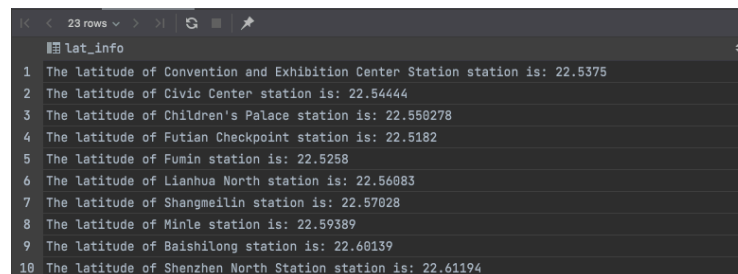


Assignment 3

Q.1

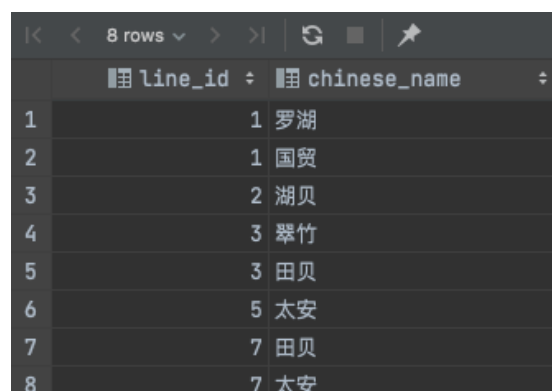
```
1 SELECT (CASE WHEN s.latitude IS NOT NULL THEN
2         'The latitude of ' || s.english_name || ' station is: ' || s.latitude
3         ELSE 'No latitude information for ' || s.english_name || ' station'
4     END) AS lat_info
5 FROM stations s NATURAL RIGHT JOIN line_detail ld
6 WHERE ld.line_id = 4;
```



lat_info
1 The latitude of Convention and Exhibition Center Station station is: 22.5375
2 The latitude of Civic Center station is: 22.54444
3 The latitude of Children's Palace station is: 22.550278
4 The latitude of Futian Checkpoint station is: 22.5182
5 The latitude of Fumin station is: 22.5258
6 The latitude of Lianhua North station is: 22.56083
7 The latitude of Shangmeilin station is: 22.57028
8 The latitude of Minle station is: 22.59389
9 The latitude of Baishilong station is: 22.60139
10 The latitude of Shenzhen North Station station is: 22.61194

Q.2

```
1 WITH bsol AS (
2     SELECT station_id
3     FROM bus_lines
4     WHERE bus_line = '2'
5 )
6 SELECT line_id, chinese_name
7 FROM line_detail
8     NATURAL JOIN bsol
9     NATURAL JOIN stations
10 ORDER BY line_id, station_id;
```



line_id	chinese_name
1	罗湖
2	国贸
3	湖贝
4	翠竹
5	田贝
6	太安
7	田贝
8	太安

Q.3

```

1 WITH ln_st AS (
2     SELECT line_id, COUNT(*) cnt
3     FROM line_detail
4     GROUP BY line_id
5 )
6 SELECT ld.line_id, chinese_name
7 FROM ln_st
8     JOIN line_detail ld ON ld.line_id = ln_st.line_id AND ld.num = 1
9     NATURAL JOIN stations
10 WHERE cnt = (SELECT MAX(cnt) FROM ln_st)
11 ORDER BY ld.line_id;

```

line_id	chinese_name
1	9 航海路

Q.4

```

1 SELECT *
2 FROM ((SELECT opening AS year, 'line ' || line_id || ' opened' AS event
3         FROM lines
4         WHERE opening BETWEEN 2008 AND 2021)
5 UNION
6 (SELECT latest_extension AS year, 'line ' || line_id || ' extended' AS event
7         FROM lines
8         WHERE latest_extension BETWEEN 2008 AND 2021)) e
9 ORDER BY year;

```

	year	event
1	2010	line 3 opened
2	2010	line 2 opened
3	2011	line 3 extended
4	2011	line 5 opened
5	2011	line 4 extended
6	2011	line 1 extended
7	2011	line 2 extended
8	2016	line 11 opened
9	2016	line 9 opened
10	2016	line 7 opened

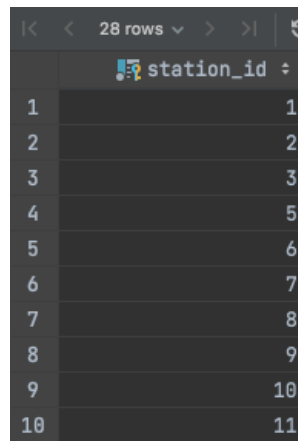
Q.5

```

1 SELECT *
2 FROM ((SELECT station_id FROM line_detail WHERE line_id = 1)
3 EXCEPT

```

```
4      (SELECT station_id FROM line_detail WHERE line_id = 2)) e
5 ORDER BY station_id;
```



	station_id
1	1
2	2
3	3
4	5
5	6
6	7
7	8
8	9
9	10
10	11