

/*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*/

```
SELECT DISTINCT(company_location) FROM salaries
WHERE remote_ratio = 100
AND job_title LIKE '%manager%'
AND salary_in_usd >= 90000;
```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
	company_location			
▶	US			
	MX			
	AU			
	FR			

/*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.*/

```
SELECT company_location, COUNT(company_size) AS 'Large Company Count' FROM
(SELECT * FROM salaries
WHERE experience_level='EN'
AND company_size = 'L') AS Fresher_table
GROUP BY company_location
ORDER BY COUNT(company_size) DESC
LIMIT 5;
```

Result Grid			Filter Rows:	Export:	Wrap Cell Content:	Fetch rows:
	company_location	Large Company Count				
▶	US	53				
	DE	10				
	CA	10				
	GB	8				
	IN	6				

/*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.*/

```
SET @Count = (SELECT COUNT(*) FROM salaries WHERE salary >= 100000);
```

```
SET @Remote = (SELECT COUNT(*) FROM salaries WHERE salary >= 100000  
AND remote_ratio = 100);
```

```
SET @Percentage = ROUND((SELECT @Remote/(SELECT @Count))*100,2);
```

```
SELECT @Percentage AS 'High Paying Remote(>100000$)';
```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
	High Paying Remote(>100000\$)			
▶	32.39			

```

/*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 countries.*/

SELECT company_location,t.job_title,avg_salary,avg_salary_country FROM (
SELECT company_location,job_title,ROUND(AVG(salary_in_usd),2) AS avg_salary_country
FROM salaries
WHERE experience_level = 'EN'
GROUP BY job_title,company_location
) AS t
INNER JOIN (
SELECT job_title,ROUND(AVG(salary_in_usd),2) AS avg_salary
FROM salaries
WHERE experience_level = 'EN'
GROUP BY job_title ) AS m
ON t.job_title = m.job_title
WHERE avg_salary > avg_salary_country;

```

<div>Result Grid</div> <div>    </div>				
	company_location	job_title	avg_salary	avg_salary_country
▶	LT	Data Analyst	84808.64	39268.75
	GB	Data Scientist	87028.37	65599.14
	GB	Data Analyst	84808.64	54139.47
	TR	ML Engineer	81663.17	27000.00
	MX	Data Engineer	92713.47	17598.00
	MX	Big Data Engineer	58457.00	17600.00

/*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.*/

```
SELECT job_title,avg_salary FROM
(SELECT job_title,avg_salary,DENSE_RANK() OVER
(PARTITION BY job_title ORDER BY avg_salary DESC) AS max_salary_rank
FROM (
SELECT job_title,company_location,ROUND(AVG(salary_in_usd),2) AS avg_salary
FROM salaries GROUP BY company_location,job_title) AS t)AS m
WHERE max_salary_rank = 1;
```

	job_title	avg_salary
▶	Admin & Data Analyst	60000.00
	AI Architect	800000.00
	AI Developer	275000.00
	AI Engineer	300000.00
	AI Product Manager	152650.00
	AI Programmer	120000.00
	AI Research Engineer	175000.00

/*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(this and past two years) providing alter into locations experiencing sustained salary growth.*/

```
WITH CTE AS (  
SELECT * FROM salaries WHERE company_location IN(  
SELECT company_location FROM (  
SELECT company_location,ROUND(AVG(salary_in_usd),2) AS avg_salary,  
COUNT(DISTINCT work_year) AS cnt  
FROM salaries  
WHERE work_year > YEAR(CURRENT_DATE()) - 3  
GROUP BY company_location  
HAVING cnt = 3)t))  
SELECT company_location,  
MAX(CASE WHEN work_year = 2022 THEN average END) AS avg_salary_2022,  
MAX(CASE WHEN work_year = 2023 THEN average END) AS avg_salary_2023,  
MAX(CASE WHEN work_year = 2024 THEN average END) AS avg_salary_2024  
FROM(  
SELECT company_location,work_year,AVG(salary_in_usd) AS average  
FROM CTE  
GROUP BY company_location,work_year)m  
GROUP BY company_location  
HAVING avg_salary_2024 > avg_salary_2023 AND avg_salary_2023 > avg_salary_2022;
```

	company_location	avg_salary_2022	avg_salary_2023	avg_salary_2024
►	CA	126009.5526	150724.1414	153611.8077
	ES	47997.3415	60327.9857	72184.6667
	FI	63040.0000	71259.0000	77777.0000
	FR	72684.4667	100411.1905	101370.1667
	PT	48921.3750	51521.0000	53054.7500
	AR	50000.0000	65000.0000	88500.0000
	IN	37328.3333	47777.5217	71538.3333
	HU	17684.0000	43000.0000	63333.0000

