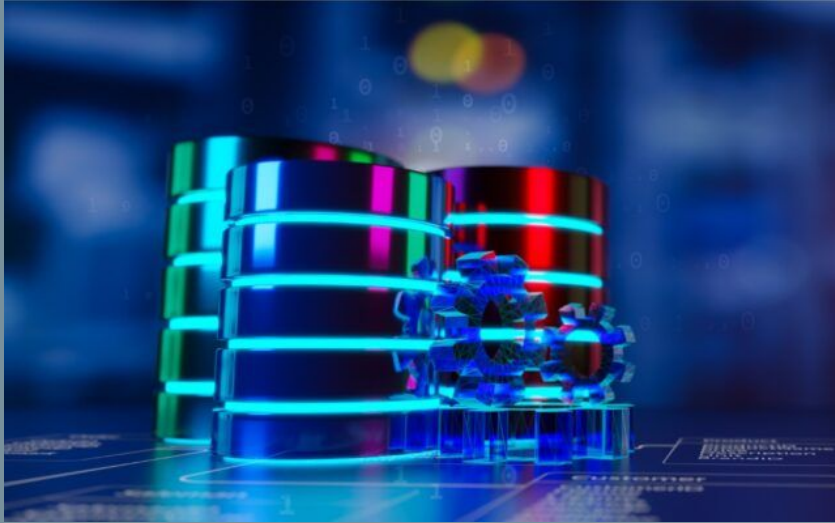


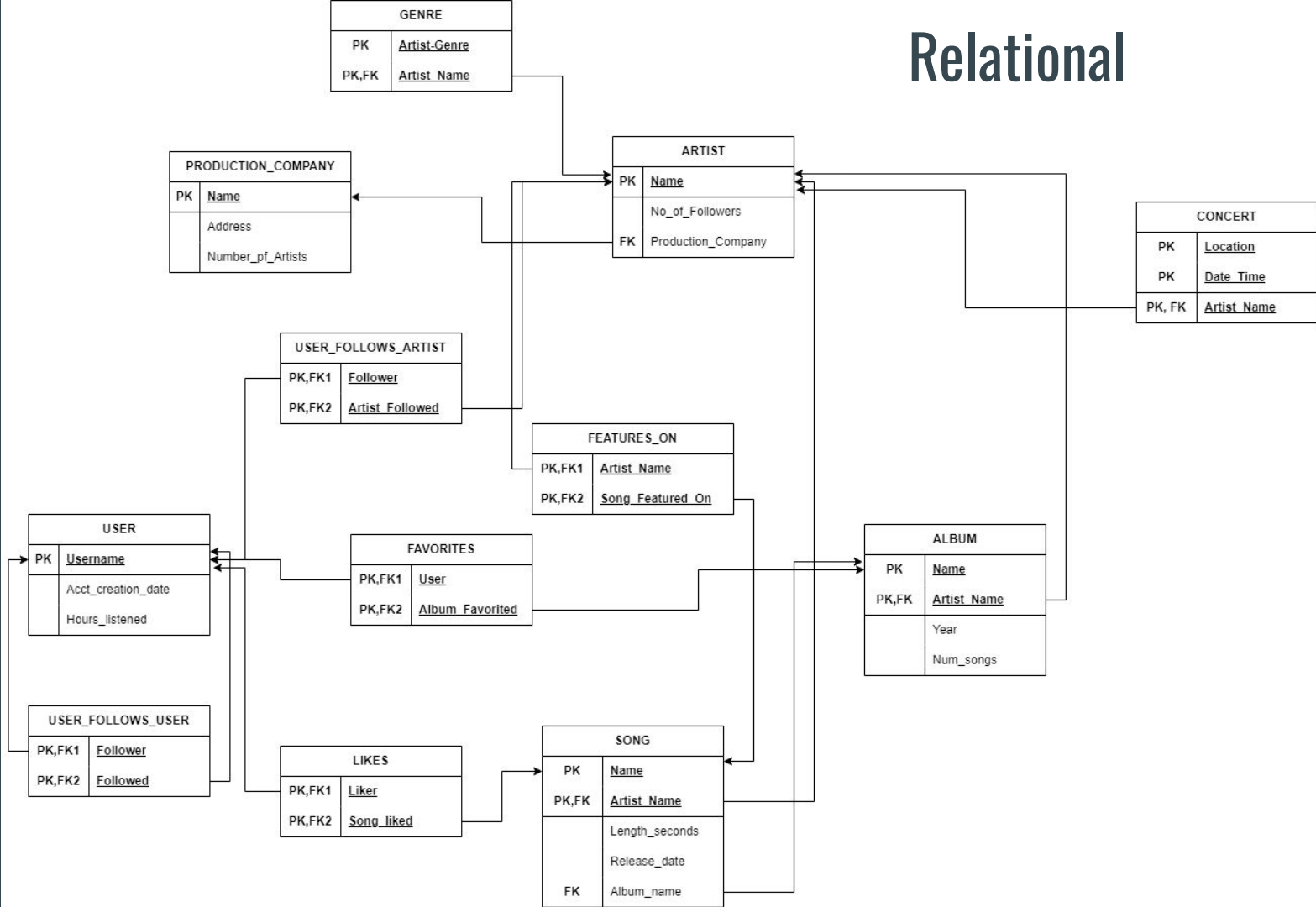
# TOPSIFY - Part 3

## The SQL Implementation



By Zak, Ez, and Ten

# Relational



# Parts 1 & 2: Tables and Data

```
create table ARTIST
(
  Aname varchar(30) PRIMARY KEY,
  ProdComp varchar(30),
  constraint PRODCOMPFK foreign key(ProdComp) references PRODUCTION_COMPANY(PName)
  on update cascade on delete cascade
);
```

	Aname	ProdComp
▶	Me3	Ez Productions
	Shed Eeran	Ez Productions
	TwoRepublic	Ez Productions
	Green Night	Ten Productions
	Light-Red Floyd	Ten Productions
	Skittle	Ten Productions
	Bustin Jieber	Zak Productions
	Swaylor Tift	Zak Productions
	WarmPlay	Zak Productions
*	NULL	NULL

```
create table PRODUCTION_COMPANY
(
  Pname varchar(30) PRIMARY KEY,
  Address varchar(20)
);
```

	Pname	Address
▶	Ez Productions	456 Ze Street, West Long Branch, NJ
	Ten Productions	789 Net Street, West Long Branch, NJ
	Zak Productions	123 Kaz Street, West Long Branch, NJ
*	NULL	NULL

# Parts 1 & 2: Tables and Data

```
create table GENRE
(
  ArtGenre varchar(10),
  ArtName varchar(30),
  PRIMARY KEY (ArtGenre,ArtName),
  CONSTRAINT ARTNAMEFK foreign key(ArtName) references ARTIST(Aname)
  on update cascade on delete cascade
);
```

	ArtGenre	ArtName
▶	ALternative	Green Night
	Alternative	TwoRepublic
