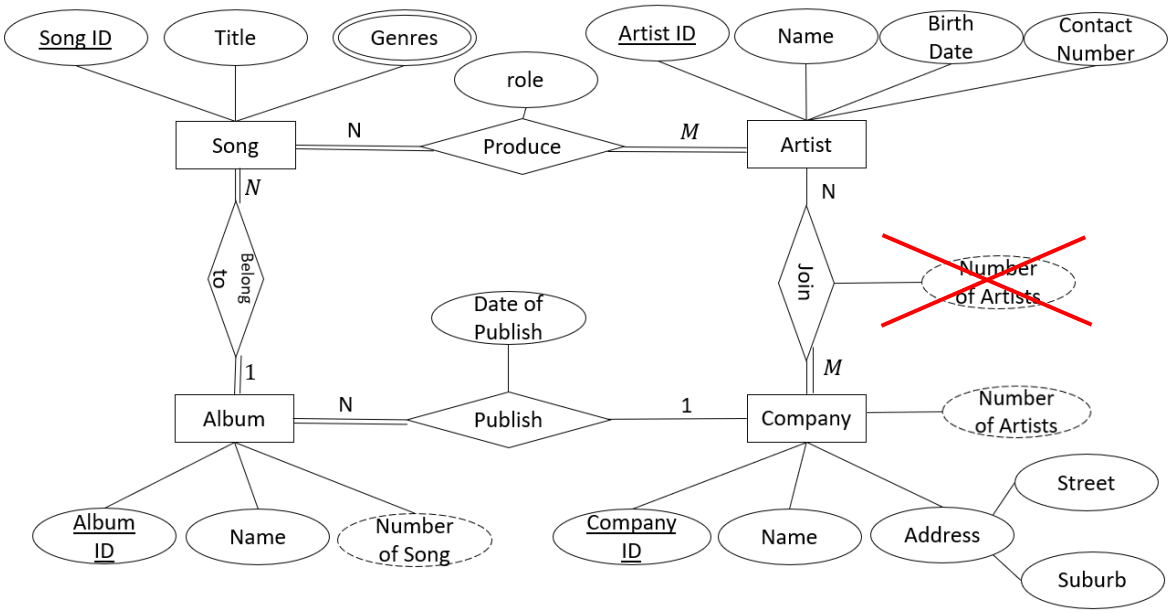
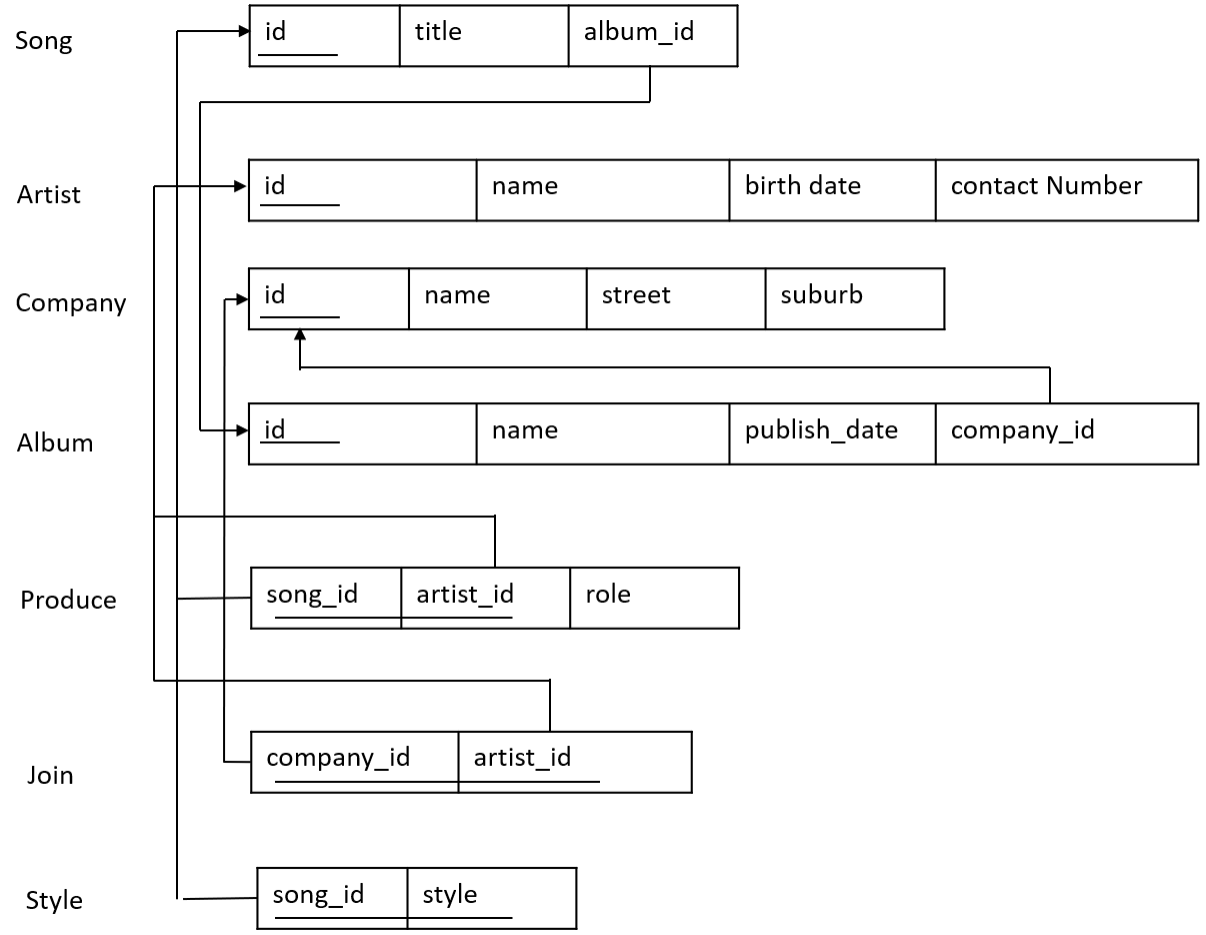
Q1.