/* 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.*/

```
WITH CTE1 AS
(SELECT a.experience_level, total_remote ,total_2021, ROUND((((total_remote)/total_2021)*100),2)
AS '2021 remote %' FROM
(SELECT experience_level, COUNT(experience_level) AS total_remote
FROM salaries
WHERE work_year=2021 AND remote_ratio = 100
GROUP BY experience_level
)a
INNER JOIN(
SELECT experience_level, COUNT(experience_level) AS total_2021
FROM salaries
WHERE work_year=2021
GROUP BY experience_level)b
ON a.experience_level= b.experience_level),
CTE2 AS
(SELECT a.experience_level, total_remote ,total_2021, ROUND((((total_remote)/total_2021)*100),2)
AS '2021 remote %' FROM
(SELECT experience_level, COUNT(experience_level) AS total_remote
FROM salaries
WHERE work_year=2021 AND remote_ratio = 100
GROUP BY experience_level
)a
INNER JOIN(
SELECT experience_level, COUNT(experience_level) AS total_2021
FROM salaries
WHERE work_year=2024
GROUP BY experience_level)b
ON a.experience_level= b.experience_level)
SELECT * FROM CTE1 INNER JOIN CTE2 ON CTE1.experience_level = CTE2.experience_level;
```

	experience_level	total_remote	total_2021	2021 remote %	experience_level	total_remote	total_2021	2021 remote %
►	SE	44	75	58.67	SE	44	1920	2.29
	MI	45	87	51.72	MI	45	1102	4.08
	EN	22	46	47.83	EN	22	381	5.77
	EX	5	10	50.00	EX	5	106	4.72

/* 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.*/

WITH CTE AS

(SELECT experience_level, job_title, work_year, ROUND(AVG(salary_in_usd), 2) AS avg_salary
FROM salaries
WHERE work_year >= YEAR(CURRENT_DATE())-1
GROUP BY experience_level, job_title, work_year)

SELECT *, round((((avg_salary_2024-avg_salary_2023)/avg_salary_2023)*100), 2) AS changes
FROM(
SELECT experience_level, job_title,
MAX(CASE WHEN work_year = 2024 THEN avg_salary END) AS avg_salary_2024,
MAX(CASE WHEN work_year = 2023 THEN avg_salary END) AS avg_salary_2023
FROM CTE
GROUP BY experience_level, job_title)t
WHERE (((AVG_salary_2024-AVG_salary_2023)/AVG_salary_2023)*100) IS NOT NULL;

	experience_level	job_title	avg_salary_2024	avg_salary_2023	changes
►	SE	AI Engineer	180068.57	172245.94	4.54
	SE	Machine Learning Engineer	206863.44	196167.59	5.45
	MI	Business Intelligence Developer	83385.63	84032.00	-0.77
	SE	Data Engineer	161949.40	158309.32	2.30
	SE	Data Scientist	160234.25	173480.98	-7.64
	SE	Cloud Database Engineer	136437.50	141666.67	-3.69
	MI	Data Engineer	125574.88	124952.02	0.50

/* 9. You are working with an 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 thier knowledge as per the suggestion/..the suggestion should be based on average salary.*/

DELIMITER //

CREATE PROCEDURE GetAverageSalary(IN exp_lev VARCHAR(2), IN emp_type VARCHAR(3), IN comp_loc VARCHAR(2), IN comp_size VARCHAR(2))

BEGIN

SELECT job_title, experience_level, company_location, company_size, employment_type, ROUND(AVG(salary), 2) AS avg_salary
FROM salaries

WHERE experience_level = exp_lev AND company_location = comp_loc AND company_size = comp_size AND employment_type = emp_type
GROUP BY experience_level, employment_type, company_location, company_size, job_title order by avg_salary desc ;

END//

DELIMITER ;

