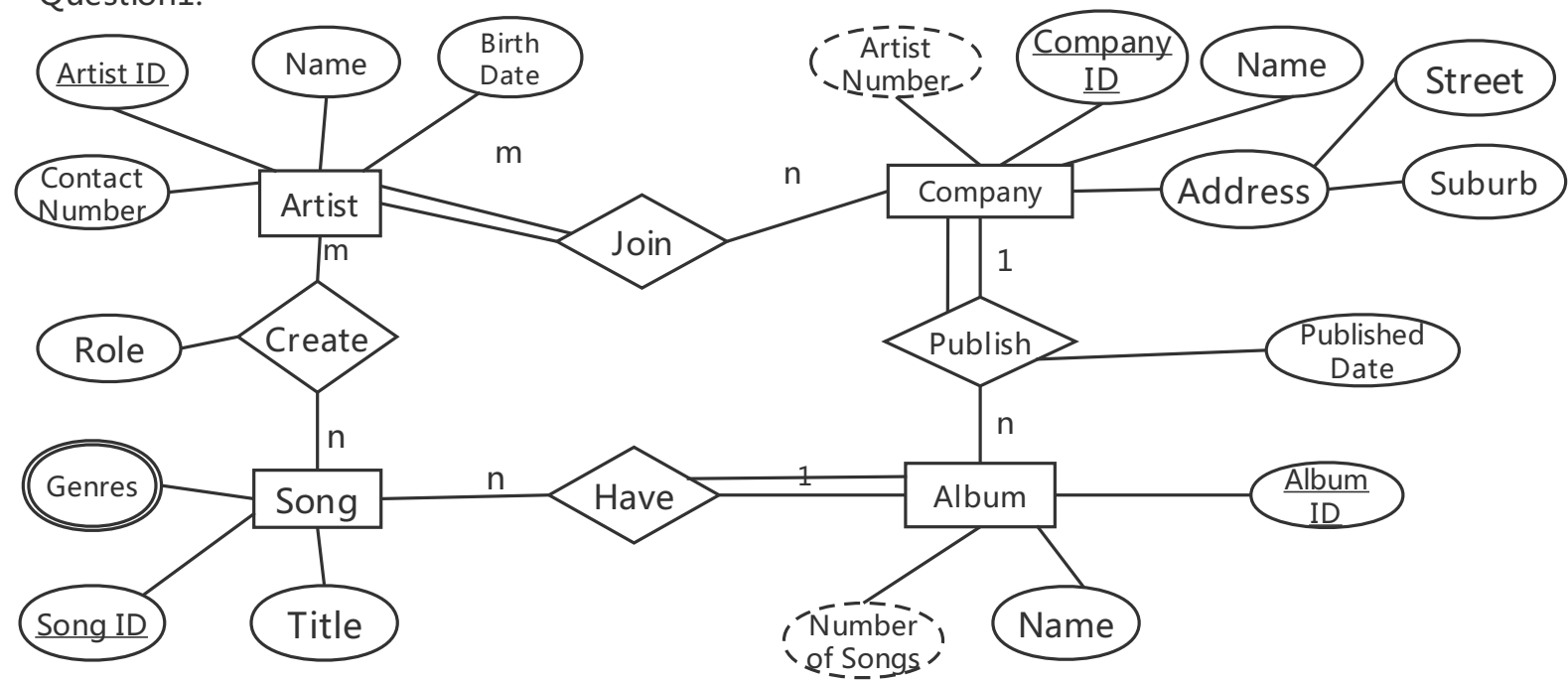
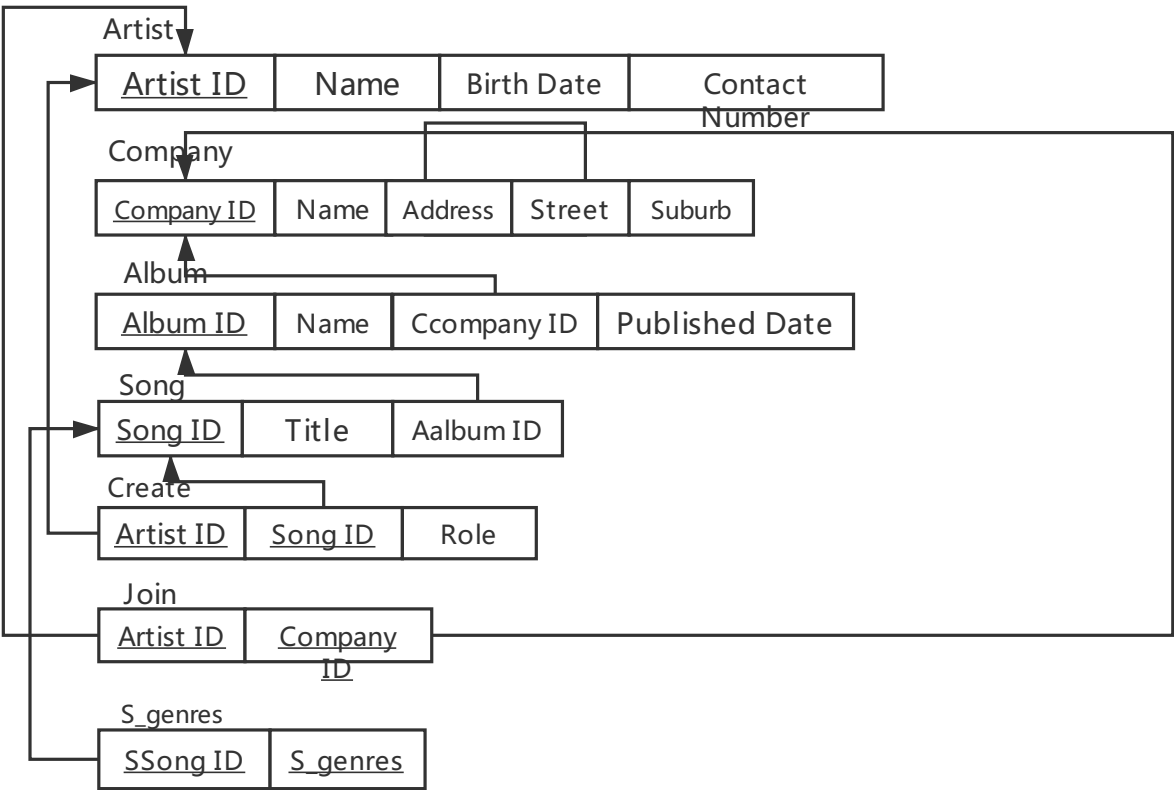