	Pop	Bustin Jieber
	Pop	Shed Eeran
	Pop	Swaylor Tift
	Pop	WarmPlay
	Rock	Green Night
	Rock	Light-Red Floyd
	Rock	Me3
	Rock	Skittle
•	NULL	NULL

```
create table CONCERT
(
  Clocation varchar(20),
  CDateTime varchar(20),
  ArtName varchar(30),
  PRIMARY KEY (Clocation,CDateTime,ArtName),
  CONSTRAINT ARTNAMEFK FOREIGN KEY(ArtName) REFERENCES ARTIST(Aname) on update cascade on delete cascade
);
```

	Clocation	CDateTime	ArtName
▶	London, UK	March 3, 2024 20:00	WarmPlay
	Los Angeles, USA	March 3, 2024 20:00	Bustin Jieber
	Los Angeles, USA	March 3, 2024 20:00	Swaylor Tift
	Seattle, USA	March 1, 2024 19:00	Swaylor Tift
	Toronto, Canada	March 1, 2024 19:00	Light-Red Floyd
•	NULL	NULL	NULL

# Parts 1 & 2: Tables and Data

```
create table USER
```

```
(  
    Username varchar(20) PRIMARY KEY,  
    AcctCreationDate varchar(20),  
    HoursListened int  
);
```

	Username	AcctCreationDate	HoursListened
▶	Alicia	November 8, 2024	345
	Brendan	November 7, 2024	101
	Bryn	November 16, 2024	1000
	Estania	November 13, 2024	300
	Ez	November 14, 2024	445
	Gina	November 7, 2024	120
	Joseph	November 15, 2024	412
	Maryam	November 20, 2024	123
	Sean	November 5, 2024	14
	Ten	November 1, 2024	87
	Vincent	November 15, 2024	10
	Zak	November 1, 2024	150
	Zheng	November 4, 2024	20
*	NULL	NULL	NULL

