September 1, 2018, SQL Special: 175,595,613,627,584,586,620,610,6 03,577,607,182,181,183,597,619,596,1 96,197,176,570,608,612,626,585,60 2,580,574,578,178,180,184,614,177,57 1,618,569,601,615,579,185,262

262,579,571,618,569

175

SELECT FirstName, LastName, City, State FROM (Person AS p LEFT JOIN Address as a ON p.PersonId = a.PersonId)

595

1. SELECT

SELECT name, population, area FROM World WHERE area > 3000000 OR population > 25000000;

2. UNION

SELECT name, population, area FROM World WHERE area > 3000000 UNION

SELECT name, population, area FROM World WHERE population > 25 000000;

613

1. 开始一位是排好序的,所以想用错位,最后还是没搞出来:

SELECT MIN(ABS(a.x - b.x)) AS shortest FROM point AS a, point AS b WHERE a.x != b.x;

2. Use Self Join:

SELECT MIN(a.x - b.x) AS shortest FROM point as a JOIN point a s b WHERE a.x > b.x;

627

1. CASE WHEN STATEMENT

```
UPDATE salary
SET sex = (CASE WHEN sex = 'm' THEN 'f' ELSE 'm' END);
```

2. 数学方法:

```
UPDATE salary
SET sex = CHAR(ORD('f') + ORD('m') - ORD(sex));
```

584

1. 为啥还要加上 referee_id IS NULL:

```
SELECT name FROM customer WHERE referee_id IS NULL OR referee_
id != 2;
```

586

1. 非常笨的方法:

```
SELECT g.customer_number FROM

(SELECT COUNT(order_number) AS cnt, customer_number FROM order
s GROUP BY customer_number) AS g WHERE g.cnt =

(SELECT MAX(f.cnt) FROM (SELECT COUNT(order_number) AS cnt FRO
M orders GROUP BY customer_number) AS f);
```

2. 标准答案还没老子的快:

```
SELECT g.customer_number FROM

(SELECT COUNT(order_number) AS cnt, customer_number FROM order
s GROUP BY customer_number ORDER BY cnt DESC LIMIT 1) AS g;
```

620

1. 我都能做出来的题:

```
SELECT * FROM cinema WHERE id%2 AND description != 'boring' OR
DER BY rating DESC;
```

610

1. IF statement:

```
SELECT x, y, z, IF (x+y>z \text{ AND } x+z>y \text{ AND } y+z>x, \text{ 'Yes', 'No'}) as triangle FROM triangle;
```

2. CASE statement:

```
SELECT x, y, z, (CASE WHEN x+y>z AND x+z>y AND y+z>x THEN 'Ye s' ELSE 'No' END) as triangle FROM triangle;
```

603

1. 做道简单要花九牛二虎之力:

```
SELECT a.seat_id AS seat_id FROM cinema AS a, cinema AS b WHER
E a.seat_id = b.seat_id - 1 AND a.free AND b.free
UNION
SELECT a.seat_id AS seat_id FROM cinema AS a, cinema AS b WHER
E a.seat_id = b.seat_id + 1 AND a.free AND b.free
ORDER BY seat_id
```

577

1. 我都可以做对的题:

```
select name, bonus FROM

(Employee LEFT JOIN Bonus ON Employee.empId = Bonus.empId) WHE
RE bonus IS NULL OR bonus < 1000;</pre>
```

607

1. 才知道SQL 还有 IS IN 语句:

```
SELECT name FROM salesperson WHERE sales_id NOT IN

(SELECT sales_id FROM orders WHERE com_id IN (
SELECT com_id FROM company WHERE name = 'RED'))
```

182

1. 靠自己的力量做出来的:

```
SELECT r.Email FROM

(SELECT Email, COUNT(*) AS Cnt FROM Person GROUP BY Email) AS
r WHERE r.Cnt > 1;
```

181

1. 靠自己的力量做出来的:

```
SELECT Name As Employee FROM
Employee as e LEFT JOIN

(SELECT Id AS MId, Salary AS MSal FROM Employee) AS m ON e.Man
agerId = m.MId

WHERE Salary > MSal;
```

