QUERY4: (Multiple Row Insertion queries only work on Access 2008 and above versions)

```
INSERT INTO Distributors (DistributorID, DistributorName, Address, City, PostalCode, Country, EmployeeID) VALUES

('DS003', 'DistroKid', '951A Appasaheb Marathe Marg', 'Mumbai', '400 025', 'India', 101),

('DS004', 'Fresh Tunes', 'Shanghai Pudong New Area Century Avenue Securities Trading Outlet', 'Shangai', '200120', 'China', 102),

('DS005', 'Horus Music', '21st Floor HeungKuk Life Insurance Building', 'Seoul', '3184', 'Korea', 114),

('DS006', 'LANDR', '71 South Wacker Drive', 'Chicago', '60606', 'USA', 115),

('DS007', 'Mondo Tunes', 'Roppongi Hills Mori Tower', 'London', 106 6147, 'Japan', 116),

('DS008', 'OneRPM', 'Avenida Prado Sur 250, Piso 1', 'Cuidad de Mexico', 11000', 'Mexico', 117),

('DS009', 'RouteNote', '900 West Street', 'New York', 'EC4A 4AU', 'USA', 118),

('DS010', 'Soundrop', '140 West Street', 'Sandton ', '2196', 'South Africa', 119),

('DS011', 'Tunecore', '121 Worcester Rd', 'South Lobby', '39393', 'Singapore ', 120),

('DS012', 'Symphonic', '337 Russell St', 'Rome', '00151', 'Italy', 121),

('DS013', 'Triple  '337 Russell St', 'Quito', '170208', 'Ecuador', 122),

('DS014', 'Label Worx', '295 Plymouth Street', 'Astana', '010000', 'Kazakhstan', 123);
```

TABLE Target MARKETS:

QUERY1:

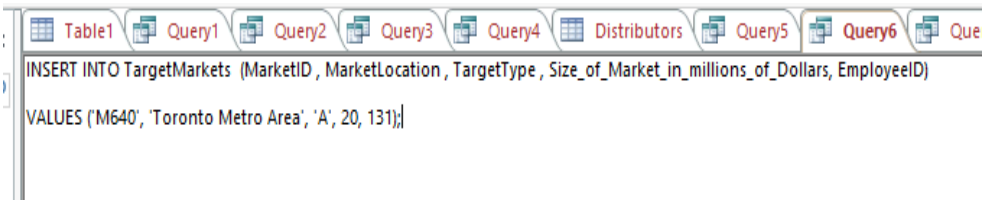
```
CREATE TABLE TargetMarkets (
MarketID varchar(20) NOT NULL PRIMARY KEY,
MarketLocation varchar(1),
TargetType varchar(1),
Size_of_Market_in_millions_of_Dollars int,
EmployeeID int)
```

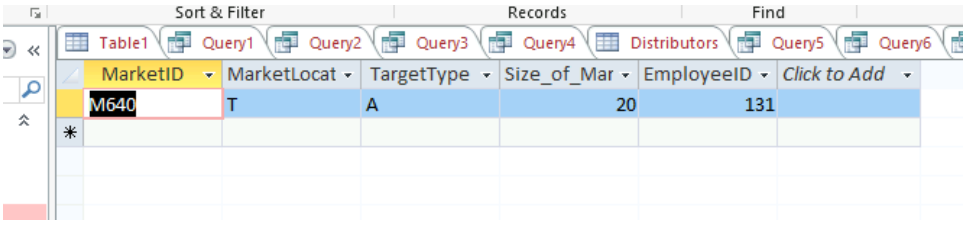


QUERY2:

INSERT INTO TargetMarkets (MarketID , MarketLocation , TargetType , Size_of_Market_in_millions_of_Dollars, EmployeeID)

VALUES ('M640', 'Toronto Metro Area', 'A', 20, 131);

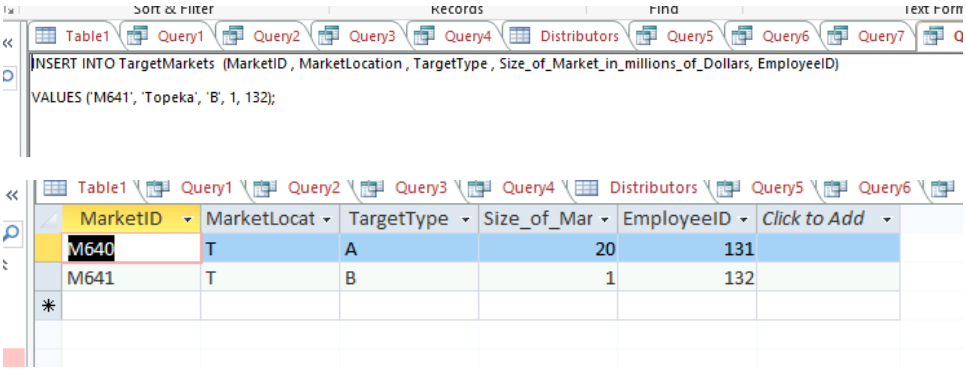




QUERY2:

INSERT INTO TargetMarkets (MarketID , MarketLocation , TargetType , Size_of_Market_in_millions_of_Dollars, EmployeeID)

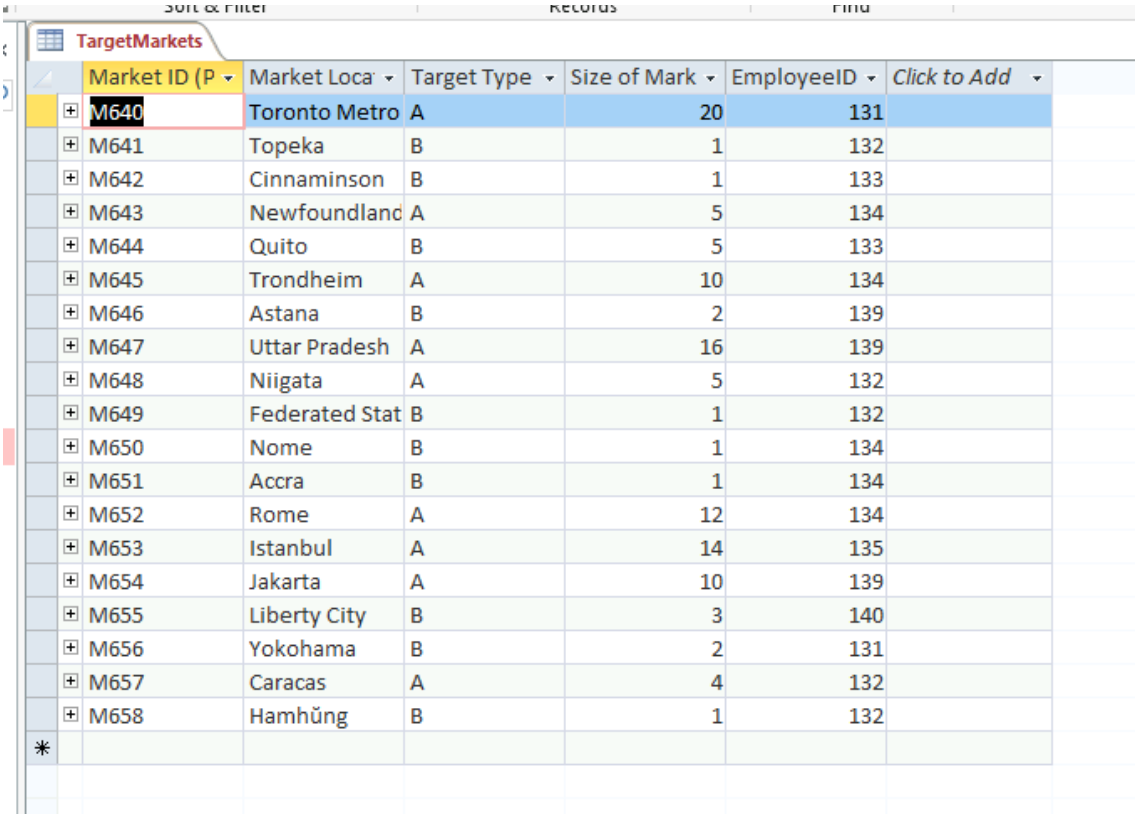
VALUES ('M641', 'Topeka', 'B', 1, 132);