	UserFollowing	UserFollowed
	Bryn	Ez
	Bryn	Maryam
	Bryn	Zheng
	Ez	Ten
	Ez	Zak
	Ten	Gina
	Ten	Maryam
	Ten	Zak
	Vincent	Bryn
	Vincent	Gina
	Vincent	Joseph
	Vincent	Zheng
	Zak	Bryn
	Zak	Estania
	Zak	Gina
	Zak	Ten
*	NULL	NULL

```
create table USER_FOLLOWS_USER
```

```
(  
    UserFollowing varchar(20),  
    UserFollowed varchar(20),  
    PRIMARY KEY (UserFollowing,UserFollowed),  
    CONSTRAINT USERFOLLOWINGFK FOREIGN KEY(UserFollowing) REFERENCES USER(Username) on update cascade on delete cascade,  
    CONSTRAINT USERFOLLOWEDFK FOREIGN KEY(UserFollowed) REFERENCES USER(Username) on update cascade on delete cascade  
);
```



# Parts 1 & 2: Tables and Data

```
create table USER_FOLLOWS_ARTIST
(
    Follower varchar(20),
    ArtistFollowed varchar(30),
    PRIMARY KEY (Follower,ArtistFollowed),
    CONSTRAINT FOLLOWERFK FOREIGN KEY(Follower) REFERENCES USER(Username) on update cascade on delete cascade,
    CONSTRAINT ARTISTFOLLOWEDFK FOREIGN KEY(ArtistFollowed) REFERENCES ARTIST(Aname) on update cascade on delete cascade
);
```

```
create table USER_FAVORITES_ALBUM
(
    Favoriter varchar(20),
    AlbumFavorited varchar(20),
    PRIMARY KEY (Favoriter,AlbumFavorited),
    CONSTRAINT FAVORITERFK FOREIGN KEY(Favoriter) REFERENCES USER(Username) on update cascade on delete cascade,
    CONSTRAINT ALBUMFAVORITEDFK FOREIGN KEY(AlbumFavorited) REFERENCES ALBUM(AlbumName) on update cascade on delete cascade
);
```

# Parts 1 & 2: Tables and Data

	Follower	ArtistFollowed
▶	Alicia	Bustin Jieber
	Alicia	Green Night
	Brendan	Bustin Jieber
	Brendan	Green Night
	Brendan	TwoRepublic
	Bryn	Bustin Jieber
	Bryn	Light-Red Floyd
	Bryn	Shed Eeran
	Bryn	Swaylor Tift
	Estania	Bustin Jieber
	Estania	Shed Eeran
	Estania	Skittle
	Estania	WarmPlay
	Ez	Swaylor Tift
	Ez	TwoRepublic
	Gina	Light-Red Floyd
	Gina	Swaylor Tift
	Joseph	Bustin Jieber
	Joseph	Me3
	Joseph	Skittle
	Maryam	Me3
	Maryam	Skittle
	Sean	Shed Eeran
	Sean	WarmPlay
	Ten	Light-Red Floyd

	Ten	Shed Eeran
	Vincent	Skittle
	Vincent	WarmPlay
	Zak	Bustin Jieber
	Zak	Green Night
	Zak	Swaylor Tift
	Zak	TwoRepublic
	Zheng	Bustin Jieber
	Zheng	Me3
★	NULL	NULL

	Favoriter	AlbumFavorited
▶	Ez	Olden Stars
	Ten	First Ocean
	Ten	Olden Stars
	Ten	Social Grounds
	Zak	First Ocean
	Zak	Harder Running Waters
	Zak	Olden Stars
	Zak	Social Grounds
	Zak	Soft Thoughts
	Zak	Soul Of Secrets
★	NULL	NULL

# Parts 1 & 2: Tables and Data

CREATE TABLE SONG

```
(
  SongName varchar(20),
  Artist_Name varchar(30),
  Length_seconds int,
  Release_date varchar(10),
  PRIMARY KEY (SongName, Artist_Name),
  AlbumName varchar(30),
  CONSTRAINT ALBUMNAMEFK FOREIGN KEY (AlbumName) REFERENCES ALBUM(AlbumName) on update cascade on delete cascade,
  CONSTRAINT SONG_ART_FK FOREIGN KEY (Artist_Name) REFERENCES ARTIST(Aname) on update cascade on delete cascade
);
```