CALL GetAverageSalary('EN', 'FT', 'AU', 'M');

DROP PROCEDURE Getaveragesalary;

	job_title	experience_level	company_location	company_size	employment_type	avg_salary
▶	Data Scientist	EN	AU	M	FT	120000.00
	Business Intelligence Analyst	EN	AU	M	FT	91000.00
	AI Programmer	EN	AU	M	FT	40000.00
	Machine Learning Developer	EN	AU	M	FT	40000.00
	Data Analyst	EN	AU	M	FT	36276.50

/*11.Imagine you are a talent acquisition specialist working for an international recruitment agency. Your task is to identify the top 3 job titles that command the highest average salary among part-time positions in the year 2023.*/

- ```
SELECT job_title,ROUND(AVG(salary_in_usd),2) AS avg_salary
FROM salaries
WHERE employment_type = 'PT'
AND work_year = 2023
GROUP BY job_title
ORDER By avg_salary DESC
LIMIT 3;
```

|   | job_title      | avg_salary |
|---|----------------|------------|
| ► | Data Scientist | 95650.00   |
|   | Data Analyst   | 18160.00   |

/\*12.As a database analyst you have been assigned the task to select countries where average mid-level salary is higher than overall mid-level salary for the year 2023.\*/

- ```
SET @average = (SELECT ROUND(AVG(salary_in_usd),2) AS 'Mid Level(avg_salary)'
FROM salaries
WHERE experience_level= 'MI'
AND work_year = 2023);
```
- ```
SELECT company_location,ROUND(AVG(salary_in_usd), 2) AS avg_salary
FROM salaries
WHERE experience_level = 'MI'
GROUP BY company_location
HAVING avg_salary > @average;
```

|   | company_location | avg_salary |
|---|------------------|------------|
| ▶ | US               | 135521.12  |
|   | CA               | 127300.03  |
|   | AU               | 144658.13  |
|   | EG               | 124642.86  |
|   | NZ               | 125000.00  |
|   | QA               | 300000.00  |
|   | SA               | 134999.00  |



```

/*13. You're a financial analyst working for a leading HR consultancy, and your task is to assess the annual salary growth rate
for various job titles.By calculating the percentage increase in salary from previous year to this year, you aim to provide
valuable insights into salary trends within different job roles.*/

WITH CTE AS(
 SELECT m.job_title,avg_salary_2023,avg_salary_2024 FROM
 (SELECT job_title,ROUND(AVG(salary_in_usd),2) AS avg_salary_2023
 FROM salaries
 WHERE work_year = 2023
 GROUP BY job_title)t
 INNER JOIN
 (SELECT job_title,ROUND(AVG(salary_in_usd),2) AS avg_salary_2024
 FROM salaries
 WHERE work_year = 2024
 GROUP BY job_title)m
 ON t.job_title = m.job_title)

SELECT *,ROUND((((avg_salary_2024-avg_salary_2023)/avg_salary_2023)*100),2) AS percentage_change
FROM CTE;

```

| job_title                       | avg_salary_2023 | avg_salary_2024 | percentage_change |
|---------------------------------|-----------------|-----------------|-------------------|
| Machine Learning Research En... | 81912.00        | 80769.00        | -1.40             |
| Data Infrastructure Engineer    | 201375.42       | 225205.00       | 11.83             |
| Data Analytics Lead             | 89011.00        | 226525.00       | 154.49            |
| Business Intelligence Manager   | 126750.00       | 161100.00       | 27.10             |
| Data Analytics Manager          | 148677.90       | 100501.55       | -32.40            |
| Data Developer                  | 101242.90       | 97833.33        | -3.37             |
| AI Research Engineer            | 70117.00        | 131666.50       | 87.78             |
| Data Analytics Specialist       | 95000.00        | 94872.25        | -0.13             |
| ETL Developer                   | 122460.00       | 97975.00        | -19.99            |
| Data Science Engineer           | 154705.69       | 138333.33       | -10.58            |
| Big Data Engineer               | 89292.50        | 17600.00        | -80.29            |
| Data Modeler                    | 131514.43       | 128528.57       | -2.27             |

