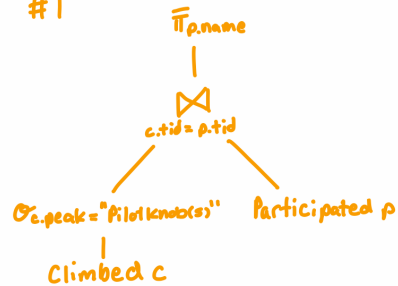


Q1-10 Relational Algebra

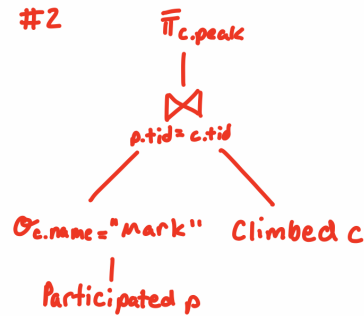
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53%

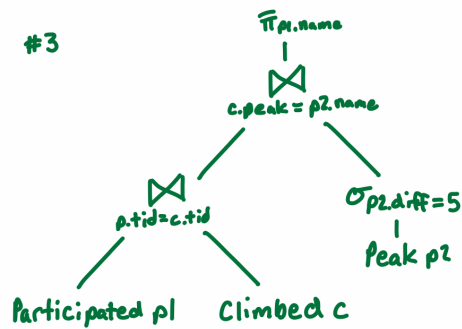
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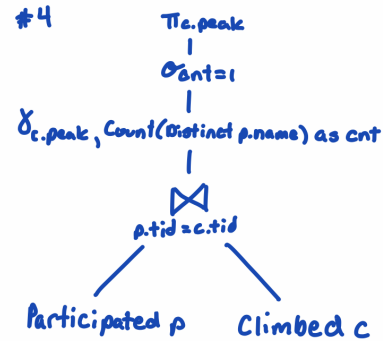
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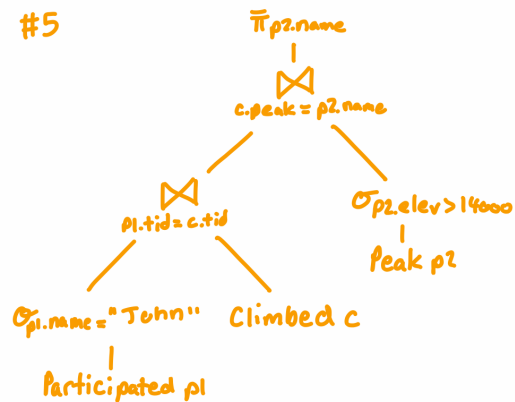
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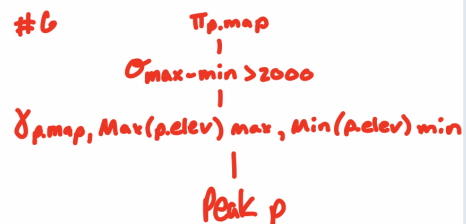
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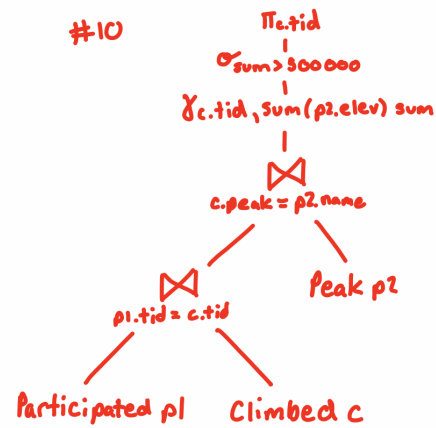
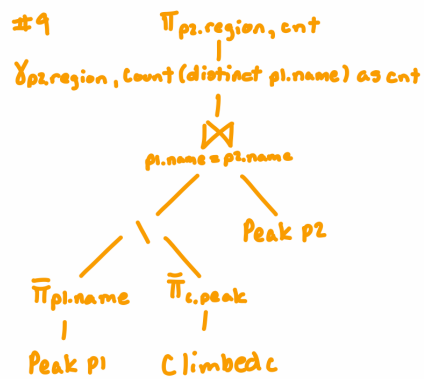
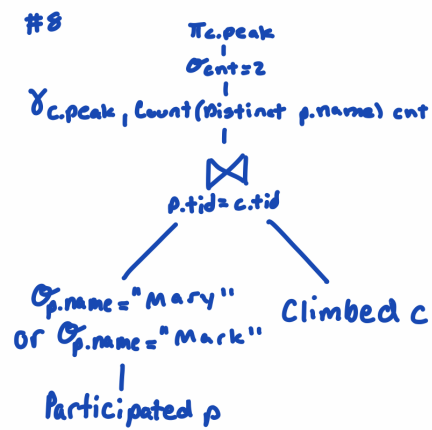
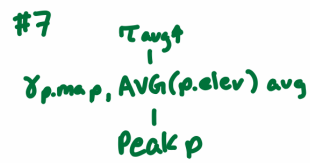