CREATE TABLE ALBUM

```
(
  AlbumName varchar(30),
  AlbumYear int(4),
  ArtistName varchar(30),
  PRIMARY KEY (AlbumName, ArtistName),
  CONSTRAINT ALBUM_ART_FK FOREIGN KEY (ArtistName) REFERENCES ARTIST(Aname) on update cascade on delete cascade
);
```

	SongName	Artist_Name	Length_seconds	Release_date	AlbumName
▶	Carousing World	Me3	232	Nov 13, 2019	NULL
	Cheery Breathe	Swaylor Tift	202	Nov 13, 2019	Olden Stars
	Classical Dreams	Skittle	290	Mar 5, 2023	NULL
	Discover Limit	Swaylor Tift	122	Nov 13, 2019	Olden Stars
	Dreams	Bustin Jieber	215	Oct 13, 2022	Soft Thoughts
	Enjoy Skies	Shed Eeran	147	Oct 13, 2022	First Ocean
	Evening Mystery	Skittle	160	Nov 13, 2019	Social Grounds
	Give Back Waltz	Swaylor Tift	229	Mar 5, 2023	NULL
	Instrumental Time	Bustin Jieber	211	Oct 13, 2022	Soft Thoughts
	Late Fire	Shed Eeran	151	Oct 13, 2022	First Ocean
	Lost Gravity	Green Night	136	Oct 13, 2022	Soul Of Secrets
	Man Of Madness	Skittle	262	Nov 13, 2019	Social Grounds
	Oh My Pretty Hy...	Light-Red Fl...	202	Oct 13, 2022	NULL
	Piece For City	Skittle	185	Nov 13, 2019	Social Grounds
	Redine Home	TwoRepublic	268	Mar 5, 2023	Harder Runni...
	Relaxing Wind	WarmPlay	133	Oct 13, 2022	NULL
	Saxophone Mirade	Light-Red Fl...	233	Mar 5, 2023	NULL
	Search For Death	Green Night	232	Oct 13, 2022	Soul Of Secrets
	Sweet Glass	TwoRepublic	212	Mar 5, 2023	Harder Runni...
	Teen World	Shed Eeran	130	Oct 13, 2022	First Ocean
	The Light Cocktail	Shed Eeran	259	Oct 13, 2022	First Ocean
	Think About Satu...	TwoRepublic	123	Mar 5, 2023	Harder Runni...
	Think Of Desire	Swaylor Tift	298	Oct 13, 2022	NULL
	Unquiet Light	Swaylor Tift	193	Nov 13, 2019	Olden Stars
	What A Story	Bustin Jieber	155	Mar 5, 2023	NULL

	AlbumName	AlbumYear	ArtistName
▶	First Ocean	2022	Shed Eeran
	Harder Running Waters	2023	TwoRepublic
	Olden Stars	2019	Swaylor Tift
	Social Grounds	2019	Skittle
	Soft Thoughts	2022	Bustin Jieber
	Soul Of Secrets	2022	Green Night
*	NULL	NULL	NULL



# Parts 1 & 2: Tables and Data

```
CREATE TABLE LIKES
```

```
(  
    Liker varchar(30),  
    SongLiked varchar(20),  
    PRIMARY KEY (Liker, SongLiked),  
    CONSTRAINT LIKERFK FOREIGN KEY (Liker) REFERENCES USER(Username) on update cascade on delete cascade,  
    CONSTRAINT SONGLIKEDFK FOREIGN KEY (SongLiked) REFERENCES SONG(SongName) on update cascade on delete cascade  
);
```

	Liker	SongLiked
▶	Ez	Classical Dreams
	Ez	Evening Mystery
	Ez	Instrumental Time
	Ez	Piece For City
	Ten	Dreams
	Ten	What A Story
	Zak	Cheery Breathe
	Zak	Discover Limit
	Zak	Enjoy Skies
	Zak	Give Back Waltz
	Zak	Late Fire
	Zak	Man Of Madness
	Zak	Teen World
	Zak	The Light Cocktail
	Zak	Think Of Desire
	Zak	Unquiet Light
•	NULL	NULL

```
CREATE TABLE FEATURES_ON
```

```
(  
    ArtName varchar(30),  
    SName varchar(50),  
    PRIMARY KEY (ArtName, SName),  
    CONSTRAINT ART_NAME_FK FOREIGN KEY (ArtName) REFERENCES ARTIST(Aname) on update cascade on delete cascade,  
    CONSTRAINT SONG_LIKESNAME_FK FOREIGN KEY (SName) REFERENCES SONG(SongName) on update cascade on delete cascade  
);
```

