Sql Case Study(Data Science Job Salaries 2024)

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About the data:

work_year : The year the salary was paid.
experience_level : The experience level in the job during the year with the following possible values: EN Entry-level / Junior MI Mid-level / Intermediate SE Senior-level / Expert EX **Executive**-level / Director
employment_type : The type of employement for the role: PT Part-time FT Full-time CT Contract FL Freelance
job_title : The role worked in during the year.
salary : The total gross salary amount paid.
salary_currency : The currency of the salary paid as an ISO 4217 currency code.
salary_in_usd : The salary in USD (FX rate divided by avg. USD rate for the respective year via fxdata.foorilla.com).
employee_residence : Employee's primary country of residence in during the work year as an ISO 3166 country code.
remote_ratio : The overall amount of work done remotely, possible values are as follows: 0 No remote work (less than 20%) 50 Partially remote 100 Fully remote (more than 80%)
company_location : The country of the employer's main office or contracting branch as an ISO 3166 country code.
company_size : The average number of people that worked for the company during the year: S less than 50 employees (small) M 50 to 250 employees (medium) L more than 250 employees (large)

I have some of the questions below so I will solve one by one question. I am using Microsoft SQL server studio:

1. You're a Compensation analyst employed by a multinational corporation. Your Assignment is to Pinpoint Countries who give work fully remotely, for the title 'managers' Paying salaries Exceeding $90,000 USD
2. AS a remote work advocate Working for a progressive HR tech startup who place their freshers' clients IN large tech firms. you're tasked WITH Identifying top 5 Country Having greatest count of large (company size) number of companies.
3. Picture yourself AS a data scientist Working for a workforce management platform. Your objective is to calculate the percentage of employees. Who enjoy fully remote roles WITH salaries Exceeding $100,000 USD, Shedding light ON the attractiveness of high-paying remote positions IN today's job market.
4. Imagine you're a data analyst Working for a global recruitment agency. Your Task is to identify the Locations where entry-level average salaries exceed the average salary for that job title IN market for entry level, helping your agency guide candidates towards lucrative opportunities.
5. You've been hired by a big HR Consultancy to look at how much people get paid IN different Countries. Your job is to Find out for each job title which. Country pays the maximum average salary. This helps you to place your candidates IN those countries.
6. AS a data-driven Business consultant, you've been hired by a multinational corporation to analyze salary trends across different company Locations. Your goal is to Pinpoint Locations WHERE the average salary Has consistently Increased over the Past few years (Countries WHERE data is available for 3 years Only(present year and past two years) providing Insights into Locations experiencing Sustained salary growth.
7. Picture yourself AS a workforce strategist employed by a global HR tech startup. Your Mission is to Determine the percentage of fully remote work for each experience level IN 2021 and compare it WITH the corresponding figures for 2024, Highlighting any significant Increases or decreases IN remote work Adoption over the years.
8. AS a Compensation specialist at a Fortune 500 company, you're tasked WITH analyzing salary trends over time. Your objective is to calculate the average salary increase percentage for each experience level and job title between the years 2023 and 2024, helping the company stay competitive IN the talent market.
9. You are working with a consultancy firm, your client comes to you with certain data and preferences such as (their year of experience , their employment type, company location and company size) and want to make an transaction into different domain in data industry (like a person is working as a data analyst and want to move to some other domain such as data science or data engineering etc.) your work is to guide them to which domain they should switch to base on the input they provided, so that they can now update their knowledge as per the suggestion/.. The Suggestion should be based on average salary.

Question 1-:

You're a Compensation analyst employed by a multinational corporation. Your Assignment is to Pinpoint Countries who give work fully remotely, for the title 'managers' Paying salaries Exceeding $90,000 USD

Sql query:

```
select distinct company_location  from salaries
where job_title like '%Manager%'  and remote_ratio=100 and salary_in_usd >90000
```

Question 2-:

AS a remote work advocate Working for a progressive HR tech startup who place their freshers' clients IN large tech firms. you're tasked WITH Identifying top 5 Country Having greatest count of large (company size) number of companies.

Sql query:

```
select top 5 company_location,count(company_location)as total  from salaries
where company_size='L' and experience_level='EN'
group by company_location
order by count(company_location) desc
```

Question 3-:

Picture yourself AS a data scientist Working for a workforce management platform. Your objective is to calculate the percentage of employees. Who enjoy fully remote roles WITH salaries Exceeding $100,000 USD, Shedding light ON the attractiveness of high-paying remote positions IN today's job market.

Sql query:

```
with t1 as (
   select count(*) as remote_work
   from salaries
   where remote_ratio = 100 and salary_in_usd > 100000
),
t2 as (
   select count(*) as total
   from salaries
)
select remote_work * 100.0 / total as percentage_remote_work
from t1, t2;
```

Question 4-:

Imagine you're a data analyst Working for a global recruitment agency. Your Task is to identify the Locations where entry-level average salaries exceed the average salary for that job title IN market for entry level, helping your agency guide candidates towards lucrative opportunities.

