

DB Ass1

Q1

```
select station_id,english_name,chinese_name,district from stations
where english_name like '%East%'
or english_name like '%South%'
or english_name like '%West%'
or english_name like '%North%'
```

station_id	english_name	chinese_name	district
13	Qiaocheng East	侨城东	Futian
30	Airport East	机场东	Bao'an
39	Airport North	机场北	Bao'an
45	Hongshuwan South	红树湾南	Nanshan
47	Gangxia North	岗厦北	Futian
59	Qiaocheng North	侨城北	Nanshan
64	Xiangmei North	香梅北	Futian
66	Lianhua West	莲花西	Futian
68	Huaqiang North	华强北	Futian
102	Lianhua North	莲花北	Futian
106	Shenzhen North Station	深圳北站	Longhua
112	Qinghu North	清湖北	
124	Honglang North	洪浪北	Bao'an
155	Huaqiang South	华强南	Futian
158	Hongling North	红岭北	Luohu
170	Shenzhen University East	深大东	Nanshan
183	Hongling South	红岭南	Luohu
185	Renmin South	人民南	Luohu

Q2

```
select district,
       round(cast(max(latitude) - min(latitude) as numeric)*111,0) as 南北跨度 km
from stations
where latitude is not null
group by district;
```

	district	南北跨度km
1	Bao'an	27
2	Luohu	6
3	Futian	6
4	Longgang	15
5	Nanshan	13
6	Longhua	8

Q3

```
select 'Station ' || station_id || ' ' || english_name || '(' || chinese_name || ')' in '  
    || district  
from stations  
where station_id between 2 and 10
```

	station_information
1	Station 2 Guomao(国贸) in Luohu
2	Station 3 Laojie(老街) in Luohu
3	Station 4 Grand Theater(大剧院) in Luohu
4	Station 5 Science Museum(科学馆) in Futian
5	Station 6 Huaqiang Rd(华强路) in Futian
6	Station 7 Gangxia(岗厦) in Futian
7	Station 8 Convention and Exhibition Center Station(会展中心) in Futian
8	Station 9 Shopping Park(购物公园) in Futian
9	Station 10 Xiangmihu(香蜜湖) in Futian

Q4

```
select DISTINCT station_id  
from bus_lines  
where bus_line = '103'  
or bus_line = '104'  
order by station_id DESC;
```

station_id
174
150
149
146
144
142
141
127
102
101
81
80
76
73
70
65
64
63
62
59
7
6
4
3

Q5

```
select station_id
from bus_lines b1
join bus_lines b2 using(station_id)
where b1.bus_line = '103'
and b2.bus_line = '104'
order by station_id;
```

	station_id	
1		3
2		4
3		6
4		141

Q6

```
select round(1.0*count(num1034.station_id) / count(num103.station_id),2)
from
    (select DISTINCT station_id from bus_lines where bus_line = '103') as num103
left join
    (select DISTINCT station_id from bus_lines where bus_line = '104') as num1034
using (station_id);
```

	round	
		0.33

Q7

```
select bus_line,count(station_id) as cnt
from bus_lines
group by bus_line
having count(station_id) >= 10
order by cnt DESC;
```

	bus_line	cnt
1	N4	21
2	366	20
3	309	20
4	651	18
5	204	18
6	79	18
7	M268	18
8	113	17
9	223	17
10	383	17
11	303	17
12	101	16
13	338	16
14	104	16
15	Shen-Hui 3A (深惠3A)	16
16	351	15
17	323	15
18	M372	15
19	80	15
20	812	15
21	372	15
22	N6	15
23	202	14
24	26	14
25	369	14
26	123	14
27	M378	13

28	M203	13
29	325	13
30	357	13
31	311	13
32	64	13
33	365	13
34	382	12
35	121	12
36	839	12
37	324	12
38	374	12
39	103	12
40	M433	12
41	M369	12
42	373	12
43	222	12
44	M370	12
45	N14	12
46	326	11
47	M414	11
48	322	11
49	336	11
50	201	11
51	235	11
52	59	11
53	377	11

54	245	11
55	21	11
56	M448	11
57	M266	11
58	54	11
59	K105	11
60	K113	11
61	M359	11
62	215	11
63	38	10
64	203	10
65	M358	10
66	320	10
67	333	10
68	14	10
69	234	10
70	M500	10
71	371	10
72	M447	10
73	N8	10
74	67	10
75	M435	10
76	379	10

