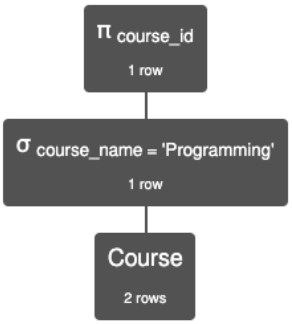
1. Find the course id of the course with the name ‘Programming’.

   π course_id σ course_name='Programming' (Course)



π course_id σ course_name = 'Programming' (Course)

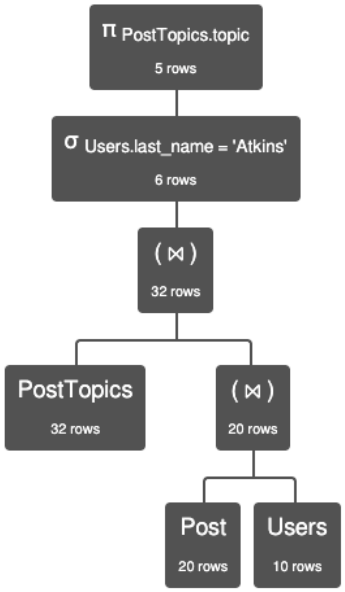
Course.course_id
'1'

2. List the topics of the posts made by users whose last name was ‘Atkins’.

   π PostTopics.topic σ Users.last_name='Atkins' ((PostTopics) ⋈ ((Post) ⋈ (Users)))

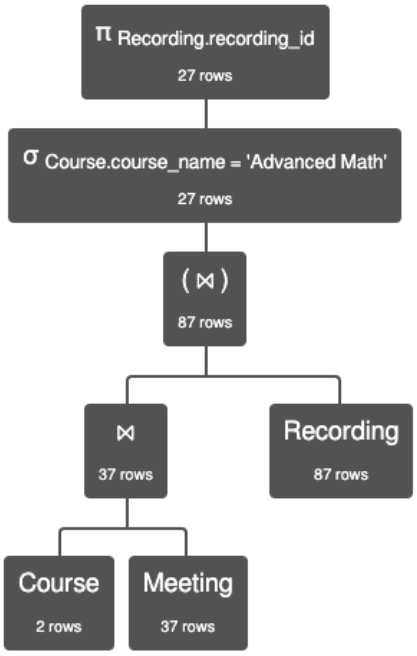
π PostTopics.topic σ Users.last_name = 'Atkins' ((PostTopics) ⋈ ((Post) ⋈ (Users)))

PostTopics.topic
'topic3'
'topic5'
'topic1'
'topic4'
'topic2'



3. List the recording ids for recordings of meetings about the course ‘Advanced Math’.

π Recording.recording_id σ Course.course_name='Advanced Math' ((Course) ⋈ (Meeting) ⋈ (Recording))



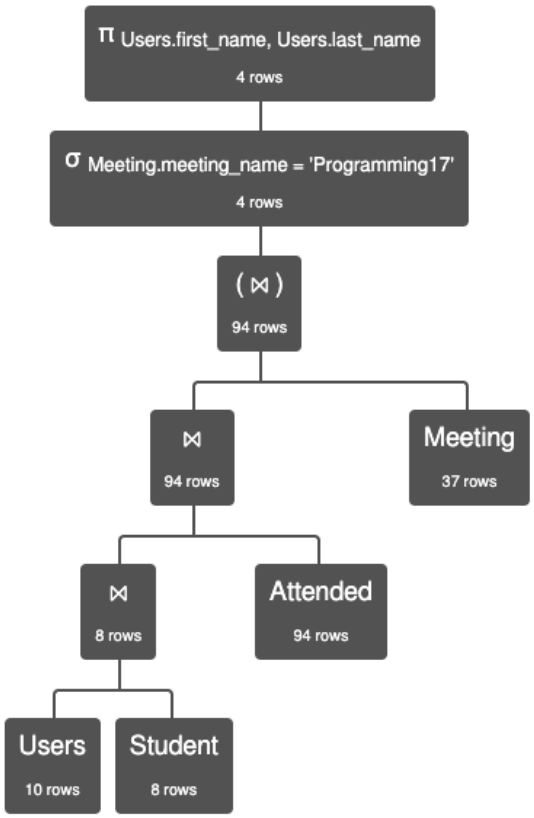
π Recording.recording_id σ Course.course_name = 'Advanced Math' (((Course) ⋈ (Meeting)) ⋈ (Recording))