QUERY 19: **(Multiple Row Insertion queries only work on Access 2008 and above versions)**

```
INSERT INTO Target Markets VALUES
('M640', 'Toronto Metro Area', 'A', 20, 131),
('M641', 'Topeka', 'B', 1, 132),
('M642', 'Cinnaminson', 'B', 1, 133),
('M643', 'Newfoundland and Labrador', 'A', 5, 134),
('M644', 'Quito', 'B', 5, 133),
('M645', 'Trondheim', 'A', 10, 134),
('M646', 'Astana', 'B', 2, 139),
('M647', 'Uttar Pradesh', 'A', 16, 139) ,
('M648', 'Niigata', 'A', 5, 132),
('M649', 'Federated States of Micronesia', 'B', 1, 132),
('M650', 'Nome', 'B', 1, 134),
('M651', 'Accra', 'B', 1, 134),
('M652', 'Rome', 'A', 12, 134),
('M653', 'Istanbul', ''A', 14, 135),
('M654', 'Jakarta', 'A', 10, 139),
('M655', 'Liberty City', 'B', 3, 140),
('M656', 'Yokohama', 'B', 2, 131),
('M657', 'Caracas', 'A', 4, 132),
('M658', 'Hamhŭng', 'B', 1, 133);
```

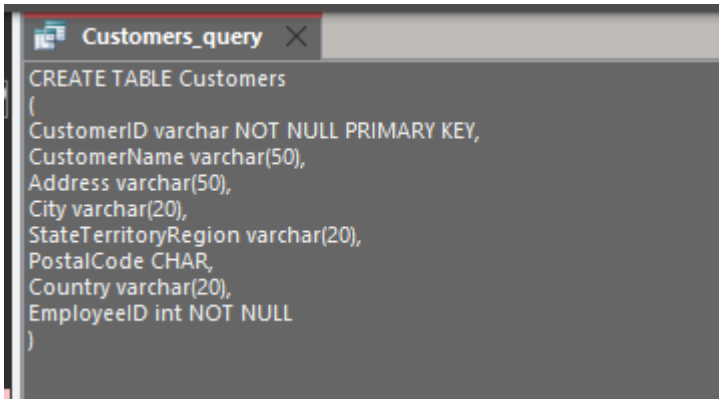
Screenshot of TargetMarkets after the above Sequel Codes:



TargetMarkets

Market ID (P	Market Loca	Target Type	Size of Mark	EmployeeID	Click to Add
M640	Toronto Metro	A	20	131	
M641	Topeka	B	1	132	
M642	Cinnaminson	B	1	133	
M643	Newfoundland	A	5	134	
M644	Quito	B	5	133	
M645	Trondheim	A	10	134	
M646	Astana	B	2	139	
M647	Uttar Pradesh	A	16	139	
M648	Niigata	A	5	132	
M649	Federated Stat	B	1	132	
M650	Nome	B	1	134	
M651	Accra	B	1	134	
M652	Rome	A	12	134	
M653	Istanbul	A	14	135	
M654	Jakarta	A	10	139	
M655	Liberty City	B	3	140	
M656	Yokohama	B	2	131	
M657	Caracas	A	4	132	
M658	Hamhŭng	B	1	132	

Creating the Customers table with the help of Customers_query:



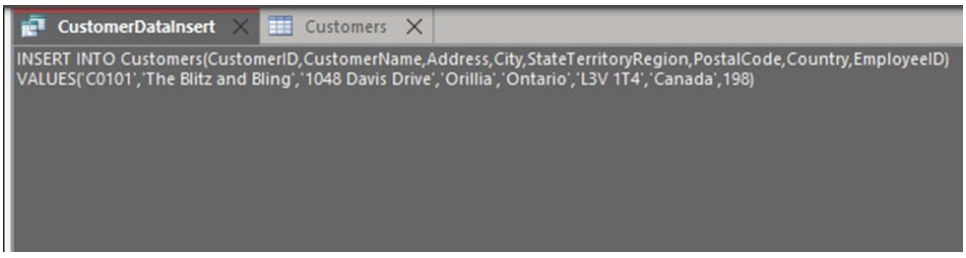
Now after creating the table, putting rows with the help of two different methods:

Method 1- "INSERT INTO"-> "VALUES"

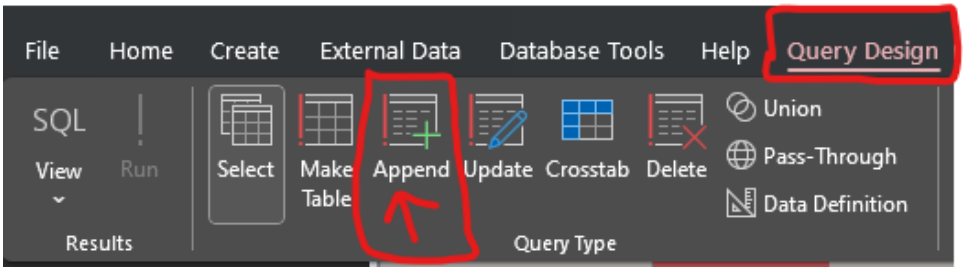
Method 2- With the help of **Append** method

Here are the screenshots for both the methods:

Method 1-

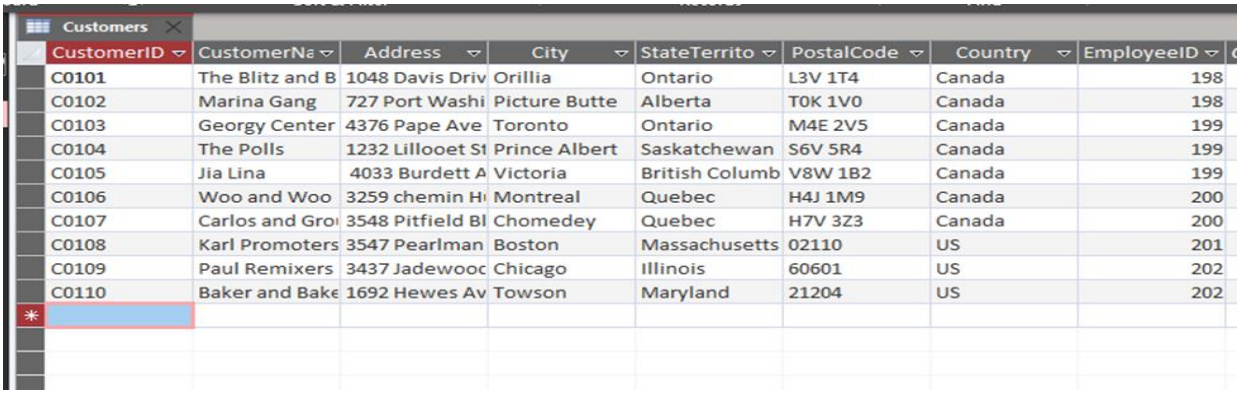


Method 2-



After running this "Append method" the Customers table with rows is as below:

