AGGREGATION

1. Samantha was tasked with calculating the average monthly salaries for all employees in the **EMPLOYEES**table, but did not realize her keyboard's  key was broken until after completing the calculation. She wants your help finding the difference between her miscalculation (using salaries with any zeroes removed), and the actual average salary.

Write a query calculating the amount of error (i.e.:  average monthly salaries), and round it up to the next integer.

**select CEIL(AVG(salary)-AVG(replace(Salary,'0','')))**

**from employees;**

1. We define an employee's total earnings to be their monthly  worked, and the maximum total earnings to be the maximum total earnings for any employee in the **Employee** table. Write a query to find the maximum total earnings for all employees as well as the total number of employees who have maximum total earnings. Then print these values as  space-separated integers.

**select (salary\*months) AS earnings,count(\*)**

**from employee**

**group by earnings**

**order by earnings DESC**

**Limit 1;**

1. Query the following two values from the **STATION** table:

The sum of all values in *LAT\_N* rounded to a scale of  decimal places.

The sum of all values in *LONG\_W* rounded to a scale of  decimal places.

**select ROUND(sum(LAT\_N),2),ROUND(sum(LONG\_W),2)**

**from station;**

1. Query the Western Longitude (LONG\_W) for the largest Northern Latitude (LAT\_N) in **STATION** that is less than . Round your answer to  decimal places.

**select ROUND (LONG\_W,4)**

**from STATION**

**where LAT\_N < 137.2345**

**order by LAT\_N DESC**

**LIMIT 1;**

1. Consider P1(a,b)  and P2(c,d)  to be two points on a *2D* plane.

* happens to equal the minimum value in *Northern Latitude* (*LAT\_N* in **STATION**).
* happens to equal the minimum value in *Western Longitude* (*LONG\_W* in **STATION**).
* happens to equal the maximum value in *Northern Latitude* (*LAT\_N* in **STATION**).
* happens to equal the maximum value in *Western Longitude* (*LONG\_W* in **STATION**).

Query the [Manhattan Distance](https://xlinux.nist.gov/dads/HTML/manhattanDistance.html) between points P1 and P2 and round it to a scale of  decimal places.

**select ROUND(ABS(MAX(LAT\_N)-MIN(LAT\_N))+ABS(MAX(LONG\_W)- MIN(LONG\_W)),4)**

**from station;**