Recording.recording_id
'0'
'1'
'2'
'3'
'4'
'5'
'6'
'7'
'8'
'9'

‹ 1 2 3 ›

4. Select the first and last name of students who attended a meeting with the meeting name ‘Programming17 ’.

π Users.first_name, Users.last_name σ Meeting.meeting_name='Programming17' (Users ⋈ Student ⋈ Attended ⋈ Meeting)

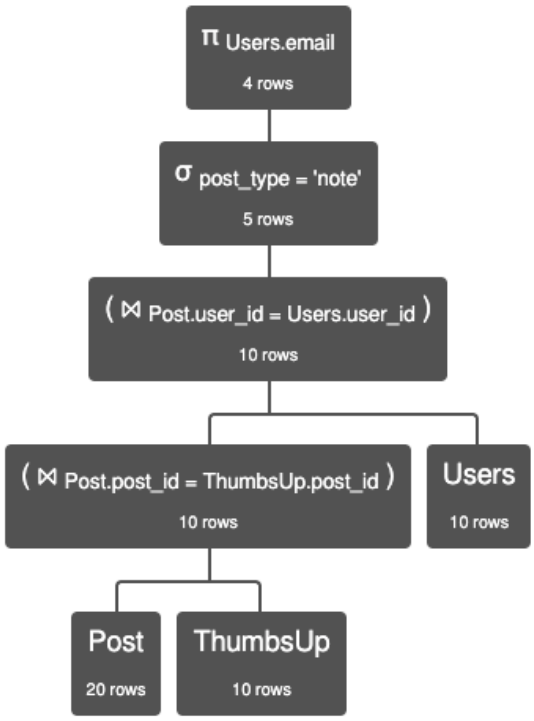


π Users.first_name, Users.last_name σ Meeting.meeting_name = 'Programming17' (((Users ⋈ Student) ⋈ Attended) ⋈ Meeting)

Users.first_name	Users.last_name
'Gary'	'Cross'
'Chelsea'	'Greer'
'Joan'	'Atkins'
'Briana'	'Smith'

5. List the user emails for users who made a post of type ‘note’ that received at least one thumbs up.

π Users.email σ post_type='note' ((Post ⋈ Post.post_id=ThumbsUp.post_id ThumbsUp) ⋈ Post.user_id = Users.user_id Users)

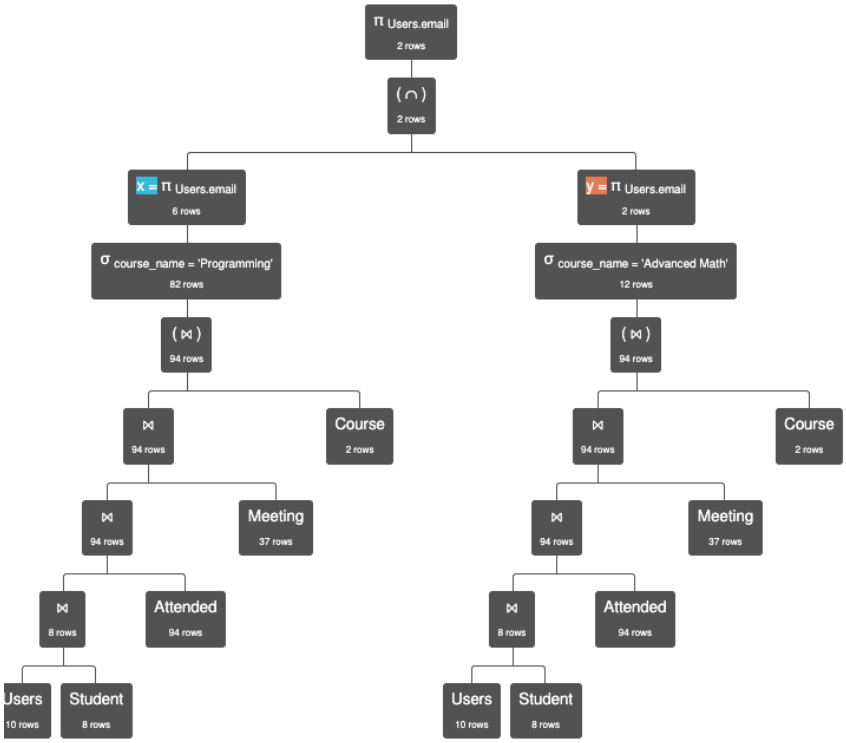


π Users.email σ post_type = 'note' ((Post ⋈ Post.post_id = ThumbsUp.post_id ThumbsUp) ⋈ Post.user_id = Users.user_id Users)