#5



#6





Q1-10 Queries

Question 1

Query:

```
SELECT DISTINCT p.name
FROM PARTICIPATED AS p, CLIMBED AS c
WHERE c.peak = "Pilot Knob (S)" AND p.trip_id = c.trip_id;
```

Output:

NAME
JOHN
MARK
MICHAEL

Question 2

Query:

```
SELECT DISTINCT c.peak
FROM PARTICIPATED AS p, CLIMBED AS c
WHERE p.name = "MARK" AND p.trip_id = c.trip_id;
```

Output:

PEAK
Center Peak
North Maggie Mountain
Whaleback
Kearsarge Peak
Lion Rock
Midway Mountain
Mount Hale
Mount Langley
Pilot Knob (S)
Dragon Peak
Mount Barnard
Mount Guyot
Mount Newcomb
South Guard
Thor Peak
Angora Mountain
Florence Peak
Joe Devel Peak
Mount McAdie
Mount Rixford
Muah Mountain
Olancho Peak
Moses Mountain
Mount Williamson
Needham Mountain

Question 3

Query:

```
SELECT DISTINCT p1.name
from PARTICIPATED as p1, CLIMBED as c, PEAK as p2
where p2.diff = "5" and p1.trip_id = c.trip_id AND c.peak = p2.name;
```

Output:

NAME
DONNA
ELIZABETH
JOHN

Question 4

Query:

```
SELECT c.peak
from PARTICIPATED as p, CLIMBED as c
where p.trip_id = c.trip_id
GROUP BY c.peak
HAVING count(DISTINCT p.name) = 1;
```

Output:

PEAK
Center Peak
Lone Pine Peak
Mount Gardiner
Mount LeConte
Mount Muir
North Maggie Mountain
University Peak

Question 5

Query:

```
SELECT distinct p2.name
from PARTICIPATED as p1, CLIMBED as c, PEAK as p2
where p2.elev > 14000 and p1.name = "JOHN" and
      p1.trip_id = c.trip_id AND c.peak = p2.name;
```

Output:

NAME
Mount Langley
Mount Whitney

Question 6

Query:

```
SELECT p.map
from PEAK as p
group by p.map
HAVING MAX(p.elev) - MIN(p.elev) > 2000;
```

Output:

MAP
Kearsarge Peak
Mount Whitney

Question 7

Query:

```
SELECT map, AVG(elev) as Avg_Elevation
FROM PEAK
group by map
order by Avg_Elevation;
```

Output:

MAP	Avg_Elevation
Onyx	6200
Lament Peak	7635
Ninemile Canyon	8000
Rockhouse Basin	8360
Owens Peak	8453
Kearsarge Peak	8550.666666666666
Cannell Peak	8802
Silver City	9023
Crag Peak	9480
Monache Mtn	9533
Moses Mtn	9782.5
Sirretta Peak	9977
Kern Lake	10545
Bartlett	11016
Mt Silliman	11188
Lodgepole	11240
Olancho	11301.5
Kern Peak	11510
Sphinx Lakes	11717
Mineral King	12280.4
Triple Divide Peak	12657.375
Mt Clarence King	12838.375
Cirque Peak	12900
Mt Kaweah	12945
Mt Brewer	13334.357142857143
Mount Whitney	13493.277777777777
Mt Langley	13561
Mt Williamson	13747.777777777777

Question 8

Query:

```
select c.peak
from PARTICIPATED as p, CLIMBED as c
where c.trip_id = p.trip_id and (p.name = "MARY" OR p.name = "MARK")
group by c.peak
HAVING Count(DISTINCT p.name) = 2;
```

