Relational Algebra

1.

π count(*) (σ E_Date<? ∧ E_Date>? Album)

2.

π(*) (σ Name like %?% musician)

π count(*) (π * (σ m_ID=? ∧ t.date>? ∧ t.date<?
  (π (*) ((π (*) Track) ⋈ Musician_Tracks))))

3.

π(*) (σ Name like %?% musician)

π count(*) (σ E_Date > ? ∧ E_Date < ?
  (γ a_ID (π a_ID (π (*) (π * Album_Track) ⋈
    (π (*) (σ m_ID = ? Musician_Tracks))))) ⋈ Album)

4.

π(*) (instrument)

π count(*) (π (*) (σ i_ID=? musician_instrument) ⋈ musician_tracks)

5.

π(*) (σ Name like %?% album)

π (*) ((π i_ID musician) ⋈ (π m_id
  (σ a_id = ? Album_Track)) ⋈ () ⋈ instrument)

6.

π(*) (Producer)

π count (*) ((π (*) (σ E_Date > ? ∧ E_Date < ?
  ((σ p_ID=? album_producer) ⋈ album))))

7.

π(*) (instrument)

π count (*) ((π (*)

$(\sigma$ i_ID=? musician_instrument)) $\bowtie$ musician_tracks)

8.

π count (*) (γ m_id (π (*) musician) $\bowtie$ musician_tracks)

9.

π (*) (tracks)

π count (*) (σ t_ID=? musician_tracks)

π (*) (σ t_ID=? musician_tracks)

π (*) (σ id_musician = ? musician)

10.

π(*) (tracks)

11.

π(*) (σ Date>? $\wedge$ Date <? tracks)

12.

π (*) (σ E_Date = (π MIN(E_Date) album) album)

13.

π(*) (tracks)

13.

π count (*)(σ t_ID=? album_track)

14.

π(*) (tracks)

π(*) (album)

π count (*)(σ Technician=? ((π (*) (σ a_ID =?)) $\bowtie$ track))

15.

π(*) (musician)

π count (*)((π^{*} (σ m_ID = ? musician_tracks)) $\bowtie$ track)