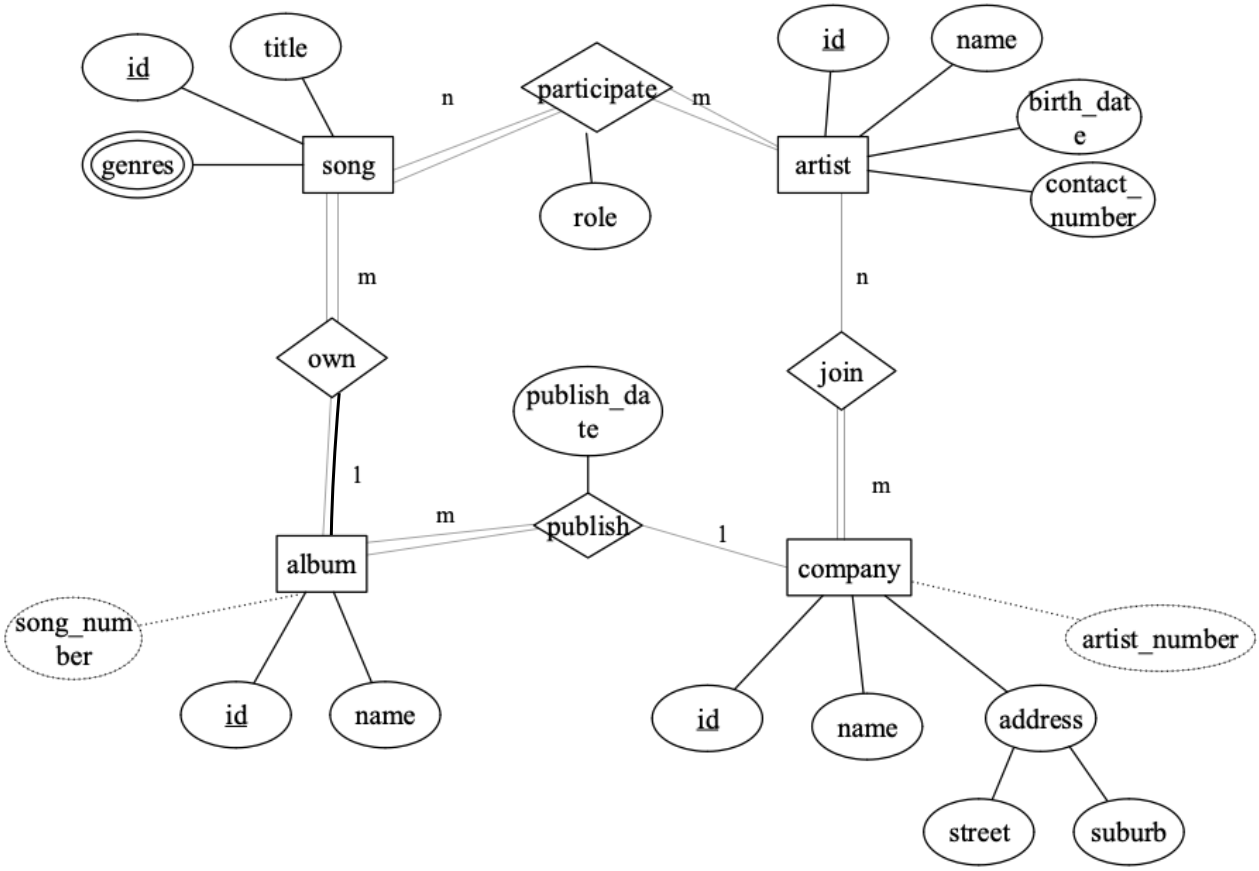
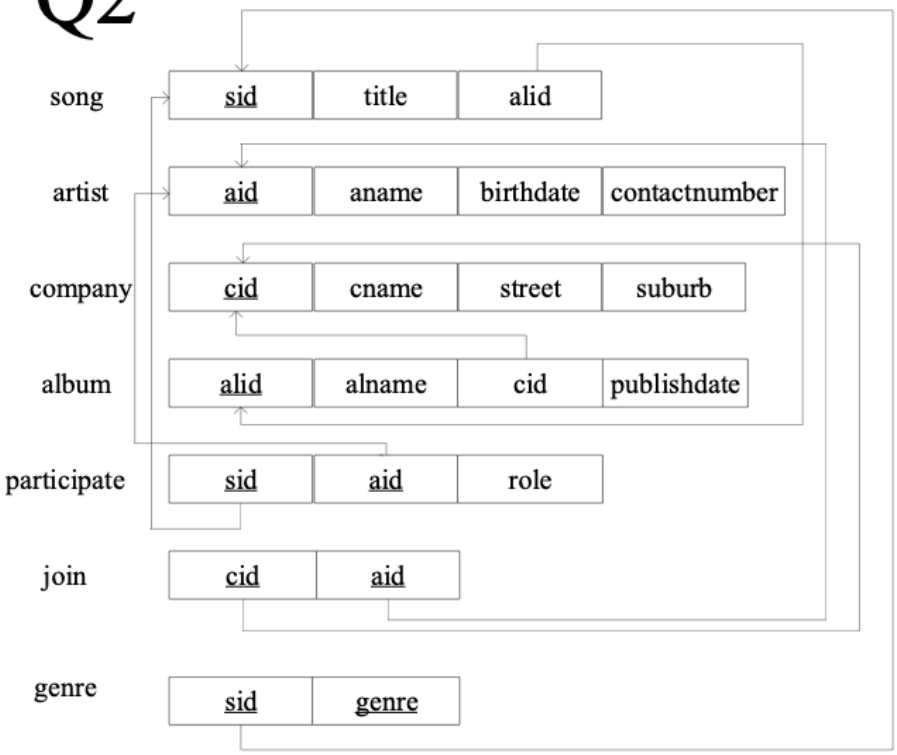
Q1