	ArtName	SName
▶	Skittle	Dreams
	Skittle	Enjoy Skies
	TwoRepublic	Classical Dreams
•	NULL	NULL

## Part 3. Query 1: Select all Artist Names

Expected:

Swaylor Tift

Shed Eeran

Skittle

Bustin Jieber

TwoRepublic

Light-Red Floyd

WarmPlay

Me3

Green Night

```
select Aname  
from ARTIST;
```

	Aname
▶	Bustin Jieber
	Green Night
	Light-Red Floyd
	Me3
	Shed Eeran
	Skittle
	Swaylor Tift
	TwoRepublic
	WarmPlay
•	NULL

## Part 3. Query 2: All Users followed by Zak that have >100 minutes

Expected:

Gina (120)

Estania (300)

Bryn (2000)

```
select Username
from USER t1 join USER_FOLLOWS_USER t2 on t1.Username=t2.UserFollowed
where UserFollowing="Zak" and HoursListened>100;
```

NOT

Ten (87)

	Username
▶	Bryn
	Estania
	Gina

Part 3. Query 3: Find the number of songs each artist has created, but only the artists who have featured on someone else's songs.

Expected:

Skittle (4)

TwoRepublic (3)

```
select Artist_Name, count(*) as "Num_of_Songs"
from SONG WHERE Artist_Name IN (SELECT DISTINCT ArtName FROM FEATURES_ON)
group by Artist_Name;
```

	Artist_Name	Num_of_Songs
▶	Skittle	4
	TwoRepublic	3

## Part 3. Query 4: Select the artists that have been followed by users with under 100 hours listened.

Expected:

People followed by:

Sean

Ten

Vincent

Zheng

These are:

WarmPlay

Shed Eeran

Skittle

Bustin Jieber

Light-Red Floyd

Me3

```
select unique Aname
from ARTIST a join USER_FOLLOWS_ARTIST UFA
on a.Aname=UFA.ArtistFollowed join USER u on u.Username=UFA.Follower
where HoursListened<100;
```

	Aname
▶	Bustin Jieber
	Light-Red Floyd
	Me3
	Shed Eeran
	Skittle
	WarmPlay



## Part 3. Query 5: Select the artist name, each of their albums and respective year released for all artists performing in Los Angeles where their album was released after 2020.

### Expected:

Artists performing in Los Angeles:

Bustin Jieber

Swaylor Tift

Albums after 2020:

Bustin Jieber, Soft Thoughts, 2022

```
select ArtistName, AlbumName, AlbumYear
from CONCERT c join ALBUM a on c.ArtName=a.ArtistName
where AlbumYear>2020;
```

	ArtistName	AlbumName	AlbumYear
►	Bustin Jieber	Soft Thoughts	2022

## Part 3. Query 6: Show the production companies and their locations that produce for Alternative artists.

Expected:

Country Artists:

Green Night

TwoRepublic

PCs and Locations:

Ten Productions (789 Net St)

Ez Productions (456 Ze St)

```
select Pname, Address
from PRODUCTION_COMPANY p join ARTIST a on
p.Pname=a.ProdComp join GENRE g on a.Aname=g.ArtName
where ArtGenre='Alternative';
```

	Pname	Address
▶	Ez Productions	456 Ze Street, West Long Branch, NJ
	Ten Productions	789 Net Street, West Long Branch, NJ

## Part 4: Updates and Deletes

Delete Sean from User: `DELETE FROM USER WHERE Username="Sean";`

	Maryam	November 20, 2024	123
	Sean	November 5, 2024	14
	Ten	November 1, 2024	87

	Maryam	November 20, 2024	123
	Ten	November 1, 2024	87

Delete Skittle from Artist: `DELETE FROM ARTIST WHERE Aname = "Skittle";`

	Follower	ArtistFollowed
	Joseph	Skittle
	Maryam	Me3
	Maryam	Skittle
	Ten	Light-Red Floyd
	Ten	Shed Eeran
	Vincent	Skittle
	Vincent	WarmPlay
	Zak	Bustin Jieber
	Zak	Green Night