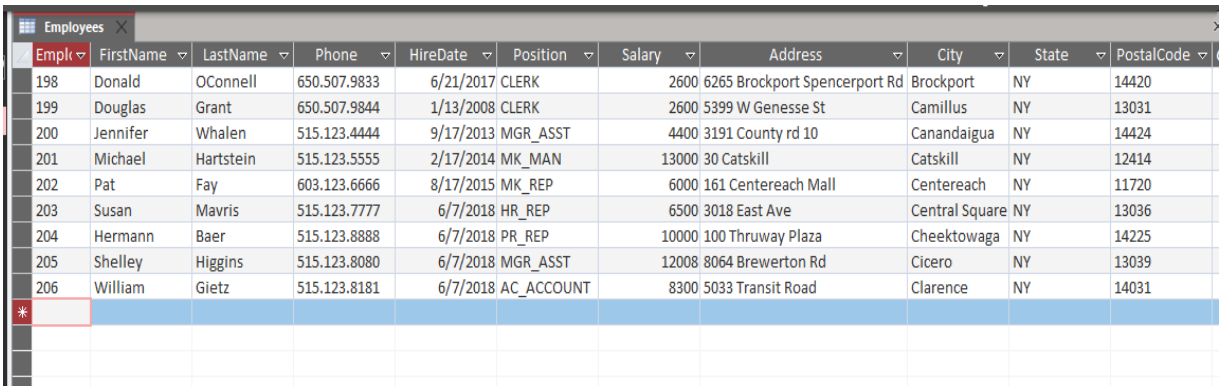
Table- Customers:



Customers

CustomerID	CustomerNa	Address	City	StateTerrito	PostalCode	Country	EmployeeID
C0101	The Blitz and B	1048 Davis Driv	Orillia	Ontario	L3V 1T4	Canada	198
C0102	Marina Gang	727 Port Washi	Picture Butte	Alberta	T0K 1V0	Canada	198
C0103	Georgy Center	4376 Pape Ave	Toronto	Ontario	M4E 2V5	Canada	199
C0104	The Polls	1232 Lillooet St	Prince Albert	Saskatchewan	S6V 5R4	Canada	199
C0105	Jia Lina	4033 Burdett A	Victoria	British Columb	V8W 1B2	Canada	199
C0106	Woo and Woo	3259 chemin H	Montreal	Quebec	H4J 1M9	Canada	200
C0107	Carlos and Gro	3548 Pitfield Bl	Chomedey	Quebec	H7V 3Z3	Canada	200
C0108	Karl Promoters	3547 Pearlman	Boston	Massachusetts	02110	US	201
C0109	Paul Remixers	3437 Jadewooc	Chicago	Illinois	60601	US	202
C0110	Baker and Bake	1692 Hewes Av	Towson	Maryland	21204	US	202

Table-Employees: (With the help of method 1 and method 2 Employees table is also created)

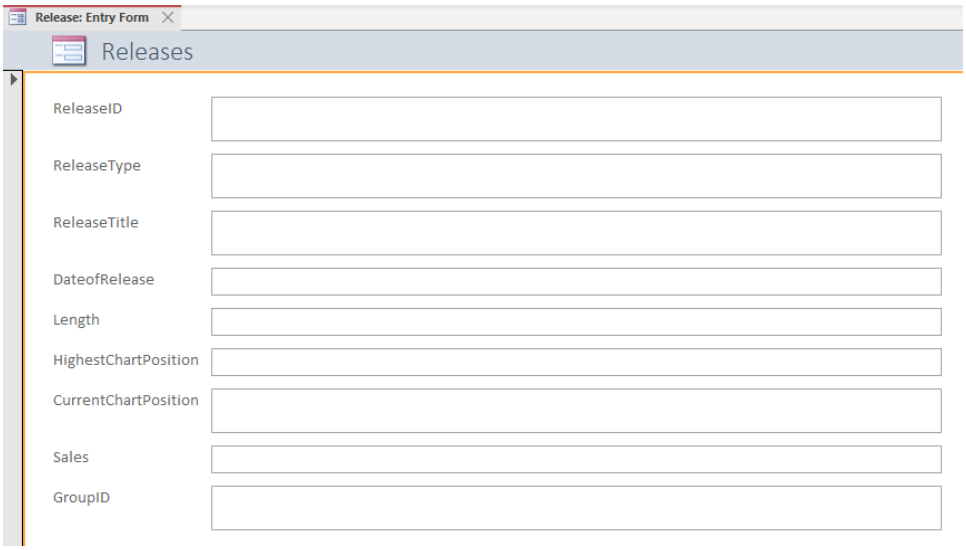


Employees

Empl	FirstName	LastName	Phone	HireDate	Position	Salary	Address	City	State	PostalCode
198	Donald	OConnell	650.507.9833	6/21/2017	CLERK	2600	6265 Brockport Spencerport Rd	Brockport	NY	14420
199	Douglas	Grant	650.507.9844	1/13/2008	CLERK	2600	5399 W Genesse St	Camillus	NY	13031
200	Jennifer	Whalen	515.123.4444	9/17/2013	MGR_ASST	4400	3191 County rd 10	Canandaigua	NY	14424
201	Michael	Hartstein	515.123.5555	2/17/2014	MK_MAN	13000	30 Catskill	Catskill	NY	12414
202	Pat	Fay	603.123.6666	8/17/2015	MK_REP	6000	161 Centereach Mall	Centereach	NY	11720
203	Susan	Mavris	515.123.7777	6/7/2018	HR_REP	6500	3018 East Ave	Central Square	NY	13036
204	Hermann	Baer	515.123.8888	6/7/2018	PR_REP	10000	100 Thruway Plaza	Cheektowaga	NY	14225
205	Shelley	Higgins	515.123.8080	6/7/2018	MGR_ASST	12008	8064 Brewerton Rd	Cicero	NY	13039
206	William	Gietz	515.123.8181	6/7/2018	AC_ACCOUNT	8300	5033 Transit Road	Clarence	NY	14031