2. Only Use SELECT:

SELECT Name AS Employee FROM Employee AS e WHERE Salary > (SEL ECT Salary FROM Employee WHERE Id = e.ManagerId);

183

1. IS IN 语句, 刚学:

SELECT Name AS Customers FROM Customers WHERE Id NOT IN (SELECT CustomerId FROM Orders);

2. Use JOIN:

```
SELECT Name AS Customers FROM

(Customers LEFT JOIN (SELECT Id AS OrderId, CustomerId FROM Orders) AS o ON Customers.Id = o.CustomerId)

WHERE OrderId IS NULL;
```

597

1. 注意看题:没说只统计在friend_request 中出现的:

```
SELECT (CASE WHEN g.d > 0 THEN ROUND(g.c/g.d, 2) ELSE 0.0 END)
AS accept_rate FROM

(SELECT COUNT(DISTINCT a.requester_id, a.accepter_id) AS c, CO
UNT(DISTINCT b.sender_id, b.send_to_id) AS d FROM
  request_accepted AS a, friend_request AS b) AS g;
```

619

1. 独立完成!

```
SELECT MAX(b.num) as num FROM

(SELECT a.num FROM
```

(SELECT num, COUNT(*) AS cnt FROM number GROUP BY num) AS a W
HERE a.cnt = 1) AS b;

596

1. 独立完成:

```
SELECT a.class FROM

(SELECT class, COUNT(DISTINCT student) AS cnt FROM courses GRO
UP BY class) AS a WHERE a.cnt >= 5;
```

2. 学到了一个 HAVING statement:

```
SELECT class FROM courses

GROUP BY class

HAVING COUNT(DISTINCT(student))>=5
```

196

1. 居然意外得做对了:

197

1. 如果不知道 datediff 函数,这题完全没法做:

SELECT DISTINCT a.Id FROM Weather AS a, Weather AS b WHERE dat ediff(a.RecordDate, b.RecordDate) = 1 AND a.Temperature > b.Temperature;

2. USE SELECT and TO_DAYS 函数:

```
SELECT t1.Id FROM Weather AS t1 INNER JOIN Weather AS t2 ON T0
_DAYS(t1.RecordDate) = T0_DAYS(t2.RecordDate) + 1
WHERE t1.Temperature > t2.Temperature
```

176

1. 独立完成:

SELECT (CASE WHEN (SELECT COUNT(DISTINCT Salary) FROM Employe
e) >=2 THEN a.Salary ELSE NULL END) AS SecondHighestSalary FRO
M

(SELECT DISTINCT Salary FROM Employee ORDER BY Salary DESC LIM IT 2) AS a ORDER BY a.Salary LIMIT 1;

2. 高手解法:

SELECT MAX(Salary) AS SecondHighestSalary FROM Employee WHERE
Salary != (SELECT MAX(Salary) FROM Employee)

3. 下面这个不懂:

■ 到底是 Which Union Which???

SELECT Salary AS SecondHighestSalary FROM Employee UNION

SELECT NULL

ORDER BY SecondHighestSalary DESC LIMIT 1,1

570

1. 独立完成的第一个Medium:

```
SELECT a.Name FROM
Employee AS a INNER JOIN

(SELECT ManagerId, COUNT(*) AS cnt FROM Employee GROUP BY Mana
gerId) AS b ON a.Id = b.ManagerId

Where b.cnt >= 5;
```

2. Use HAVING COUNT:

```
SELECT Name FROM Employee WHERE Id IN

(SELECT ManagerId FROM Employee GROUP BY ManagerId HAVING COUN
T(*) >= 5);
```

608

1. 独立完成:

```
SELECT id,

(CASE WHEN p_id IS NULL THEN 'Root' WHEN id IN (SELECT p_id FR OM tree) THEN 'Inner' ELSE 'Leaf' END)

AS type FROM tree ORDER BY id;
```

□ 为什么反过来 用 NOT IN 不work:

```
SELECT id,

(CASE WHEN p_id IS NULL THEN 'Root' ELSE (CASE WHEN id NOT IN (SELECT p_id FROM tree) THEN 'Leaf' ELSE 'Inner' END) END)

AS type FROM tree ORDER BY id;
```