	Follower	ArtistFollowed
	Joseph	Bustin Jieber
	Joseph	Me3
	Maryam	Me3
	Ten	Light-Red Floyd
	Ten	Shed Eeran
	Vincent	WarmPlay
	Zak	Bustin Jieber
	Zak	Green Night
	Zak	Swaylor Tift

## Part 4 : Updates and Deletes

Update the hours listened of Vincent from 10 to 40: UPDATE USER SET HoursListened=40 WHERE Username="Vincent";

Ten	November 1, 2024	87
Vincent	November 15, 2024	10
Zak	November 1, 2024	150

Ten	November 1, 2024	87
Vincent	November 15, 2024	40
Zak	November 1, 2024	150

Update the name of Green Night to Blue Day: UPDATE ARTIST SET Aname="Blue Day" WHERE Aname="Green Night";

Lost Gravity	Green Night	136	Oct 13, 2022	Soul Of Secrets
Oh My Pretty Hysteria	Light-Red Floyd	202	Oct 13, 2022	NULL
Redline Home	TwoRepublic	268	Mar 5, 2023	Harder Runnin...
Relaxing Wind	WarmPlay	133	Oct 13, 2022	NULL
Saxaphone Mirade	Light-Red Floyd	233	Mar 5, 2023	NULL
Search For Death	Green Night	232	Oct 13, 2022	Soul Of Secrets

Lost Gravity	Blue Day	136	Oct 13, 2022	Soul Of Secrets
Oh My Pretty Hysteria	Light-Red Floyd	202	Oct 13, 2022	NULL
Redline Home	TwoRepublic	268	Mar 5, 2023	Harder Runnin...
Relaxing Wind	WarmPlay	133	Oct 13, 2022	NULL
Saxaphone Mirade	Light-Red Floyd	233	Mar 5, 2023	NULL
Search For Death	Blue Day	232	Oct 13, 2022	Soul Of Secrets

## Part 5: View

```
CREATE VIEW Number_of_artists_followed AS  
SELECT U.Username, COUNT(A.ArtistFollowed)  
AS ArtistsFollowedCount  
FROM USER U LEFT JOIN  
USER_FOLLOWS_ARTIST A ON U.Username = A.Follower  
GROUP BY U.Username;
```



## Part 5: View

SELECT \* FROM Number\_of\_artists\_followed;

Before deleting User Sean and Artist Skittle

Username	ArtistsFollowedCount
Alicia	2
Brendan	3
Bryn	4
Estania	4
Ez	2
Gina	2
Joseph	3
Maryam	2
Sean	2
Ten	2
Vincent	2
Zak	4
Zheng	2

SELECT \* FROM Number\_of\_artists\_followed;

After deleting User Sean and Artist Skittle

Username	ArtistsFollowedCount
Alicia	2
Brendan	3
Bryn	4
Estania	3
Ez	2
Gina	2
Joseph	2
Maryam	1
Ten	2
Vincent	1
Zak	4
Zheng	2

# Part 5: Function

```
DELIMITER //
CREATE FUNCTION Account_activity(User_name VARCHAR(20))
RETURNS VARCHAR(30)
BEGIN
DECLARE hours INT;
SELECT HoursListened INTO hours
FROM USER
WHERE Username = User_name;
IF hours > ((SELECT AVG(HoursListened) FROM USER) + 100) THEN
RETURN 'very active account';
ELSEIF hours < ((SELECT AVG(HoursListened) FROM USER) - 100) THEN
RETURN 'not very active account';
ELSE
RETURN 'average account activity';
END IF;
END //
DELIMITER ;
```

```
SELECT Account_activity('Vincent')
```

```
Account_activity('Vincent')
```

```
not very active account
```

```
SELECT Account_activity('Bryn')
```

```
Account_activity('Bryn')
```

```
very active account
```

```
SELECT Account_activity('Estania')
```

```
Account_activity('Estania')
```

```
average account activity
```

## Part 6: Contributions, Challenges, and Learning

## Part 7: All SQL Statements



[https://docs.google.com/document/d/1hcLrmx5lmghPk\\_baGycl-oDgCbcZMgy-5AiegSu-YGs/edit?usp=sharing](https://docs.google.com/document/d/1hcLrmx5lmghPk_baGycl-oDgCbcZMgy-5AiegSu-YGs/edit?usp=sharing)