Users.email
'smithjames@ucr.edu'
'leeashley@usd.edu'
'mistymurray@usd.edu'
'myersmitchell@usd.edu'

6. List the email of all students who attended a meeting about the course ‘Programming’ AND a meeting about the course ‘Advanced Math’.

   x = (π Users.email σ course_name='Programming' (Users ⋈ Student ⋈ Attended ⋈ Meeting ⋈ Course))
   y = (π Users.email σ course_name='Advanced Math' (Users ⋈ Student ⋈ Attended ⋈ Meeting ⋈ Course))
   π Users.email (x ∩ y)



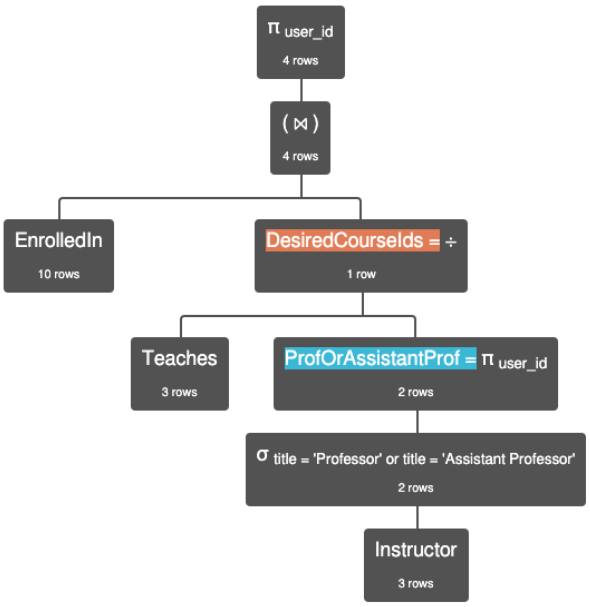
π Users.email ((π Users.email σ course_name = 'Programming' ((((Users ⋈ Student) ⋈ Attended) ⋈ Meeting) ⋈ Course)) ∩
(π Users.email σ course_name = 'Advanced Math' ((((Users ⋈ Student) ⋈ Attended) ⋈ Meeting) ⋈ Course)))

Users.email
'myersmitchell@usd.edu'
'ruizedward@ucr.edu'

7. List the user_id of students enrolled in courses that are taught by ***all*** instructors with title='Professor' or 'Assistant Professor'.

ProfOrAssistantProf = π user_id σ title='Professor' ∨ title='Assistant Professor' (Instructor)

DesiredCourseIds = Teaches ÷ ProfOrAssistantProf
π user_id (EnrolledIn ⋈ DesiredCourseIds)

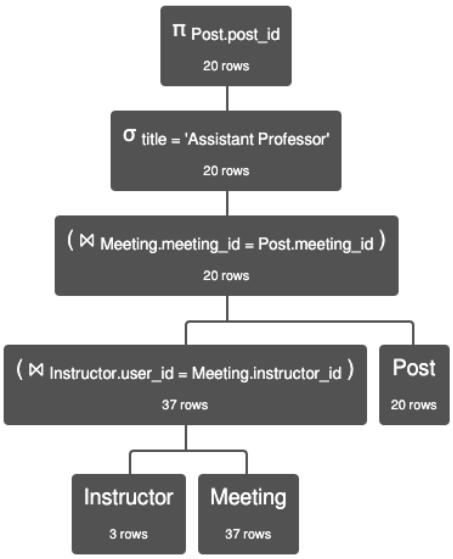


$$\pi_{user\_id}\left(EnrolledIn \bowtie \left(Teaches \div \pi_{user\_id}\,\sigma_{title = 'Professor' \text{ or } title = 'Assistant\ Professor'}\left(Instructor\right)\right)\right)$$

EnrolledIn.user_id
'1'
'5'
'6'
'7'

8. List the post_id of all the posts about meetings hosted by an 'Assistant Professor'.

π Post.post_id σ title='Assistant Professor' ((Instructor ⋈ Instructor.user_id=Meeting.instructor_id Meeting) ⋈ Meeting.meeting_id = Post.meeting_id Post)



π Post.post_id σ title = 'Assistant Professor' ((Instructor ⋈ Instructor.user_id = Meeting.instructor_id Meeting) ⋈ Meeting.meeting_id = Post.meeting_id Post)

Post.post_id
'7'
'0'
'5'
'8'
'15'
'16'
'14'
'1'
'2'
'4'

‹ 1 2 ›