**Project Plan for Data Jobs Salary**

1. Scoping the project

Define business challenges

Develop hypotheses

Define data metrics

Propose solution

Mock up solution

Propose pilot design to measure impact

Problem statement and create dashboard

1. Acquire Data

Identify data source and gain access

**Scope - plan the project**

**Design - create a blueprint of the project**

**Prepare - clean the data**

**Test - run data validation checks on the data**

**Visualize - create graphs and charts with the data**

**Analyse - explore the insights from the data**

**Recommend - provide options to the user and back them up with data**

**Dirty data:**

1. **Duplicate records**
2. **Inconstant format**
3. **Missing values on nulls**
4. **Inaccurate information**

I’m struggling to come up with a data project out if this data set. Help me simulate a problem statement and create a dashboard out it.

**Scoping the project**

‘*Our organisation lacks a comprehensive understanding of salary disparities and the factors influencing them, such as job title, experience level, remote work, geographical location, and company size. We need an interactive dashboard to visualise these trends and provide actionable insights for making informed salary-related decisions.’*

This dataset offers comprehensive insights into data salaries and employment attributes from 2020 to 2024. It includes key information such as salary, job title, experience level, employment type, employee residence, remote work ratio, company location, and company size. Using this dataset, I aim to explore the following questions:

1. **Analysing Salary Trends by Job Title and Experience Level**

* Investigate how salaries differ across job titles and experience levels.
* Identify which job titles and experience levels have the highest and lowest average salaries.

-- Summary Statistics for Salary by Job Title

SELECT

job\_title,

ROUND(AVG(salary\_in\_usd),2) AS avg\_salary,

MIN(salary\_in\_usd) AS min\_salary,

MAX(salary\_in\_usd) AS max\_salary

FROM data\_salaries

GROUP BY job\_title

ORDER BY avg\_salary DESC

LIMIT 10;

From the results, we observe that the Analytical Engineering Manager has the highest average salary at $399,880.00, which is also the minimum and maximum salary for this role. This suggests that it might be a relatively new position in the data field. Typically, emerging fields or technologies command higher salaries due to a scarcity of expertise.

The next highest salary is for a Data Science Tech Lead, with an average of $375,000.00, which is also the minimum and maximum salary for this position.

Conversely, the lowest average salary is for the Principal Data Architect, at $38,154.00, which is also the minimum and maximum salary reported. This seems unexpectedly low for a high-level role like a Principal Data Architect, which may be attributed to the job's location, possibly outside the US.

Following this, a CRM Data Analyst has an average salary of $40,000.00. The next four roles listed are analysis positions, such as the Compliance Data Analyst. It appears that analyst roles generally offer lower salaries compared to other data related positions.

-- Summary Statistics for Salary by Experience Level

SELECT

experience\_level,

ROUND(AVG(salary\_in\_usd),2) AS avg\_salary,

MIN(salary\_in\_usd) AS min\_salary,

MAX(salary\_in\_usd) AS max\_salary

FROM data\_salaries

GROUP BY experience\_level

ORDER BY avg\_salary DESC;

Examining salaries by experience level, executives (EX) earn the highest average salary at $195,218.52. They are followed by seniors (SE), with an average salary of $163,331.43. Mid-level professionals (MI) earn an average of $124,116.56, while entry-level positions (EN) have the lowest average salary at $91,351.46. This progression aligns with expectations, as salaries typically increase with experience and career advancement.

1. **Impact of Remote Work on Salaries**

* Examine the relationship between remote work ratio and salary.
* Determine if employees working remotely tend to have higher or lower salaries compared to those who work on-site.

SELECT

remote\_ratio,

ROUND(AVG(salary\_in\_usd),2) AS avg\_salary,

MIN(salary\_in\_usd) AS min\_salary,

MAX(salary\_in\_usd) AS max\_salary

FROM data\_salaries

GROUP BY remote\_ratio

ORDER BY avg\_salary DESC;

Office workers had the highest average salary at $150,969.34, likely due to the traditionally higher pay associated with on-site roles, which often include more senior or specialised positions. Remote workers earned an average of $143,252.95, reflecting competitive pay in flexible work arrangements that still offer substantial compensation. Hybrid workers, who split their time between the office and remote work, had the lowest average salary at $83,086.63. This lower average might be attributed to hybrid roles potentially encompassing a wider range of positions, including those with less specialisation or fewer responsibilities compared to full-time office roles.

1. **Geographical Salary Analysis**

* Compare salaries across different employee residences and company locations.
* Identify regions with the highest and lowest salaries.

1. **Company Size and Salary Correlation**

* Analyse how company size affects salaries.
* Determine if larger companies pay more than smaller companies.

SELECT

company\_size,

ROUND(AVG(salary\_in\_usd),2) AS avg\_salary,

MIN(salary\_in\_usd) AS min\_salary,

MAX(salary\_in\_usd) AS max\_salary

FROM data\_salaries

GROUP BY company\_size

ORDER BY avg\_salary DESC;

The data shows that medium sized companies offer the highest average salary of $150,000.00, possibly due to a balance between resources and flexibility, allowing them to attract and retain top talent. Large companies follow with an average salary of $121,827.56, benefiting from economies of scale but often having more standardised pay structures and rigid work environment. Small companies, while offering more intimate work environments and potential for rapid growth, provide a lower average salary of $86,780.20, reflecting their typically limited financial resources.

1. **Employment type**

* Analyse how company size affects salaries.

SELECT

employment\_type,

ROUND(AVG(salary\_in\_usd),2) AS avg\_salary,

MIN(salary\_in\_usd) AS min\_salary,

MAX(salary\_in\_usd) AS max\_salary

FROM data\_salaries

GROUP BY employment\_type

ORDER BY avg\_salary DESC;

The data shows that full-time employees earn the highest average salary at $147,131.55, likely due to the stability and benefits associated with full-time positions. Contract workers follow with an average of $112,578.39, reflecting higher pay for specialized skills but often without the same benefits. Part-time employees earn an average of $83,750.16, as they typically work fewer hours and may not receive full benefits. Freelancers have the lowest average earnings at $49,220.86, likely due to the variability of work and the absence of long-term contracts. It's important to note that in Europe, most contract workers out-earn full-time employees. This is because healthcare, a significant benefit in the U.S., is either free or low-cost in Europe, which likely influences the data.

**Data Metrics**

1. **Average Salary:**
   * By job title
   * By experience level
   * By employment type
   * By remote work ratio
   * By geographical location (employee residence and company location)
   * By company size
2. **Salary Distribution:**
   * Across different job titles and experience levels
3. **Remote Work Impact:**
   * Comparison of average salaries based on remote work ratio
4. **Geographical Salary Trends:**
   * Mapping average salaries by employee residence and company location

**Mock-Up Solution**

1. **Main Dashboard Components**:
   * **Job Title and Experience Level Analysis**:
     + Bar charts or box plots for average salaries by job title and experience level.
   * **Remote Work Impact**:
     + Bar chart comparing average salaries based on remote work ratio (0%, 50%, 100%).
   * **Geographical Analysis**:
     + Map visualisation showing average salaries by employee residence and company location.
   * **Company Size Impact**:
     + Bar chart showing average salaries across different company sizes (small, medium, large).
2. **Interactive Features**:
   * Filters for job title, experience level, employment type, and company size.
   * Drill-down capabilities to view detailed salary distributions.