Question1:



Question2:



Question3:

(1)
 $\pi\{title\} ((\sigma(genre='comedy')(GenreOfFilm)) \bowtie (\sigma(cName='Event' \wedge location='George St')(Cinema)) \bowtie MovieShowing \bowtie Movie)$

(2)
 $\pi\{title, releaseDate\} (Movie \bowtie (\sigma(cName='Event' \wedge location='Chatswood')(Cinema)) \bowtie MovieShowing) \cap \pi\{title, releaseDate\} (Movie \bowtie (\sigma(cName='Hoyts' \wedge location='Chatswood')(Cinema)) \bowtie MovieShowing)$

(3)
 $r1 \leftarrow \pi\{name\} (\sigma(gender='male')(customer) \bowtie WatchMovie \bowtie \sigma(name='James Wan')(Director) \bowtie Filming \bowtie Movie)$
 $r2 \leftarrow \pi\{name\} (\sigma(gender='male')(customer) \bowtie WatchMovie \bowtie \sigma(name='James Wan')(Director) \bowtie Filming \bowtie \sigma(title='Aquama')(Movie))$
 $r3 \leftarrow \pi\{name\} (\sigma(gender='male')(customer) \bowtie WatchMovie)$
 $r4 \leftarrow (r3 - r1) \cup r2$

(4)
 $\pi\{name\} (\sigma(Customer.name = Director.name \wedge 1.genre \neq 2.genre) (\sigma(genre='fantasy')(GenreOfFilm) \bowtie WatchMovie \bowtie Customer \bowtie Filming \bowtie Director \times \sigma(genre='violence')(GenreOfFilm))$

(5)
 $\pi\{name\} (\sigma(30 < age \wedge age < 50)(Customer) \bowtie WatchMovie \bowtie \sigma(runningTime > 120)(Movie) \bowtie \sigma(cName \neq 'Hoyts')(Cinema))$