SQL Project
(Data Science Job Salaries)

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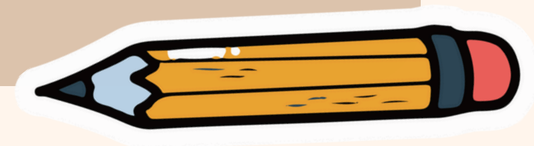
Case Study

The company wants to conduct a comprehensive analysis of salary patterns of data analyst employees in their industry, as well as understand how factors such as experience level, job type, and company characteristics affect employee salaries.



Dataset Information

Column Name	Description
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 / ‘MI’ Mid-level / ‘SE’ Senior-level / ‘EX’ Executive-level
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

Dataset Information

Column Name	Description
salary_in_usd	The salary in USD
employee_residence	Employee’s primary country of residence in during the work year
remote_ratio	The overall amount of work done remotely, possible values are as follow
company_location	The country of the employer’s main office or contracting branch
company_size	The average number of people that worked for the company during the year

Question 1.

Is there any data that is Null?

Answer:

No data Null

```sql
SELECT *
FROM ds_salaries
WHERE work_year IS NULL
OR experience_level IS NULL
OR employment_type IS NULL
OR job_title IS NULL
OR salary IS NULL
OR salary_currency IS NULL
OR salary_in_usd IS NULL
OR employee_residence IS NULL
OR remote_ratio IS NULL
OR company_location IS NULL
OR company_size IS NULL;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

MyUnknownColumn	work_year	experience_level	employment_type	job_title	salary	salary_currency	salary_in_usd	employee_residence	remote_ratio	company_location	company_size

Question 2.
Look at what job title there are?

```
SELECT DISTINCT job_title
FROM ds_salaries
ORDER BY job_title;
```

Answer:

job_title
3D Computer Vision Researcher
AI Scientist
Analytics Engineer
Applied Data Scientist
Applied Machine Learning Scientist
BI Data Analyst
Big Data Architect
Big Data Engineer
Business Data Analyst
Cloud Data Engineer
Computer Vision Engineer
Computer Vision Software Engineer
Data Analyst
Data Analytics Engineer
Data Analytics Lead

Question 3.

What job title are related to Data Analyst?

```
SELECT DISTINCT job_title
FROM ds_salaries
WHERE job_title LIKE '%DATA ANALYST%'
ORDER BY job_title;
```

Answer:

job_title
BI Data Analyst
Business Data Analyst
Data Analyst
Finance Data Analyst
Financial Data Analyst
Lead Data Analyst
Marketing Data Analyst
Principal Data Analyst
Product Data Analyst

Question 4.

What is the average salary of a Data Analyst?

```
SELECT (AVG(salary_in_usd) * 16000) / 12 AS avg_sal_rp_monthly FROM ds_salaries;
```

Answer:

Rp 149,730,493.13 / month

avg_sal_rp_monthly
149730493.13563976

Question 4.1

What is the average salary of a Data Analyst based on experience level?

```
SELECT experience_level,
    (AVG(salary_in_usd) * 16000) / 12 AS avg_sal_rp_monthly
FROM ds_salaries
GROUP BY experience_level;
```

experience_level	avg_sal_rp_monthly
MI	117328075.11737089
SE	184823057.14285716
EN	82191090.90909092
EX	265856051.2820513

Answer:

Entry-level (EN) Rp 82,191,091 / month

Mid-level (MI) Rp 149,730,493 / month

Senior-level (SE) Rp 184,823,057 / month

Executive-level (EX) Rp 265,856,051 / month

Question 4.2.
What is the average salary of a Data Analyst based on experience level and type of employment?

```
SELECT experience_level,
    employment_type,
    (AVG(salary_in_usd) * 16000) / 12 AS avg_sal_rp_monthly
FROM ds_salaries
GROUP BY experience_level,
    employment_type
ORDER BY experience_level, employment_type; #Orderby untuk merapihkan
```

Answer:

experience_level	employment_type	avg_sal_rp_monthly
EN	CT	87916666.66666667
EN	FT	85943274.26160337
EN	PT	38209142.85714286
EX	CT	554666666.6666666
EX	FT	254303626.66666666
MI	CT	360000000
MI	FL	58666666.666666664
MI	FT	117870893.20388348
MI	PT	57825333.333333336
SE	CT	140000000
SE	FL	80000000
SE	FT	185361352.5179856

Question 5.
Country with attractive salaries for Data Analyst position, full-time, experience level ‘MI’ & ‘EN’?

```
SELECT company_location,
    AVG(salary_in_usd) AS avg_sal_in_usd
FROM ds_salaries
WHERE job_title LIKE '%DATA ANALYST%'
    AND employment_type = 'FT'
    AND experience_level IN ('MI', 'EN') #In untuk menampilkan 2 nilai atau lebih
GROUP BY company_location
HAVING avg_sal_in_usd > 20000; #Having untuk memfilter
```

Answer:

company_location	avg_sal_in_usd
US	101397.20689655172
FR	52930.5
GB	50875.6
LU	59102
ES	38470
GR	32313.333333333332
CA	70818.66666666667

Question 6.

In which year, the salary increase from mid to senior has the highest increase? (for job related to ‘FT’ Data Analyst

Answer:

work_year	sal_in_usd_ex	sal_in_usd_mi	differences
2020	NULL	60728.875	NULL
2021	150000	108398.81818181818	41601.18181818182
2022	120000	68970.59090909091	51029.40909090909

```sql
WITH ds_1 AS (
    SELECT work_year,
        AVG(salary_in_usd) AS sal_in_usd_ex
    FROM ds_salaries
    WHERE
        employment_type = 'FT'
        AND experience_level = 'EX'
        AND job_title LIKE '%DATA ANALYST%'
    GROUP BY work_year
), ds_2 AS (
    SELECT work_year,
        AVG(salary_in_usd) AS sal_in_usd_mi
    FROM ds_salaries
    WHERE
        employment_type = 'FT'
        AND experience_level = 'MI'
        AND job_title LIKE '%DATA ANALYST%'
    GROUP BY work_year
), t_year AS (
    SELECT DISTINCT work_year
    FROM ds_salaries
) SELECT t_year.work_year,
    ds_1.sal_in_usd_ex,
    ds_2.sal_in_usd_mi,
    ds_1.sal_in_usd_ex - ds_2.sal_in_usd_mi AS differences
FROM t_year
LEFT JOIN ds_1 ON ds_1.work_year = t_year.work_year
LEFT JOIN ds_2 ON ds_2.work_year = t_year.work_year;
```

Terima Kasih!

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