Q8

```
select station_id, count(bus_line) as cnt
from bus_lines
group by station_id
having count(bus_line) = (
    select max(cnt)
    from (
        select count(bus_line) as cnt
        from bus_lines
        group by station_id
    ) as t
);
```

station_id	cnt
104	65

Q9

```
select bus_line, count(station_id) as
count
from bus_lines
where bus_line like 'N%'
and (
    bus_line like '%0'
    or bus_line like '%1'
    or bus_line like '%2'
    or bus_line like '%3'
    or bus_line like '%4'
    or bus_line like '%5'
    or bus_line like '%6'
    or bus_line like '%7'
    or bus_line like '%8'
    or bus_line like '%9'
)
group by bus_line
order by count;
```

	bus_line	count
1	N12	3
2	N21	3
3	N2	8
4	N15	5
5	N6	15
6	N9	8
7	N7	6
8	N1	7
9	N14	12
10	N4	21
11	N19	7
12	N24	3
13	N3	7
14	N16	4
15	N8	10
16	N10	7
17	N18	5
18	N25	4
19	N17	3

Q10

```
select bus_line,count(station_id) as cnt,
case
```

```
    when
        bus_line like 'N%'
    and (
        bus_line like '%0'
    or bus_line like '%1'
    or bus_line like '%2'
    or bus_line like '%3'
    or bus_line like '%4'
    or bus_line like '%5'
    or bus_line like '%6'
    or bus_line like '%7'
    or bus_line like '%8'
    or bus_line like '%9'
    ) then '夜班公交'
    when
        bus_line like 'M%'
    and (
        bus_line like '%0'
    or bus_line like '%1'
    or bus_line like '%2'
    or bus_line like '%3'
    or bus_line like '%4'
    or bus_line like '%5'
    or bus_line like '%6'
    or bus_line like '%7'
    or bus_line like '%8'
    or bus_line like '%9'
    ) then '主干线公交'
    else null
end as 备注
from bus_lines
group by bus_line
```

```
having count(station_id) >= 10
```

```
order by cnt DESC;
```

	bus_line ▼	cnt ▼	备注 ▼
1	N4	21	夜班公交
2	366	20	<null>
3	309	20	<null>
4	651	18	<null>
5	204	18	<null>
6	79	18	<null>
7	M268	18	主干线公交
8	113	17	<null>
9	223	17	<null>
10	383	17	<null>
11	303	17	<null>
12	101	16	<null>
13	338	16	<null>
14	104	16	<null>
15	Shen-Hui 3A (深惠3A)	16	<null>
16	351	15	<null>
17	323	15	<null>
18	M372	15	主干线公交
19	80	15	<null>
20	812	15	<null>
21	372	15	<null>
22	N6	15	夜班公交
23	202	14	<null>
24	26	14	<null>
25	369	14	<null>
26	123	14	<null>
27	M378	13	主干线公交
28	M203	13	主干线公交
29	325	13	<null>
30	357	13	<null>
31	311	13	<null>
32	64	13	<null>
33	365	13	<null>
34	382	12	<null>
35	121	12	<null>
36	839	12	<null>
37	324	12	<null>
38	374	12	<null>
39	103	12	<null>
40	M433	12	主干线公交
41	M369	12	主干线公交
42	373	12	<null>
43	222	12	<null>
44	M370	12	主干线公交
45	N14	12	夜班公交
46	326	11	<null>
47	M414	11	主干线公交
48	322	11	<null>
49	336	11	<null>
50	201	11	<null>
51	235	11	<null>
52	59	11	<null>
53	377	11	<null>

54	245	11	<null>
55	21	11	<null>
56	M448	11	主干线公交
57	M266	11	主干线公交
58	54	11	<null>
59	K105	11	<null>
60	K113	11	<null>
61	M359	11	主干线公交
62	215	11	<null>
63	38	10	<null>
64	203	10	<null>
65	M358	10	主干线公交
66	320	10	<null>
67	333	10	<null>
68	14	10	<null>
69	234	10	<null>
70	M500	10	主干线公交
71	371	10	<null>
72	M447	10	主干线公交
73	N8	10	夜班公交
74	67	10	<null>
75	M435	10	主干线公交
76	379	10	<null>