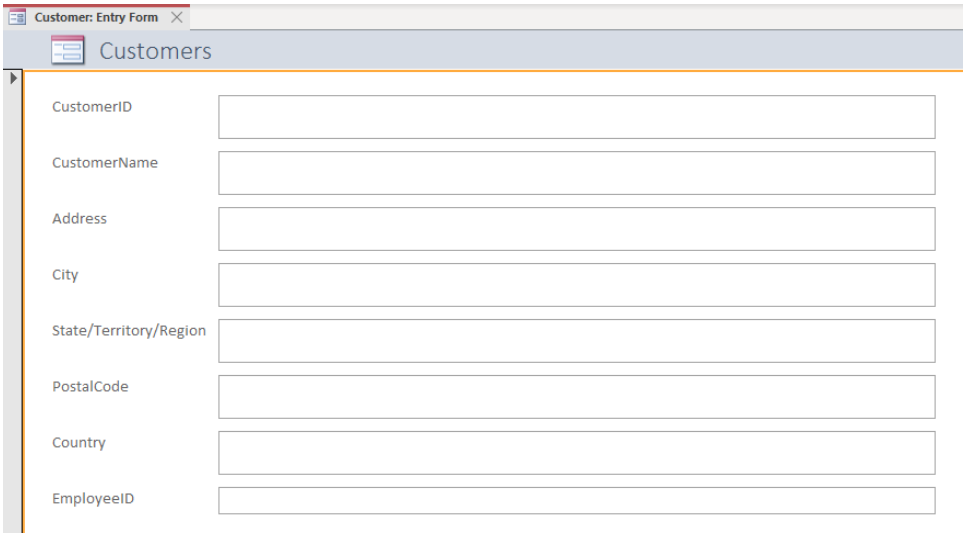
Access Forms, Reports, and Queries

Form 1: Add new music releases to the database



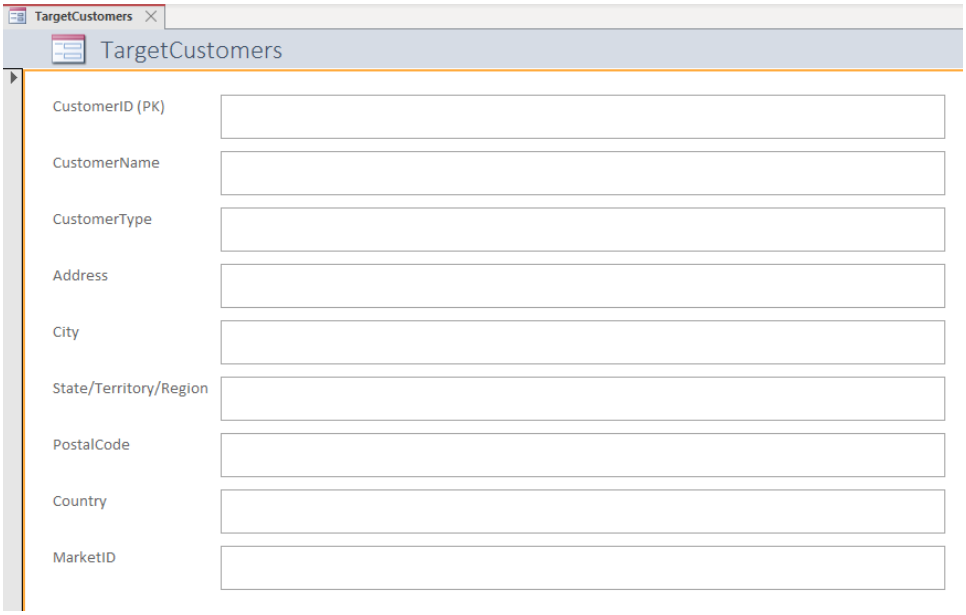
This form is used when a K-Pop group releases a new single, EP, or album. We use it for the data entry process as we continuously seek to keep our database up-to-date and complete.

Form 2: Add new customers to the database



As a growing company, we often enter into business relationships with new customers. Each customer is assigned to one of our account specialist employees who ensures that they receive the utmost care and consideration. This form provides a quick way to add those customers to our database.

Form 3: Add new target customers to the database



We are always looking for new opportunities to expand our global reach. This form makes it convenient to add new Target Customers to our database, allowing the sales team access to the information necessary to forge new connections and increase our market share.

Report 1: Currently Charting Releases in Ascending Order

All Currently Charting Releases (Ascending Order)

Releases

Friday, December 9, 2022
2:59:08 PM

GroupName	ReleaseTitle	ReleaseType	DateofRelease	Length	CurrentChartPosition	Sales
ATEEZ	Hard to Forget Ya	Single	9/25/2018	0:50:54	1	15,445,000
MAMAMOO	Body Ache	Single	6/25/2018	0:04:24	10	416,546
STRAYKIDS	Chillin' with You	Album	2/25/2018	0:06:13	11	544,545
2NE1	E-Mail My Heart	Album	10/20/2020	1:01:02	12	4,645,480
BTS	Do U No	Single	5/15/2021	0:02:40	13	688,923
SCHSKIES	Seal It With a Kiss	Single	2/16/2020	0:29:49	15	415,410
LIM CHNAGJUNG	Invitation	EP	7/7/2018	0:05:59	16	45,465
G.O.D	Toy Soldier	Single	1/12/2019	0:15:12	16	461,141
GIRLS GENERATION	Mannequin	Album	5/8/2005	0:15:15	18	132,560
BTS	Fade Away	Album	5/12/2017	0:44:32	198	1,122,909
SHINHWA	Phonography	Album	5/25/2018	0:11:55	25	156,400
SEVENTEEN	Trouble for Me	Single	10/28/2012	0:05:18	27	165,210
NCT 127	Lace and Leather	Single	11/29/2020	0:26:24	27	45,450
BTS	Riptide	Album	7/25/2022	1:03:09	3	2,316,718
SES	Rock Me In	Single	1/19/2019	0:05:06	35	156,400
GIDLE	Before the Goodbye	Album	8/25/2018	0:02:52	49	559,550
EXO	The Answer	Single	9/19/2021	1:06:04	50	145,490
SHIN SEUNGHUN	Why Should I Be Sad	Album	12/12/2019	0:50:12	55	145,540
BOA	I Run Away	Single	6/25/2018	0:12:12	55	41,541
BTS	Bye Bye 4Ever	Single	9/13/2022	0:03:19	6	590,188
TWICE	What You Need	Single	11/25/2013	0:41:21	60	254,500
TVXQ	Now That I Found You	Album	10/5/2020	0:20:30	90	14,500
BTS	Diva Dreams	Album	10/22/2019	0:56:24	97	1,333,290

This highly valuable report provides us with an immediate snapshot of the currently charting albums and their relative chart position. By sorting in ascending order, we can mimic the format of the published chart lists from which our data is sourced. This report is critical to our business needs because at any moment it is important to know exactly which releases are charting and what positions they are in.

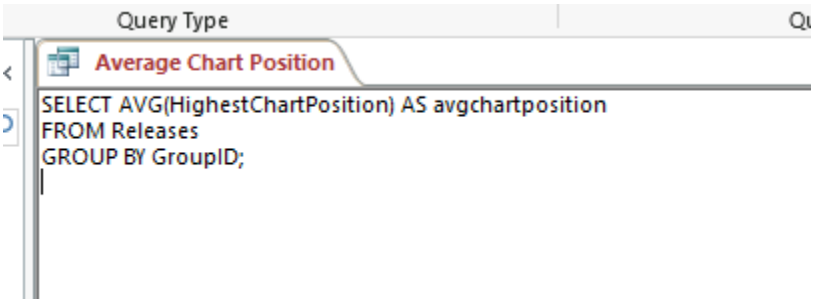
Report 2: Target Customers and Employee Assignments