/\*14. You've been hired by a global HR consultancy to identify countries experiencing significant salary growth for entry-level roles. Your task is to list the top three countries with the highest salary growth rate from 2020 to 2023, helping multinational corporations identify emerging talent markets.\*/

```
WITH t AS(
 SELECT company_location, work_year, AVG(salary_in_usd) AS average
 FROM salaries
 WHERE experience_level = 'EN'
 AND (work_year = 2021 OR work_year = 2023)
 GROUP BY company_location, work_year)
SELECT *, (((AVG_salary_2023 - AVG_salary_2021) / AVG_salary_2021) * 100) AS changes
FROM(
 SELECT company_location,
 MAX(CASE WHEN work_year = 2021 THEN average END) AS AVG_salary_2021,
 MAX(CASE WHEN work_year = 2023 THEN average END) AS AVG_salary_2023
 FROM t
 GROUP BY company_location
)a
WHERE (((AVG_salary_2023 - AVG_salary_2021) / AVG_salary_2021) * 100) IS NOT NULL
ORDER BY (((AVG_salary_2023 - AVG_salary_2021) / AVG_salary_2021) * 100) DESC
LIMIT 3;
```

|   | company_location | AVG_salary_2021 | AVG_salary_2023 | changes     |
|---|------------------|-----------------|-----------------|-------------|
| ▶ | AU               | 42028.0000      | 53089.3333      | 26.31896188 |
|   | US               | 88617.6471      | 101592.8575     | 14.64179069 |
|   | IN               | 24407.1667      | 27344.1667      | 12.03335084 |

/\*15. You have been hired by a market research agency where you been assigned the task to show the percentage of different employment type (full time, part time) in different job roles, in the format where each row will be job title, each column will be type of employment type and cell value for that row and column will show the % value\*/

```
SELECT job_title,
 ROUND((SUM(CASE WHEN employment_type = 'PT' THEN 1 ELSE 0 END) / COUNT(*)) * 100, 2) AS PT_percentage,
 ROUND((SUM(CASE WHEN employment_type = 'FT' THEN 1 ELSE 0 END) / COUNT(*)) * 100, 2) AS FT_percentage,
 ROUND((SUM(CASE WHEN employment_type = 'CT' THEN 1 ELSE 0 END) / COUNT(*)) * 100, 2) AS CT_percentage,
 ROUND((SUM(CASE WHEN employment_type = 'FL' THEN 1 ELSE 0 END) / COUNT(*)) * 100, 2) AS FL_percentage
FROM salaries
GROUP BY job_title;
```

|   | job_title                       | PT_percentage | FT_percentage | CT_percentage | FL_percentage |
|---|---------------------------------|---------------|---------------|---------------|---------------|
| ▶ | AI Engineer                     | 0.00          | 98.88         | 1.12          | 0.00          |
|   | Machine Learning Engineer       | 0.00          | 99.80         | 0.14          | 0.07          |
|   | Business Intelligence Developer | 0.00          | 100.00        | 0.00          | 0.00          |
|   | Data Engineer                   | 0.13          | 99.83         | 0.00          | 0.03          |
|   | Data Scientist                  | 0.24          | 99.65         | 0.07          | 0.03          |
|   | Cloud Database Engineer         | 0.00          | 100.00        | 0.00          | 0.00          |
|   | Research Engineer               | 0.00          | 100.00        | 0.00          | 0.00          |
|   | Data Analyst                    | 0.29          | 99.66         | 0.05          | 0.00          |
|   | Machine Learning Scientist      | 0.00          | 100.00        | 0.00          | 0.00          |
|   | Applied Scientist               | 0.00          | 100.00        | 0.00          | 0.00          |
|   | Data Science Manager            | 0.00          | 100.00        | 0.00          | 0.00          |
|   | Research Scientist              | 0.00          | 100.00        | 0.00          | 0.00          |
|   | Prompt Engineer                 | 0.00          | 100.00        | 0.00          | 0.00          |
|   | Data Science                    | 0.58          | 99.42         | 0.00          | 0.00          |
|   | Data Science Consultant         | 0.00          | 98.63         | 0.00          | 1.37          |
|   | Data Management Analyst         | 0.00          | 100.00        | 0.00          | 0.00          |
|   | Research Analyst                | 0.00          | 100.00        | 0.00          | 0.00          |
|   | Data Operations Analyst         | 0.00          | 100.00        | 0.00          | 0.00          |