2. 这个可以:

```
SELECT id,
IF(p_id IS NULL, 'Root', IF(id NOT IN (SELECT p_id FROM tree W
HERE p_id IS NOT NULL), 'Leaf', 'Inner')) AS type FROM tree OR
DER BY id;
```

3. 用 IF:

```
# Write your MySQL query statement below
SELECT id,
IF(p_id IS NULL, 'Root', IF(id IN (SELECT p_id FROM tree), 'In
ner', 'Leaf')) AS type FROM tree ORDER BY id;
```

612

1. 独立完成:

```
SELECT ROUND(MIN(c.r), 2) AS shortest FROM

(SELECT SQRT((a.x-b.x)*(a.x-b.x) + (a.y-b.y)*(a.y-b.y)) AS r F
ROM point_2d AS a, point_2d AS b WHERE a.x != b.x OR a.y != b.
y)
AS c;
```

2. 用 JOIN:

626

1. 独立完成 , Ugly Solution:

```
SELECT x.id, IF(x.id%2=0 \mid \mid x.id<(SELECT COUNT(*) FROM seat),
```

```
(SELECT student FROM seat WHERE id=x.id - 1 +
2*(x.id%2)), x.student)
AS student FROM seat AS x ORDER BY x.id;
```

2. 自己研发的NB方法:

```
SELECT a.id, b.student FROM seat AS a,
(SELECT * FROM seat

UNION ALL
(SELECT (id+1) as id, student FROM seat ORDER BY id DESC LIMIT
1)) as b
WHERE b.id = a.id - 1 + 2*(a.id%2);
```

585

1. 用了九牛二虎之力终于做出来了:

```
SELECT ROUND(SUM(TIV_2016), 2) AS TIV_2016 FROM insurance WHER
E
TIV_2015 IN (SELECT TIV_2015 FROM insurance GROUP BY TIV_2015
HAVING COUNT(*) > 1) AND
(LAT, LON) IN (SELECT LAT, LON FROM insurance GROUP BY LAT, LO
N HAVING COUNT(*) = 1);
```

602

1. 这题真是莫名其妙:非要把COUNT DISTINCT去掉才过

```
SELECT y.id, y.num FROM

(SELECT x.id, COUNT(x.frd) AS num FROM

(SELECT requester_id AS id, accepter_id AS frd FROM request_accepted

UNION ALL

SELECT accepter_id AS id, requester_id AS frd FROM request_accepted) AS x GROUP BY x.id)

AS y ORDER BY y.num DESC LIMIT 1;
```

□ 这个反而错了:

SELECT y.id, y.num FROM

(SELECT x.id, COUNT(DISTINCT x.frd) AS num FROM
(SELECT requester_id AS id, accepter_id AS frd FROM request_accepted
UNION ALL
SELECT accepter_id AS id, requester_id AS frd FROM request_accepted) AS x GROUP BY x.id)
AS y ORDER BY y.num DESC LIMIT 1;

580

1. 注意排序即可:

SELECT z.dept_name, IF(z.cnt IS NULL, 0, z.cnt) AS student_num ber FROM

(SELECT dept_name, cnt FROM (SELECT dept_id, COUNT(DISTINCT st udent_id) AS cnt FROM student GROUP BY dept_id) as x

RIGHT JOIN department ON x.dept_id = department.dept_id) AS z

ORDER BY z.cnt DESC, z.dept_name;

2. 更简洁:

SELECT dept_name, COUNT(DISTINCT student_id) AS student_number
FROM
student RIGHT JOIN department ON student.dept_id = department.
dept_id
GROUP BY dept_name ORDER BY student_number DESC, dept_name;

574

1. 题意很模糊,不仅要票数最多,二且要再Candidate Table 里:

```
SELECT g.Name FROM

(SELECT x.Name, COUNT(DISTINCT x.id) AS cnt FROM

(SELECT Vote.id AS id, Candidate.Name as Name FROM Vote LEFT

JOIN Candidate ON Vote.CandidateId = Candidate.id)

AS x GROUP BY x.Name ORDER BY cnt DESC LIMIT 1) AS g WHERE g.

Name in (SELECT Name FROM Candidate);
```