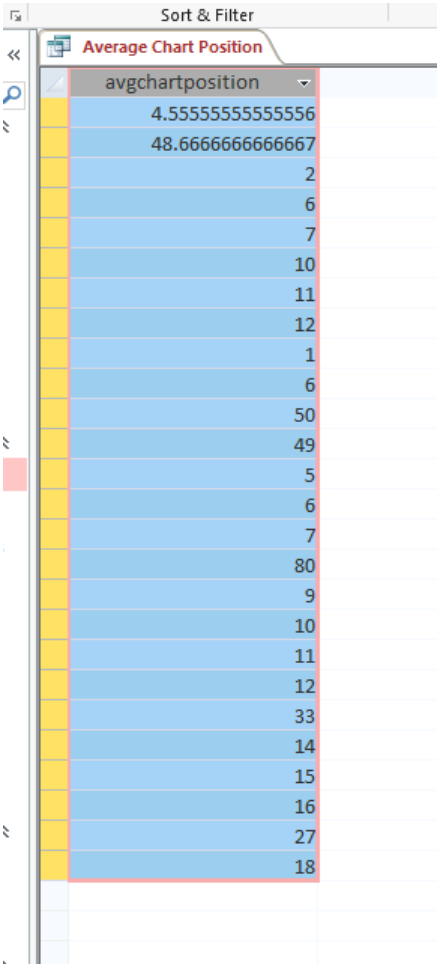
Target Customers and Employee Assignments

CustomerName	CustomerType	MarketLocation	TargetType	FirstName	LastName
Maple Leaf Concert Hall	Venue	Toronto Metro Area	A	James	Marlow
CN Tower Records	Retailer	Toronto Metro Area	A	James	Marlow
Hockey Hitter Cafe	Venue	Toronto Metro Area	A	James	Marlow
Flannel Man's Gator Gutter	Venue	Toronto Metro Area	A	James	Marlow
The Royal Canadienne	Retailer	Toronto Metro Area	A	James	Marlow
Manriko	Venue	Yokohama	B	James	Marlow
Governor's Row House	Venue	Topeka	B	TJ	Olson
Emperor Recordings	Retailer	Topeka	B	TJ	Olson
Sunflower Promotions	Promoter	Topeka	B	TJ	Olson
割烹 大倉屋	Venue	Niigata	A	TJ	Olson
きたえちご米店	Promoter	Niigata	A	TJ	Olson
Sunrise	Venue	Federated States of Micronesia	B	TJ	Olson
La Ventana de Pipa	Promoter	Caracas	A	TJ	Olson
Hamhŭng Concerts & Entertainment	Promoter	Hamhŭng	B	TJ	Olson
Jersey Girl Gardens	Venue	Cinnaminson	B	Jason	Mallin
Riverton Remixers	Promoter	Cinnaminson	B	Jason	Mallin

Our project managers use this report to for information about which target customers have been assigned to members of the sales team. We believe strongly in the skill and professionalism of our salespeople, and the project managers seek to ensure that target customers are distributed evenly, and that more senior salespeople are assigned to the more difficult targets.

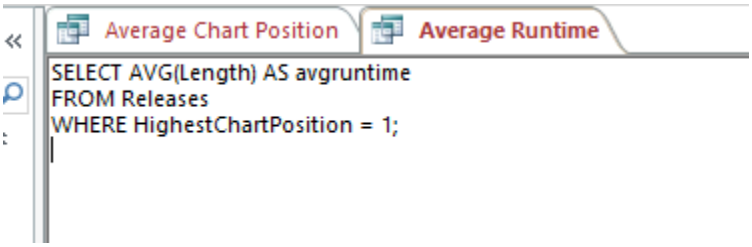
SQL Query 1: AVERAGE CHART POSITION

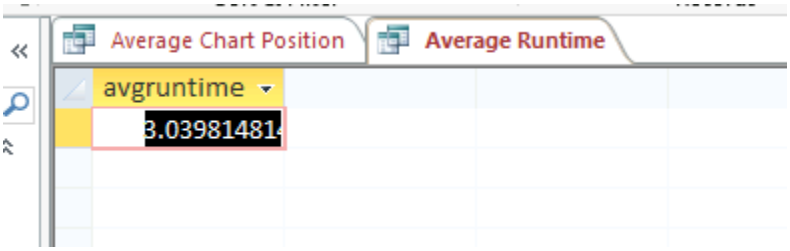




Our managers and their assistants often use this query so that they can keep themselves informed on the average chart position and the trends in the market. This in return will help them identify which artists are doing good, average and not so good.

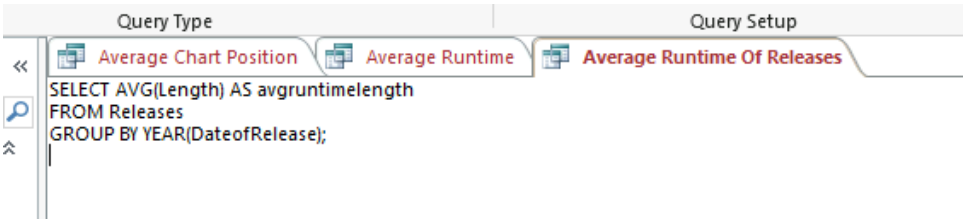
SQL Query 2: AVERGAE RUNTIME

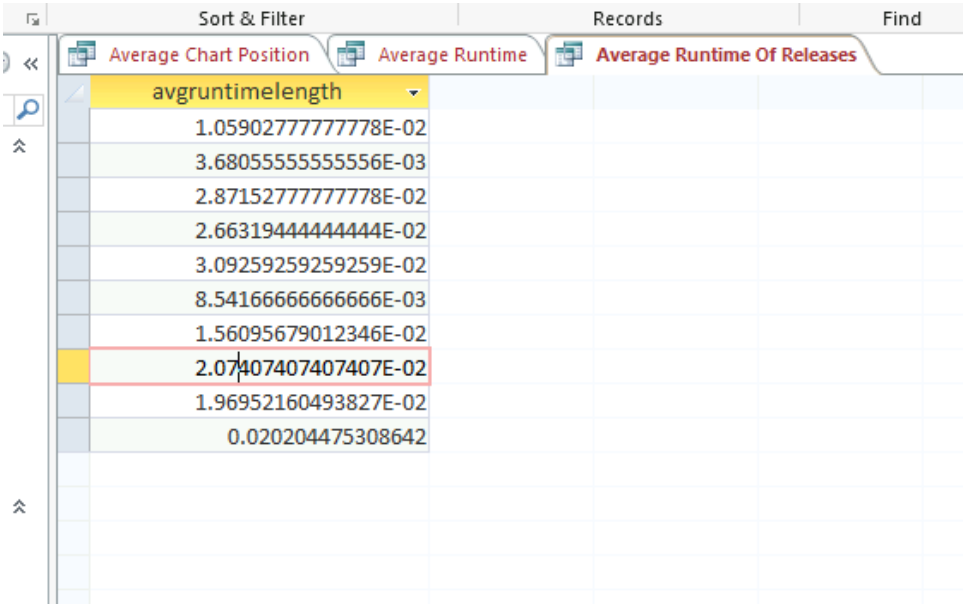




This SQL query finds out the average runtime of a #1-charting release which helps us in analyzing the average length of the releases which are preferred and liked by the market. We at K-pop Research Ltd focus on small details like these so that we don't leave out any factor that affects the releases and the reason for their popularity.