Output:

PEAK
Dragon Peak
Joe Devel Peak
Kearsarge Peak
Lion Rock
Midway Mountain
Moses Mountain
Mount Barnard
Mount Guyot
Mount Hale
Mount Langley
Mount McAdie
Mount Newcomb
Mount Rixford
Mount Williamson
Muah Mountain
Needham Mountain
Olancha Peak
South Guard
Thor Peak

Question 9

Query:

```
SELECT p2.region, count(DISTINCT inter.name) Unclimbed_Peaks
FRom PEAK as p2, (SELECT distinct p1.name from PEAK as p1 except
    SELECT distinct c.peak from CLIMBED as c) as inter
where inter.name = p2.name
GROUP by p2.region;
```

Output:

REGION	Unclimbed_Peaks
Corocoran to Whitney	1
Great Western Divide	3
Kaweahs and West	9
Kearsarge Pass	4
Kings Kern Divide	6
Mineral King	1
Olancha to Langley	3
Southern Sierra	3
Whitney to Williamson	5

Question 10

Query:

```
SELECT c.trip_id
from PARTICIPATED as p1, CLIMBED as c, PEAK as p2
where p1.trip_id = c.trip_id AND c.peak = p2.name
GROUP by c.trip_id
having SUM(p2.elev) > 500000;
```

Output:

TRIP_ID

8

13

Q11-15 Queries

Question 11

Query:

```
select c1.sex, (count(c2.peak) / (count(distinct c1.name)*1.0)) as Avg_Peaks_Climbed
from CLIMBER as c1, PARTICIPATED as p, CLIMBED as c2
where c1.name = p.name and p.trip_id = c2.trip_id
Group by c1.sex;
```

Output:

SEX	Avg_Peaks_Climbed
F	26.666666666666668
M	18

Question 12

Query:

```
SElect nm.name
FRom (PARTICIPATED as p join CLIMBED as c on
      p.trip_id = c.trip_id and p.name = "MARIA") as m,
      (PARTICIPATED as p join CLIMBED as c on
      p.trip_id = c.trip_id and p.name != "MARIA") as nm
where m.peak = nm.peak
group by m.name, nm.name
Having Count(DISTINCT m.peak) = (SElect count(DISTINCT peak)
      FRom (PARTICIPATED as p join CLIMBED as c on
      p.trip_id = c.trip_id and p.name = "MARIA"));
```

Output:

NAME
KENNETH
MARY

Question 13

Query:

```
SELECT pc.region, (rc.climb_count)/((pc.peak_count)/1.0) as Avg_Peaks_Climbed
from (SELECT p.region, Count(DISTINCT p.name) as peak_count
      from PEAK as p group by p.region) as pc,
      (SELECT region, count(DISTINCT c.peak) as climb_count
      From CLIMBED as c, PEAK as p where c.peak = p.name
      group by region) as rc
where pc.region = rc.region
ORDER by Avg_Peaks_Climbed DESC
LIMIT 1;
```

Output:

region	Avg_Peaks_Climbed
Mineral King	0.9

Question 14

Query:

```
SElect p1.name, p2.name, Count(DISTINCT p1.trip_id) as Peaks_Climbed_Together
From PARTICIPATED as p1, PARTICIPATED as p2
where p1.trip_id = p2.trip_id and p1.name != p2.name
GROUP by p1.name, p2.name
Order by Peaks_Climbed_Together DESC
LIMIT 1;
```

Output:

NAME	NAME	Peaks_Climbed_Together
KENNETH	MARY	6

Question 15

Query:

```
SELECT DISTINCT tf.name
From ((SELECT * FROM CLIMBED as cf, PARTICIPATED as p, CLIMBER as c
      WHERE p.trip_id = cf.trip_id and c.name = p.name) as tf join
      (SELECT * FROM CLIMBED as cs, PARTICIPATED as p, CLIMBER as c
      WHERE p.trip_id = cs.trip_id and c.name = p.name) as ts on
      ts.name = tf.name and ts.when_climbed
      BETWEEN tf.when_climbed and (select DateTime(tf.when_climbed, '+60 Day')))
group by tf.name, tf.peak, tf.when_climbed
HAVING count(DISTINCT ts.peak) > 20;
```

Output:

NAME
MARY