1. 题都没读懂,莫名其妙就过了。。。

```
SELECT z.question_id AS survey_log FROM

(SELECT x.question_id, (x.ans / y.shw) AS rate FROM

((SELECT a.question_id, COUNT(*) as ans FROM (SELECT question_
id FROM survey_log WHERE action = 'answer')

AS a GROUP BY a.question_id) AS x

INNER JOIN

(SELECT b.question_id, COUNT(*) as shw FROM (SELECT question_id)

d FROM survey_log)

AS b GROUP BY b.question_id) AS y

ON x.question_id = y.question_id) ORDER BY rate DESC LIMIT 1)

AS z;
```

2. 原来还能这么些:

```
select question_id as survey_log
from survey_log
group by question_id
order by count(answer_id)/count(*) desc
limit 1
```

178

1. 很简单:

```
SELECT y.Score AS Score, (SELECT COUNT(DISTINCT x.Score) FROM
Scores AS x WHERE x.Score>y.Score) + 1 AS Rank
FROM Scores AS y ORDER BY Rank;
```

2. 这个完全没懂

 https://leetcode.com/problems/rank-scores/discuss/165000/One-line-solutionand-fast @Zebo L

180

1. 太Easy:

```
SELECT DISTINCT x.Num AS ConsecutiveNums FROM Logs AS x, Logs AS y, Logs As z
```

```
WHERE x.Id = y.Id-1 AND x.Id = z.Id-2 AND x.Num = y.Num AND x.Num = z.Num;
```

2. Use INNER JOIN:

```
SELECT DISTINCT x.Num AS ConsecutiveNums FROM

Logs AS x INNER JOIN

Logs AS y ON x.Id = y.Id + 1 AND x.Num = y.Num INNER JOIN

Logs AS z ON x.Id = z.Id + 2 AND x.Num = z.Num;
```

184

1. 非常笨的方法,用Salary的value做JOIN:

SELECT x.Name AS Department, y.Name AS Employee, y.Salary AS S alary FROM

(SELECT Department.Name AS Name, Department.Id AS Id, MAX(Salary) AS val FROM

(Employee INNER JOIN Department ON Employee.DepartmentId = Department.Id) GROUP BY Department.Name)

AS x LEFT JOIN Employee AS y ON x.val = y.Salary AND x.Id = y. DepartmentId;

2. 高手解法,利用比最大 Salary大的value的个数为0:

select a.Name as Department,b. Name as Employee ,b.Salary from
Department as a join
(select * from Employee e1 where(select count(*) from Employee
e2 where e2.Salary>e1.Salary and e1.DepartmentId=e2.Department
Id)<1) as b
on b.DepartmentId=a.Id</pre>

614

1. 简单的 GROUP BY 语句:

SELECT x.follower AS follower, COUNT(DISTINCT y.follower) AS n
um FROM
follow AS x, follow AS y WHERE x.follower = y.followee GROUP B
Y x.follower;

177

1. 居然tm 过了:第一次遇到定义函数

```
CREATE FUNCTION getNthHighestSalary(N INT) RETURNS INT

BEGIN

DECLARE M INT;
SET M = N-1;
RETURN (
    # Write your MySQL query statement below.

SELECT DISTINCT Salary FROM Employee ORDER BY Salary DES
C LIMIT M,1
 );
END
```

- CREATE FUNCTION FUNCTION_NAME(VAR TYPE) RETURN TYPE
- BEGIN
- DECLARE VARS TYPES;...
- o SET VARS = ? (Initialization)
- o RETURN(SELECT 语句)
- END

571

1. 超时的解法:

```
SELECT AVG(u.target) AS median FROM(
SELECT MIN(w.num) AS target FROM

(SELECT z.num, SUM(z.cnt) AS accu FROM

(SELECT x.Number, y.Number AS num, (SELECT @total := SUM(Frequ ency) FROM Numbers), x.Frequency AS cnt FROM Numbers x, Number s y WHERE x.Number <= y.Number)

AS z GROUP BY z.num) AS w WHERE w.accu >= FLOOR((@total + 1)/2)

UNION

SELECT MIN(w.num) AS target FROM

(SELECT z.num, SUM(z.cnt) AS accu FROM
```

```
(SELECT x.Number, y.Number AS num, x.Frequency AS cnt FROM Num
bers x, Numbers y WHERE x.Number <= y.Number)
AS z GROUP BY z.num) AS w WHERE w.accu >= FLOOR((@total + 2)/
2)) AS u;
```