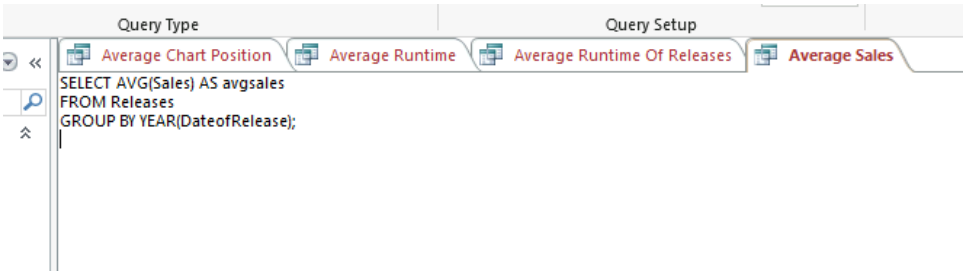
SQL Query 3: AVERAGE RUNTIME OF RELEASE

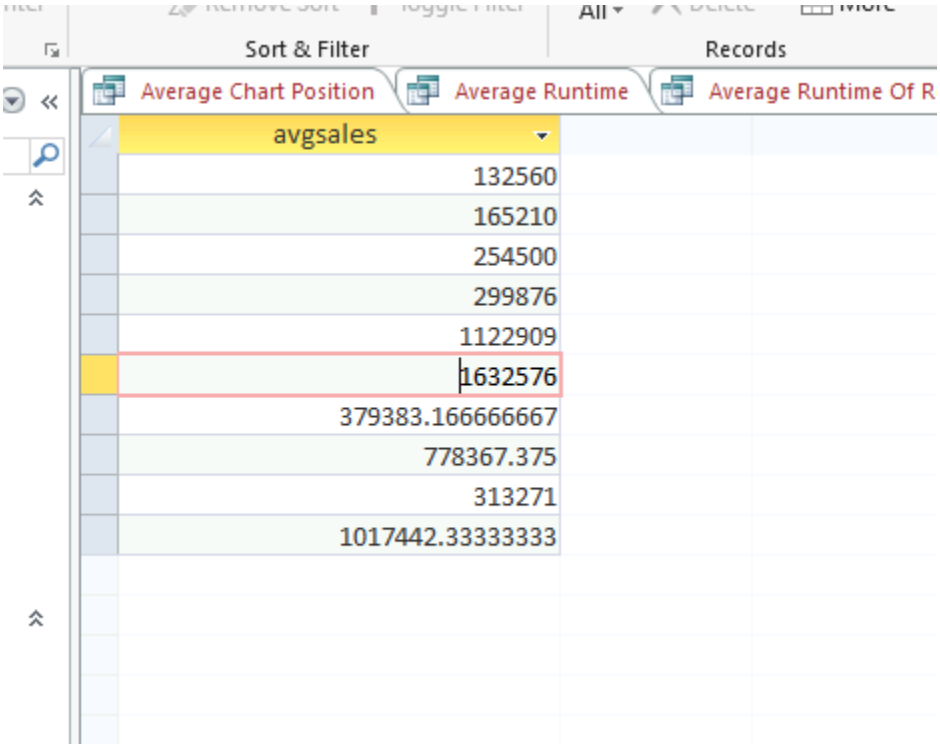




This SQL query finds out the average runtime of all the releases, grouped by the date of its release. This helps us in analyzing the relationship of average length of the releases and their year.

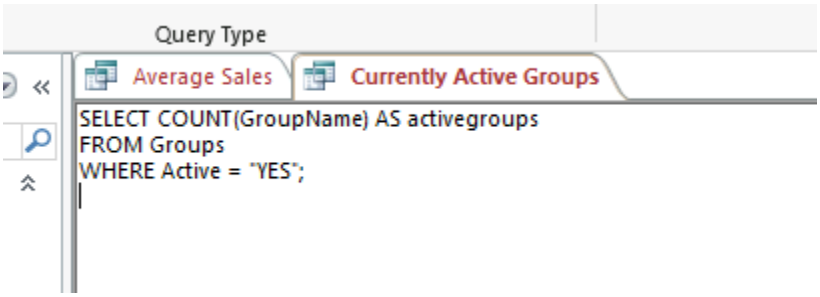
SQL Query 4: AVERAGE SALES

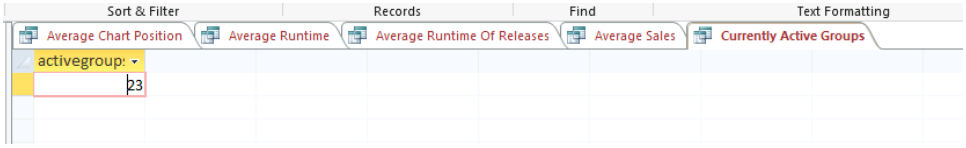




The above SQL query helps us in finding out the average sales of all the releases per year. With this query, we try to find the reason why certain years had high average sales vs low average sales and what external factors were affecting this, to help us predict the sales of the future year as well.

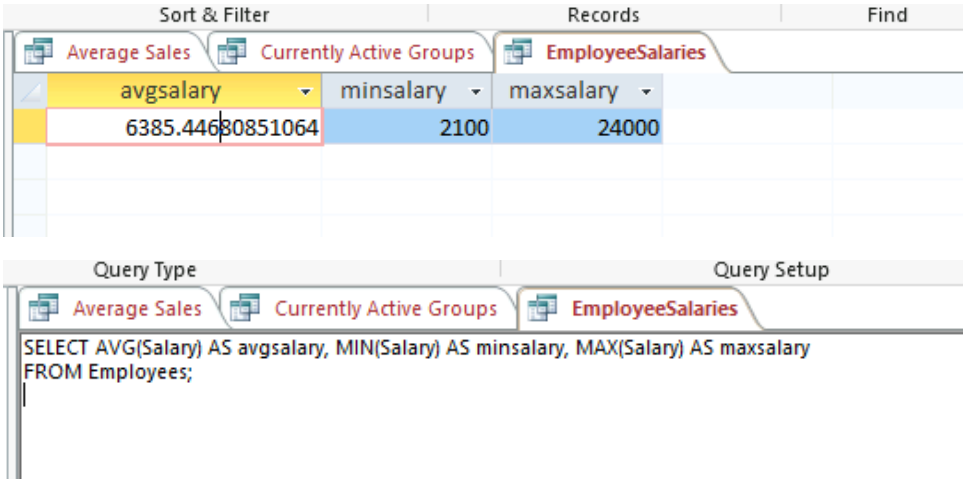
SQL Query 5: AVERAGE ACTIVE GROUPS





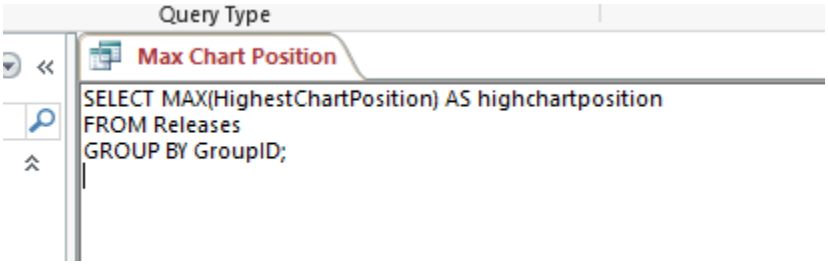
With the help of SQL in Access, we analyze how many of the groups/individuals are currently active. We can further filter these active groups to send updated reports to our customers to help them identify and capture the opportunities accordingly.

