

## Case Study Advanced SQL Queries

### Exercise 1 : The Report

Link soal: <https://www.hackerrank.com/challenges/the-report/problem?isFullScreen=true>

#### Tujuan belajar:

Join berdasarkan rentang nilai, pemetaan grade, penggunaan CASE, dan pengurutan multi-kolom.

#### Konsep kunci:

- Join Students dengan Grades memakai BETWEEN pada marks ke min\_mark..max\_mark.
- CASE WHEN grade < 8 THEN NULL ELSE name END.
- ORDER BY grade DESC, name ASC, marks ASC.

#### Langkah disarankan:

- Buat CTE untuk memetakan tiap student ke grade (join rentang).
- Di select final, gunakan CASE untuk menampilkan NULL pada name jika grade < 8.
- Terapkan urutan seperti ketentuan.

Result:

### Congratulations!

You have passed the sample test cases. Click the submit button to run your code against all the test cases.

#### Sample Test case 0

Your Output (stdout)

```
1 Britney 10 95
2 Heraldo 10 94
3 Julia 10 96
4 Kristeen 10 100
5 Stuart 10 99
6 Amina 9 89
7 Christene 9 88
8 Salma 9 81
9 Samantha 9 87
10 Scarlet 9 80
11 Vivek 9 84
12 Aamina 8 77
13 Belvet 8 78
```

### Exercise 2 : Weather Observation Station 18

Link soal: <https://www.hackerrank.com/challenges/weather-observation-station-18/problem?isFullScreen=true>

#### Tujuan belajar:

Agregasi MIN/MAX, manipulasi numerik, format hasil.

#### Konsep kunci:

- Ambil min(lat\_n), min(long\_w), max(lat\_n), max(long\_w).
- Hitung :  
 $|max(lat) - min(lat)| + |max(long) - min(long)|$   
 $|max(lat) - min(lat)| + |max(long) - min(long)|$
- Casting presisi desimal 4 angka.

#### Langkah disarankan:

- Satu CTE untuk menghimpun empat nilai agregat.
- Baris final menghitung jarak Manhattan dan CAST(... AS DECIMAL(10,4)).

Result:

## Congratulations!

You have passed the sample test cases. Click the submit button to run your code against all the test cases.

✓ Sample Test case 0

Your Output (stdout)

1 259.6859

### Exercise 3 : Top Competitors

Link soal: <https://www.hackerrank.com/challenges/full-score/problem?isFullScreen=true>

#### Tujuan belajar:

Join multi-tabel, agregasi per pengguna, dan filter dengan HAVING.

#### Konsep kunci:

- Dapatkan max\_score tiap challenge dari Challenges ↔ Difficulty.
- Hitung jumlah submission yang mencapai max\_score per hacker\_id.
- Ambil hanya yang jumlahnya > 1, lalu join ke Hackers untuk nama.
- Urutkan count\_max\_score DESC, hacker\_id ASC.

#### Langkah disarankan:

- CTE-1: peta challenge\_id → max\_score.
- CTE-2: hitung COUNT(\*) dari Submissions yang score = max\_score per hacker\_id (pakai HAVING > 1).
- CTE-3: join ke Hackers untuk ambil name.
- Select final: hanya hacker\_id, name lalu ORDER BY.

Result:

## Congratulations!

You have passed the sample test cases. Click the submit button to run your code against all the test cases.

✓ Sample Test case 0

Your Output (stdout)

```
1 27232 Phillip
2 28614 Willie
3 15719 Christina
4 43892 Roy
5 14246 David
6 14372 Michelle
7 18330 Lawrence
8 26133 Jacqueline
9 26253 John
10 30128 Brandon
11 35583 Norma
12 13944 Victor
13 17295 Elizabeth
```

## Exercise 4 : Ollivander's Inventory

**Link soal:** <https://www.hackerrank.com/challenges/harry-potter-and-wands/problem?isFullScreen=true>

### Tujuan belajar:

Window function untuk memilih baris biaya minimal per kelompok.

### Konsep kunci:

- Join Wands dengan Wands\_Property untuk atribut age, power, dan is\_evil.
- Saring is\_evil = 0.
- Hitung MIN(coins\_needed) OVER (PARTITION BY age, power) sebagai biaya minimal per kelompok.
- Ambil hanya baris dengan coins\_needed = coins\_min.
- Urutkan power DESC, age DESC.

### Langkah disarankan:

- CTE: hasil join dan kolom coins\_min via window MIN() OVER (PARTITION BY age, power).
- Select final: filter coins\_needed = coins\_min dan urutkan sesuai ketentuan.

Result:

## Congratulations!

You have passed the sample test cases. Click the submit button to run your code against all the test cases.

### Sample Test case 0

Your Output (stdout)

```
1 1038 496 4789 10
2 1130 494 9439 10
3 1315 492 4126 10
4 9 491 7345 10
5 858 483 4352 10
6 1164 481 9831 10
7 1288 464 4952 10
8 861 462 8302 10
9 412 455 5625 10
10 996 451 8884 10
```

## Exercise 5 : Contest Leaderboard

**Link soal:** <https://www.hackerrank.com/challenges/contest-leaderboard/problem?isFullScreen=true>

### Tujuan belajar:

Agregasi bertingkat (max per (hacker, challenge) kemudian sum per hacker), join ke master Hackers, filter skor nol.

### Konsep kunci:

- Agregasi 1: MAX(score) per hacker\_id, challenge\_id.
- Join hasil agregasi ke Hackers untuk nama.
- Agregasi 2: SUM(max\_score\_per\_challenge) per hacker.
- HAVING SUM(...) > 0.
- Urutkan SUM DESC, hacker\_id ASC.

### Langkah disarankan:

- CTE-1: Submissions → MAX(score) per (hacker\_id, challenge\_id).
- CTE-2: join ke Hackers untuk dapat name.
- Select final: SUM(max\_) AS score, GROUP BY hacker\_id, name, HAVING > 0, lalu ORDER BY.

Result:

✓ Sample Test case 0

Your Output (stdout)

```
1 76971 Ashley 760
2 84200 Susan 710
3 76615 Ryan 700
4 82382 Sara 640
5 79034 Marilyn 580
6 78552 Harry 570
7 74064 Helen 540
8 78688 Sean 540
9 83832 Jason 540
10 72796 Jose 510
11 76216 Carlos 510
12 90304 Lillian 500
13 88507 Patrick 490
```