2. 别人的解法:

```
select avg(Number) median from(
    select Number, @prev := @count as prevCount, (@count := @c
ount + Frequency) as curCount
    from Numbers, (select @prev:=0, @count:=0, @total:=(select
sum(Frequency) from Numbers)) temp order by Number
) n1
where n1.curCount >= floor((@total+1)/2)
and @total-n1.prevCount >= floor((@total+1)/2)
```

618

SQL Hard, 九牛二虎

```
SELECT a.name as America, b.name as Asia, c.name as Europe FRO M

(SELECT @arank := @arank + 1 AS Id, s.name AS name FROM

(SELECT name FROM student where continent = 'America' ORDER BY name) AS s, (SELECT @arank := 0) AS r) AS a

LEFT JOIN

(SELECT @brank := @brank + 1 AS Id, s.name AS name FROM

(SELECT name FROM student where continent = 'Asia' ORDER BY name) AS s, (SELECT @brank := 0) AS r) AS b ON a.Id = b.Id

LEFT JOIN

(SELECT @crank := @crank + 1 AS Id, s.name AS name FROM

(SELECT name FROM student where continent = 'Europe' ORDER BY name) AS s, (SELECT @crank := 0) AS r) AS c ON a.Id = c.Id
```

GET INDEX 用:

1. SELECT @RANK

```
SELECT @rank := @rank + 1 AS Id, col FROM tablename, (SELECT @
rank := 0) AS r
```

2. ROW_NUMBER():

SELECT ROW_NUMBER() OVER(ORDER BY YourColumn) AS Rank FROM tab lename

569

601

1. 靠自己的力量做出的第一道 Hard, 虽然方法很笨:

```
SELECT w.id, w.date, w.people FROM
(
    SELECT x.id, x.date, x.people FROM stadium x, stadium y, s
tadium z WHERE
         x.id = y.id-1 \text{ AND } x.id = z.id-2 \text{ AND } x.people >= 100 \text{ AN}
D y.people \geq= 100 AND z.people \geq= 100
    UNION
    SELECT y.id, y.date, y.people FROM stadium x, stadium y, s
tadium z WHERE
         x.id = y.id-1 \text{ AND } x.id = z.id-2 \text{ AND } x.people >= 100 \text{ AN}
D y.people >= 100 AND z.people >= 100
    UNION
    SELECT z.id, z.date, z.people FROM stadium x, stadium y, s
tadium z WHERE
         x.id = y.id-1 \text{ AND } x.id = z.id-2 \text{ AND } x.people >= 100 \text{ AN}
D y.people >= 100 AND z.people >= 100
) AS w ORDER BY w.id;
```

2. 这个好像更直接一些:

```
select * from stadium s1
where s1.people>=100 and
((select count(*) from stadium s2 where s2.id in (s1.id+1,s1.id+2) and s2.people>=100)>=2
or (select count(*) from stadium s2 where s2.id in (s1.id+1,s1.id-1) and s2.people>=100)>=2
```

or (select count(*) from stadium s2 where s2.id in (s1.id-2,s
1.id-1) and s2.people>=100)>=2)

3. VARIABLE usage?

Ask and investigate.

615

1. 靠自己做出来的第二道 Hard:

```
SELECT x.pay_date AS pay_month, x.department_id, IF(x.avg0>y.a
vg1, 'higher', if(x.avg0<y.avg1, 'lower', 'same')) AS comparis
on FROM

((SELECT e.department_id AS department_id, (SUM(s.amount)/COUN
T(s.amount)) AS avg0, date_format(s.pay_date, "%Y-%m") AS pay_
date FROM

salary s LEFT JOIN employee e ON s.employee_id = e.employee_id
GROUP BY e.department_id, date_format(s.pay_date, "%Y-%m")) AS x

LEFT JOIN

(SELECT (SUM(amount)/COUNT(amount)) AS avg1, date_format(pay_d
ate, "%Y-%m") AS pay_date FROM salary GROUP BY date_format(pay_d
ate, "%Y-%m")) AS y ON x.pay_date = y.pay_date)</pre>
```