id
title
genres
song
n
participate
m
role
id
name
birth_date
artist
contact_number
m
n
own
join
publish_date
1
m
m
publish
1
album
company
song_number
artist_number
id
name
id
name
address
street
suburb

Q2


song
sid
title
alid
artist
aid
aname
birthdate
contactnumber
company
cid
cname
street
suburb
album
alid
alname
cid
publishdate
participate
sid
aid
role
join
cid
aid
genre
sid
genre

Q3

1. $A \leftarrow MovieShowing \bowtie (\sigma_{(cname='Event' \text{ AND } location='George\ St')}(\text{Cinema}))$

$B \leftarrow \sigma_{(\text{genre='comedy'})}(\text{GenreOfFilm} \bowtie \text{A})$

$C \leftarrow \pi_{\{title\}}(\text{Movie} \bowtie \text{B})$

2. $A \leftarrow \pi_{\{mID\}}$ (MovieShowing $\bowtie (\sigma_{(cName='Event' \text{ AND } location='Chatswood')}$ (Cinema)))

$B \leftarrow \pi_{\{mID\}}$ (MovieShowing $\bowtie (\sigma_{(cName='Hoyts' \text{ AND } location='Chatswood')}$ (Cinema)))

$C \leftarrow \pi_{\{title,releaseDate\}}(\text{Movie} \bowtie (A \cap B))$

3. $A \leftarrow \pi_{\{mID\}}$ (($\sigma_{(name='James\ Wan')}$Director) $\bowtie$ Filming)

$B \leftarrow \pi_{\{mID\}}(\sigma_{(title='Aquaman')}(\text{Movie} \bowtie (\sigma_{(name='James\ Wan')}(\text{Director} \bowtie$ Filming))))

$C \leftarrow \pi_{\{name\}}(\sigma_{(gender='male')}(\text{Customer} \bowtie ((\text{A} \bowtie \text{WatchMovie}))))$

$D \leftarrow \pi_{\{name\}}(\sigma_{(gender='male')}(\text{Customer} \bowtie (\text{A-B}) \bowtie \text{WatchMovie}))$

$E \leftarrow$C-D

4. $A \leftarrow \pi_{\{name\}}$(Director ⋈ Filming ⋈ ($\sigma_{(genre='fantasy' \text{ AND } genre='violence')}$ (GenreOfFilm)))

$B \leftarrow \pi_{\{name\}}$(Customer ⋈ Watchmovie ⋈ ($\sigma_{(genre='fantasy' \text{ AND } genre='violence')}$ (GenreOfFilm)))

$C \leftarrow A \cap B$

5. $A \leftarrow (\pi_{\{cusID,\ mID\}}$ WatchMovie) $\div (\pi_{\{mID\}}\ (\sigma_{(runningTime>120)}$ Movie)))

$B \leftarrow \pi_{\{cusID\}}$(WatchMovie ⋈ ($\sigma_{(cName='Hoyts')}$ Cinema))

$C \leftarrow \pi_{\{name\}}(\sigma_{(age>=30 \text{ AND } age<=50)}$ (Customer ⋈ (A-B)))