Song ID
Title
Genres
role
Artist ID
Name
Birth Date
Contact Number
Song
N
Produce
M
Artist
N
N
Belong to
Join
Number of Artists
Date of Publish
1
M
Album
N
Publish
1
Company
Number of Artists
Album ID
Name
Number of Song
Company ID
Name
Address
Street
Suburb

Q2.


Song
id
title
album_id
Artist
id
name
birth date
contact Number
Company
id
name
street
suburb
Album
id
name
publish_date
company_id
Produce
song_id
artist_id
role
Join
company_id
artist_id
Style
song_id
style

Q3.

1. $A \leftarrow Movie \bowtie_{(mID)} MovieShowing \bowtie_{(cID)} \sigma_{(cName='Event' and\ location='GeorgeST')} Cinema$
$B \leftarrow \pi_{\{title\}}(A \bowtie_{mID} \sigma_{genre='comedy'} GenreOfFilm)$

2. $A \leftarrow \pi_{\{mid\}}(MovieShowing \bowtie_{(cID)} \sigma_{(cName='Event' and\ location='Chatswood')}(Cinema))$
$B \leftarrow \pi_{\{mid\}}(MovieShowing \bowtie_{(cID)} \sigma_{(cName='Hoyts' and\ location='Chatswood')}(Cinema))$
$C \leftarrow \pi_{\{title,releaseDate\}}(Movie \bowtie_{(mID)} (A \cap B))$

3. $A \leftarrow Movie \bowtie_{(mID)} Filming \bowtie_{(dID)} (\sigma_{(name='JamesWan')} Director)$
$B \leftarrow \pi_{\{name\}}(\sigma_{(gender='male')} Customer \bowtie_{(cusID)} WatchMovie \bowtie_{mID} \sigma_{(title='Aquaman')} A)$
$C \leftarrow \pi_{\{name\}}(\sigma_{(gender='male')} Customer \bowtie_{(cusID)} WatchMovie \bowtie_{mID} \sigma_{(title\neq'Aquaman')} A)$
$D \leftarrow B - C$

4. $A \leftarrow \pi_{\{mID\}}(\sigma_{(genre='fantasy')} GenreOfFilm) \cap \pi_{\{mID\}}(\sigma_{(genre='violence')} GenreOfFilm)$
$B \leftarrow \pi_{\{name,mID\}}(Director \bowtie_{(dID)} Filming \bowtie_{(mID)} A)$
$C \leftarrow \pi_{\{name,mID\}}(Customer \bowtie_{(cusID)} WatchMovie \bowtie_{(mID)} A)$
$D \leftarrow \pi_{\{name\}}(B \cap C)$

5. $A \leftarrow \pi_{\{mID\}}(\sigma_{(runningTime>120)} Movie)$
$B \leftarrow \pi_{\{name\}}(\sigma_{(age\geq 30\ and\ age\leq 50)}(Customer \bowtie_{(cusID)} (WatchMovie \div A)))$
$C \leftarrow \pi_{\{name\}}(Customer \bowtie_{(cusID)} WatchMovie \bowtie_{(cID)} \sigma_{(cName='Hoyts')} Cinema)$
$D \leftarrow B - C$