Assignment 2

> DDL: April 10th
>
> DBMS: PostgreSQL

Q1

Which stations on subway line 1 are not in the 'Futian', 'Nanshan', 'Luohu' districts, please output the station number in ascending order and its English name.

地铁一号线上的哪些地铁站不在福田，南山，罗湖区里, 请升序输出车站序号与英文名。

8 rows

	station_id	english_name
1	23	Xin'an
2	24	Bao'an Center
3	25	Bao'an Stadium
4	26	Pingzhou
5	27	Xixiang
6	28	Gushu
7	29	Hourui
8	30	Airport East

Q2

Shenzhen subway lines have many stations that can be interchanged. Please output the station_id, chinese_name, and the pair of subway lines (line_id) of these interchanges. Note that the smaller line_id of the interchange pair comes first, and the larger one comes second. The answers are sorted by station_id in ascending order, and when station_id is the same, they are sorted first by line_id1 in ascending order, and then by line_id2 in ascending order.

深圳地铁线有很多站点可以换乘。请输出所有地铁线中可以换乘的站点的序号和中文名字，以及换乘的地铁线对的序号。注意换乘地铁线对中序号小的在前(line_id1)，序号大的在后(line_id2)。答案按站点的序号升序排序，站点序号相同时先按line_id1升序排序，再按line_id2升序排序。

40 rows

	station_id	chinese_name	line_id1	line_id2
1	3	老街	1	3
2	4	大剧院	1	2
3	4	大剧院	1	11
4	4	大剧院	2	11
5	8	会展中心	1	4
6	9	购物公园	1	3
7	11	车公庙	1	7
8	11	车公庙	1	9
9	11	车公庙	1	11
10	11	车公庙	7	9

Q3

Mark the station with the smallest station_id as the starting station and the station with the largest station_id as the terminal station. For all subway lines with stations, output the line_id, the Chinese names of the starting and terminal stations, the line's color, and its hex code. The answers are sorted by line_id in ascending order.

记station_id最小的站为起点站，station_id最大的站为终点站。请输出所有有站点的地铁线的序号，起始站和终点站的中文名称，线路颜色和它的hex码。按地铁线序号升序排序。

8 rows CSV

	line_id	starting_station	terminal_station	line_color	hex
1	1	罗湖	机场东	Green	#008000
2	2	大剧院	新秀	Orange	#FFA500
3	3	老街	双龙	DeepSkyBlue	#00BFFF
4	4	会展中心	牛湖	Red	#FF0000
5	5	前海湾	怡景	DarkOrchid	#9932CC
6	7	车公庙	文体公园	MediumBlue	#0000CD
7	9	车公庙	文锦	DimGray	#696969
8	11	大剧院	上海宾馆	Purple	#800080

Q4

Find the subway lines ranked 3rd to 5th (dense rank) in terms of the opening time (ignore the null value). For each subway line we find above, find the 5th highest station by the sum of their latitude and longitude (ignore either latitude or longitude is null), output the line_id and station_id, sorted by line_id first then by station_id (in ascending order).

请找出开通时间排名（忽视空值）第3到第5的地铁线路（密集排名 dense rank）。 在这些地铁线路中，找出每一条地铁线里的地铁站纬度与经度之和（经纬度都不为空）排名第5的地铁站（根据行号 row number），输出它们的线路ID和站点ID，先按线路排序后按站点排序（升序）。

4 rows

	line_id	station_id
1	5	137
2	7	158
3	9	182
4	11	46

Q5

For each subway line，calculate those two percentages and round the result to 2 decimal places:

1. The number of stations on each subway line / the total number of stations. (Same stations on different subway lines need to be counted repeatedly)
2. The number of stations on each subway line / the number of stations on the last subway line

The output contains lines_id and those two percentages, ordered by line id (in ascending order).

对于每个地铁线路，计算下列两个百分比，并且四舍五入保留两位小数：

1. 每个地铁线路上地铁站的数量/ 所有地铁站的数量（不同地铁线的相同站点需要重复计数）
2. 每个地铁线路上地铁站的数量/上一个地铁线路上地铁站的数量

最终结果包含line id与两个百分比，并根据line id升序排序

8 rows

	line_id	total_rate	last_rate
1	1	13.57%	*<null>*
2	2	13.12%	96.67%
3	3	13.57%	103.45%
4	4	10.41%	76.67%
5	5	12.22%	117.39%
6	7	13.12%	107.41%
7	9	14.48%	110.34%
8	11	9.50%	65.63%