Sql query:

```
with t1 as (
   select job_title, avg(salary) as market_avg_salary
   from salaries
   group by job_title
),

t2 as (
   select company_location, job_title, avg(salary) as job_avg_salary
   from salaries
   group by job_title, company_location
)

select t1.job_title, company_location, market_avg_salary, job_avg_salary
from t1
join t2 on t1.job_title = t2.job_title
where market_avg_salary > job_avg_salary;
```

Question 5-:

You've been hired by a big HR Consultancy to look at how much people get paid IN different Countries. Your job is to Find out for each job title which. Country pays the maximum average salary. This helps you to place your candidates IN those countries.

Sql query:

```
with main as(
            select *
            ,row_number()over(partition by x.company_location,x.job_title order by x.avg_sal)as rn
            from(
                  select company_location,job_title,avg(salary)as avg_sal
                  from salaries
                  group by company_location,job_title)x)
select * from main
where rn=1
and job_title='Admin & Data Analyst';
```

Question 6-:

AS a data-driven Business consultant, you've been hired by a multinational corporation to analyze salary trends across different company Locations. Your goal is to Pinpoint Locations WHERE the average salary Has consistently Increased over the Past few years (Countries WHERE data is available for 3 years Only(present year and past two years) providing Insights into Locations experiencing Sustained salary growth.

Sql query:

```
with sal_21 as(
        select company_location,avg(salary)as avg_sal_2021 from salaries
        where work_year='2021'
        group by  company_location),

    sal_22 as(
        select company_location,avg(salary)as avg_sal_2022 from salaries
        where work_year='2022'
        group by  company_location),

    sal_23 as(
        select company_location,avg(salary)as avg_sal_2023 from salaries
        where work_year='2023'
        group by  company_location)

select sal_21.company_location,avg_sal_2021,
          avg_sal_2022,avg_sal_2023

from sal_21
join sal_22 on sal_21.company_location =sal_22.company_location
join sal_23 on sal_21.company_location =sal_23.company_location
where avg_sal_2023>avg_sal_2022 and avg_sal_2022>avg_sal_2021
```

Question 7-:

Picture yourself AS a workforce strategist employed by a global HR tech startup. Your Mission is to Determine the percentage of fully remote work for each experience level IN 2021 and compare it WITH the corresponding figures for 2024, Highlighting any significant Increases or decreases IN remote work Adoption over the years.

Sql query:

```
with per_21_exp as(
        select experience_level,count(experience_level)as ex_21 from salaries
        where work_year='2021' and remote_ratio=100
        group by experience_level),
    per_21_total as(
        select experience_level,count(experience_level)as total_21 from salaries
        where work_year='2021'
        group by experience_level),

    per_24_exp as(
            select experience_level,count(experience_level)as ex_24 from salaries
            where work_year='2024' and remote_ratio=100
            group by experience_level),
    per_24_total as(
        select experience_level,count(experience_level)as total_24 from salaries
        where work_year='2024'
        group by experience_level)

select per_21_exp.experience_level,
      (ex_21*100/total_21) as percentage_21,
      (ex_24*100/total_24) as percentage_24
from per_21_exp
join per_21_total on per_21_exp.experience_level=per_21_total.experience_level
join per_24_exp   on per_21_exp.experience_level=per_24_exp.experience_level
join per_24_total on per_21_exp.experience_level=per_24_total.experience_level
```

Question 8-:

AS a Compensation specialist at a Fortune 500 company, you're tasked WITH analyzing salary trends over time. Your objective is to calculate the average salary increase percentage for each experience level and job title between the years 2023 and 2024, helping the company stay competitive IN the talent market.

Sql query:

```
with exp_23 as(
                select experience_level,job_title,avg(salary)as avg_sal_23 from salaries
                where work_year='2023'
                group by experience_level,job_title),
        exp_24 as(
                select experience_level,job_title,avg(salary)as avg_sal_24 from salaries
                where work_year='2024'
                group by experience_level,job_title)
select exp_23.experience_level,exp_23.job_title,
          avg_sal_23,avg_sal_24
from exp_23
join exp_24 on exp_23.experience_level=exp_24.experience_level
                        and exp_23.job_title=exp_24.job_title
where avg_sal_24>avg_sal_23
```

Question 9-:

You are working with a consultancy firm, your client comes to you with certain data and preferences such as (their year of experience , their employment type, company location and company size) and want to make an transaction into different domain in data industry (like a person is working as a data analyst and want to move to some other domain such as data science or data engineering etc.) your work is to guide them to which domain they should switch to base on the input they provided, so that they can now update their knowledge as per the suggestion/.. The Suggestion should be based on average salary

Sql query:

```
with domain_avg_salary as (
   select
      job_title,
      avg(salary_in_usd) as avg_salary
   from
      salaries
   where
      work_year = '2024'
      and experience_level = 'SE'
      and employment_type = 'FT'
      and company_location = 'US'
   group by
      job_title
)
select top 1
   job_title,
   avg_salary
from
   domain_avg_salary
order by
   avg_salary desc
```