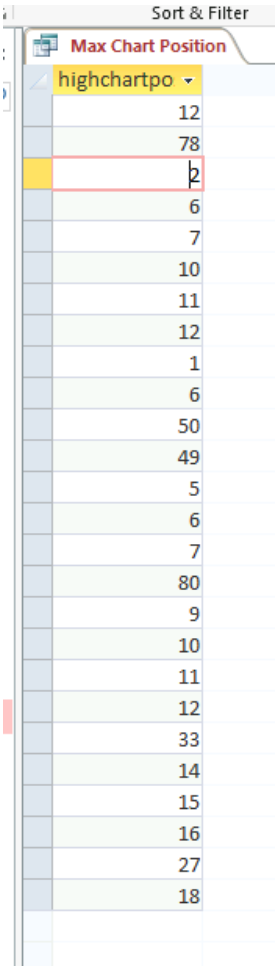
SQL Query 6: EMPLOYEE SALARIES



Employee Salary helps us to foresee and plan our recurring costs for running our company. Along with the average salary, we also find out the minimum and maximum salary given to our employees.

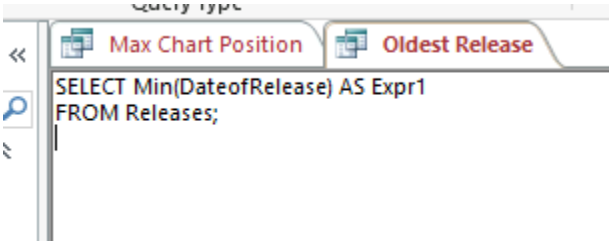
SQL Query 7: MAXIMUM CHART POSITION

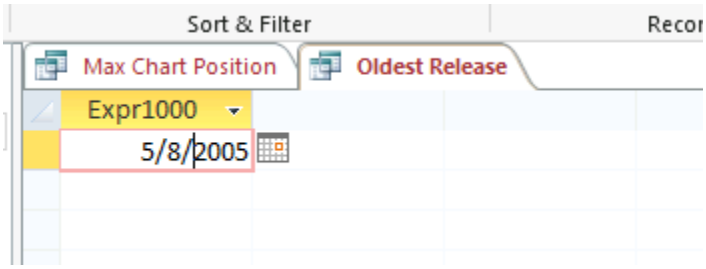




The highest Chart position can be found out with the help of SQL command in Access. This will help us identify what's the highest position a group has received throughout their career.

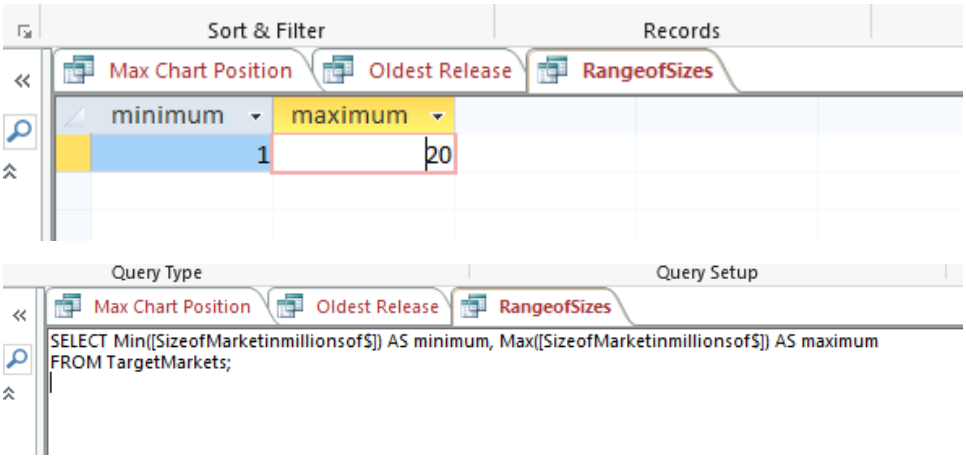
SQL Query 8: OLDEST RELEASE





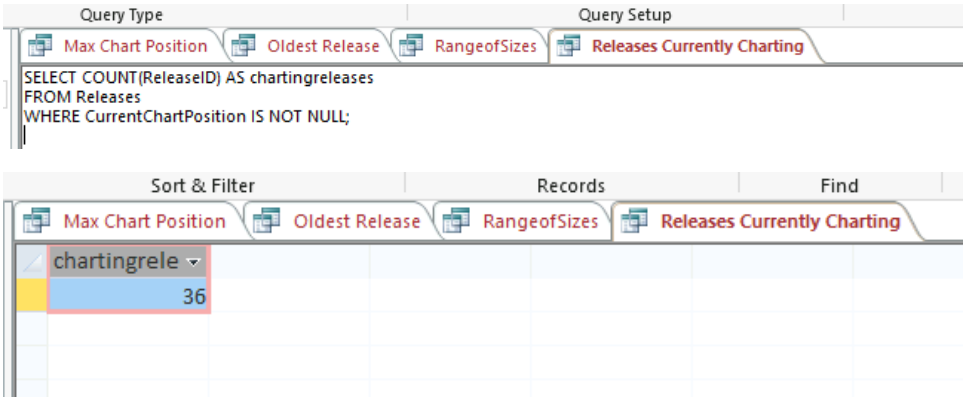
The above query will help us identify the first release and with that information, we can further analyse the response the oldest release received and how that has changed over time.

SQL Query 9: RANGE OF SIZES



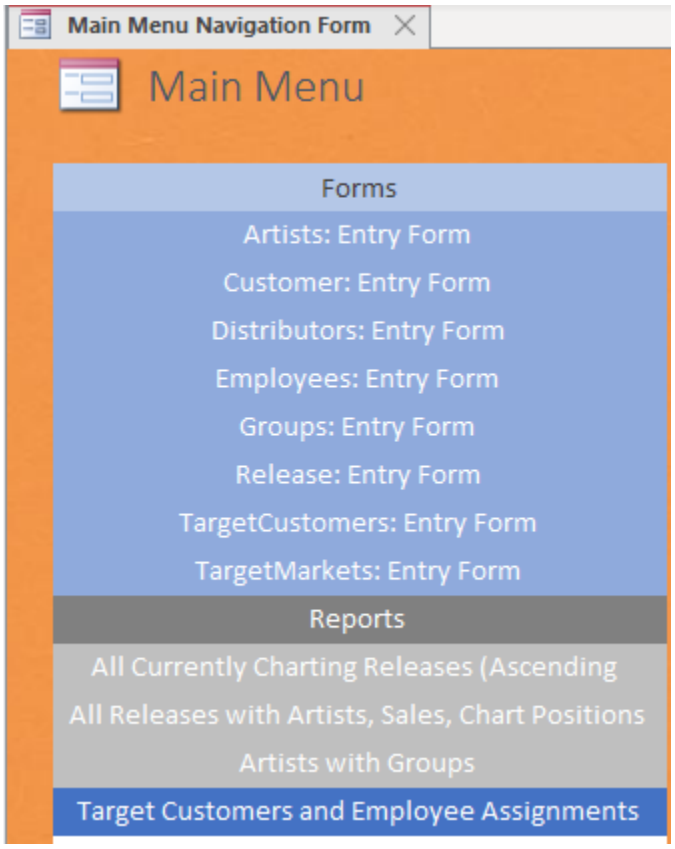
The above query helps us in decision making and shortlisting which target market needs to be catered to first and the opportunities associated with each one of them.

SQL Query 10: RELEASES CURRENTLY CHARTING



Given our company wants to grab the available opportunities at its best and help our clients in decision making, we query the releases which are currently charting so that this information can be passed on to our customers and help them benefit out of it.