2. Leetcode discussion:

- https://leetcode.com/problems/average-salary-departments-vs-company/discuss/118586/Simple-solution-using-one-subqueries-With-Explanation
- https://leetcode.com/problems/average-salary-departments-vs-company/discuss/104245/AC-solution-using-join

579

1. Use two tables to get Cumulative Sum:

```
SELECT z.Id, MAX(z.Month) AS Month, SUM(z.tar) AS Salary FROM

(SELECT x.Id, x.Month, x.Salary AS tar, y.Month AS Mon FROM Em
ployee x, Employee y

WHERE x.Id = y.Id AND x.Month < y.Month AND x.Month >= y.Month
-3) AS z GROUP BY z.Id, z.Mon

ORDER BY z.Id, Month DESC;
```

2. Another 高手的Solution:

```
select E1.id, E1.month, (ifnull(E1.salary,0) +ifnull(E2.salar
y,0) + ifnull(E3.salary,0)) as Salary from

(Select id,max(month) as month from Employee group by id havin
g count(*) > 1) as maxmonth

left Join Employee E1 on (maxmonth.id = E1.id and maxmonth.mon
th > E1.month)

left Join Employee E2 on (E1.id = E2.id and E1.month = E2.mont
h + 1)

left Join Employee E3 on (E1.id = E3.id and E1.month = E3.mont
h + 2)

Order by id ASC, month DESC
```

185

1. 靠自己做出来的第三道Hard:

```
SELECT w.Name AS Department, z.Employee, z.Salary FROM (

SELECT x.DepartmentId, x.Name AS Employee, x.Salary FROM Employee x, Employee y
```

```
WHERE x.DepartmentId = y.DepartmentId AND x.Salary <= y.Sa
lary
    GROUP BY x.Id HAVING COUNT(DISTINCT y.Salary) <= 3
) AS z
JOIN Department AS w ON z.DepartmentId = w.Id
ORDER BY Department, z.Salary DESC</pre>
```

2. Leetcode discussion:

https://leetcode.com/problems/department-top-three-salaries/discuss/

262

1. Ugly solution:

```
SELECT x.Day as Day, ROUND(y.can/x.tot, 2) AS 'Cancellation Ra
te' FROM
(SELECT Request_at AS Day, COUNT(*) AS tot FROM Trips WHERE
Client_Id IN (SELECT Users_Id FROM Users WHERE Banned = 'No')
AND
 Driver_Id IN (SELECT Users_Id FROM Users WHERE Banned = 'No')
AND Request_at BETWEEN '2013-10-01' AND '2013-10-03'
GROUP BY Request at) x
LEFT JOIN
(SELECT Request_at AS Day, SUM(Client_Id NOT IN (SELECT Users
_Id FROM Users WHERE Banned = 'Yes')
AND
Driver_Id NOT IN (SELECT Users_Id FROM Users WHERE Banned =
'Yes')
AND
Status != 'completed') AS can FROM Trips
WHERE Request at BETWEEN '2013-10-01' AND '2013-10-03'
GROUP BY Request_at) y ON x.Day = y.Day
```

- 学习了BETWEEN AND clause:
- WHERE col BETWEEN start_date AND end_date
- 2. Without using JOIN:

```
SELECT Request_at As Day, ROUND(SUM(
Client_Id NOT IN (SELECT Users_Id FROM Users WHERE Banned = 'Y
es')
AND
Driver_Id NOT IN (SELECT Users_Id FROM Users WHERE Banned = 'Y
es')
AND
Status != 'completed') / SUM(
Client_Id NOT IN (SELECT Users_Id FROM Users WHERE Banned = 'Y
es')
AND
Driver_Id NOT IN (SELECT Users_Id FROM Users WHERE Banned = 'Y
es')
), 2) AS 'Cancellation Rate' FROM Trips WHERE Request_at BETWE
EN '2013-10-01' AND '2013-10-03'
GROUP BY Request_at
```