Access Navigation Form



Narrative Conclusion

This project pushed our group to think creatively and find workable solutions to a unique business problem. Once we settled on our target business, a consulting firm specializing in market research on the global Korean pop music market, our focus was on exploring what this world would look like, identifying the business's client demographics, and exploring the types of business analytics which would prove valuable to those clients.

Creating our initial list of tables was straightforward: we had a shared understanding of what the database would be used for, and we chose entities and attributes that would be essential for our business to succeed. This stage was highly collaborative as we brainstormed ideas, stress-tested the relationships, and selected the minimum number of attributes necessary to carry out the business's activities. Creating the Entity-Relationship Diagram followed, though we found ourselves returning to the diagram as we proceeded through normalization.

The normalization process was occasionally challenging, but as we proceeded, the tables became more efficient. For example, we had initially envisioned separate tables for "Album Releases" and "Single Releases." These were ultimately combined into one table covering all types of music releases, with a new attribute identifying each release as either a single, EP, or album. Around this time, we also decided to add an "Employees" table to the database, in order to assign employees to customers, target customers, etc. This was a key step for realizing the organizational structure of our business, and allowed us to think through how such a company would actually operate in the real world.

Another difficulty was creating data for our tables. There are not a lot of publicly available datasets containing exactly the types of data we were looking for. We had to perform manual data entry, a process divided amongst the team, in which individual group members worked to populate tables that would come together at the end to form the whole. Some of our data represents actual K-Pop groups and businesses; some of our data was adapted from actual places and businesses; still other data was generated through random processes and other sources. While it seemed daunting at first, we soon found that the data creation was an enjoyable process involving research, exploration, and ingenuity.

When we proceeded to implement our database in Access, we hit another snag: how would each member of the group be able to work independently in the database without the need to reconcile multiple competing versions of the database at the end? This is an area that, looking back, we could have approached differently, coordinating our efforts better to ensure that everyone was working with the same database instance with same tables, relations, and data. Despite some bumps in the road, we found a workflow that allowed each group member to essentially build on the work of the previous group member as we each worked together to make our database complete.

In the end, we have a working database capable of performing exactly the types of operations that our business needs. Indeed, this has the potential to be an actual business concept, satisfying an existing demand for K-Pop market research analysis. While we did not have the resources or capacity to extensively populate the database with entirely genuine data, that would be a goal for an actual business with a dedicated research team and data entry team. There is tremendous potential for growth as each new research inquiry would unlock possibilities for future analysis and reporting.

Group Meeting Logs

Group Meeting Log Sheet #1

Date of Meeting: 10/12/2022 Time of Meeting: 9:30 PM

Group: 4 Recorder: Vaughn Fortier-Shultz

Attending: Vaughn Fortier-Shultz

Roger Jantzen

Mahima Tak

Absent: Mariya Mithaiwala **Excused (circle)?:** YES

Rachana Somari

YES

Topics Discussed: Strategized and planned how to complete the proposal, went over individual assignments and timeline for completion, created material to include in proposal

Tasks Assigned	**Team Member**	**Delivery Date**
Compile proposal materials into a word document	Vaughn	10/13/2022
Review proposal sections and edit for content and clarity	Roger	10/13/2022

Meeting Ending Time: 10:30 PM

Performance Appraisal & Sign-off

Team member name (print)	Signature	Weekly Contribution
Vaughn Fortier-Shultz	_____	_____**%**
Roger Jantzen	_____	_____%
Mahima Tak	_____	_____**%**
Mariya Mithaiwala	_____	_____**%**
Rachana Somari	_____	_____**%**

Group Meeting Log Sheet #2

Date of Meeting: 11/5/2022 Time of Meeting: 2:00 PM

Group: 4 Recorder: Mariya Mithaiwala

Attending: Vaughn Fortier-Shultz

Roger Jantzen

Mahima Tak

Mariya Mithaiwala

Rachana Somari

Absent: **Excused (circle)?: YES / NO**

Topics Discussed: Recap of what is done, implicit assumptions (duplicate data), researching about the entities, having diverse data, target markets, customer types

Tasks Assigned	**Team Member**	**Delivery Date**
Relationships in the Diagram/Relationship sentences	Mariya	11/9
Writing the assumptions	Vaughn	11/10
Input the data	Rachana	Ongoing
Reviewing the relationships	Mahima	11/12
Table creation in SQL	TBD	TBD
Listing the functional dependencies (first pass)	Vaughn	11/8

Meeting Ending Time: 3:00 PM

Performance Appraisal & Sign-off

Team member name (print)	Signature	Weekly Contribution
Vaughn Fortier-Shultz	_____	_____**%**
Roger Jantzen	_____	_____%
Mahima Tak	_____	_____**%**
Mariya Mithaiwala	_____	_____**%**
Rachana Somari	_____	_____**%**

Group Meeting Log Sheet #3

Date of Meeting: 11/29/2022 **Time of Meeting: 9:15 PM**

Group : Group 4: K-Pop Database **Recorder: Mariya Mithaiwala**

Attending: Rachana Somani

Rocky Jantzen

Mariya Mithaiwala

Vaughn Fortier-Shultz

Mahima Tak

Absent: _____ Excused (circle)?: YES / NO

Topics Discussed:

Normalization

Sequel codes to create a table

Forming questions based on the database. Brief overview of the final project and assembling all the contents into the final project.

Discussing the requirements of the project

Tasks Assigned	Team Member	Delivery Date
Enhance the normalization process: One checklist per table	Rocky	12/03/2022
Importing the database in Access	Vaughn	11/30/2022
Making tables through SQL commands	Mariya, Rachana	12/02/2022
Writing queries in SQL	Mahima	

Report and Presentation Planning/Preparation	**TBD**	**TBD**

Meeting Ending Time: 10:00 PM

Performance Appraisal & Sign-off

Team member name (print)	Signature	Weekly Contribution
_____	_____	_____**%**
_____	_____	_____**%**
_____	_____	_____**%**
_____	_____	_____**%**
_____	_____	_____**%**

Group Meeting Log Sheet #4

Date of Meeting: 12/8/2022 **Time of Meeting: 9:30 PM**

Group : Group 4: K-Pop Database **Recorder: Mariya Mithaiwala**

Attending: X Rocky Jantzen

X Mariya Mithaiwala

X Vaughn Fortier-Shultz

X Mahima Tak

Absent: _____Rachana Somani_____ Excused (circle)?: Yes

Topics Discussed: Reviewed the tasks from the prior meeting and checked current status

Mahima Created the SQL queries, in excel, ready for import

Vaughn ran though the current status of the project report

Reviewed new tasks and assigned, reviewed project due dates.

Tasks Assigned	Team Member	Delivery Date
Include in the report, normal form reasoning around why we have certain levels	Rocky	12/10/2022
Mariya to Share SQL code for table	Mariya	12/9/2022
Need to import the queries into excel, Screen Shots For Table Creation section		
Access Navigation Form	Vaughn	12/9/2022
Final Presentation- created an outline, everyone taking a slide		

Meeting Ending Time: 10:00 PM

Performance Appraisal & Sign-off

Team member name (print)	Signature	Weekly Contribution
_____	_____	_____%
_____	_____	_____%
_____	_____	_____%
_____	_____	_____%
_____	_____	_____%