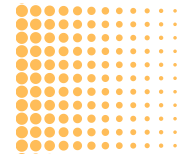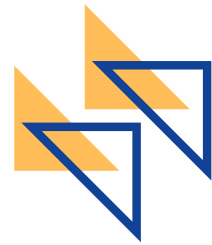# WORLD LAYOFFS ANALYSIS

By Muhammad Fakhri Azhar

An Exploratory Data Analysis
Project using MySQL

INTRODUCTION

The COVID-19 pandemic, which emerged in early 2020, has had far-reaching effects on global economies, leading to significant disruptions and workforce reductions. As companies sought to navigate the unprecedented challenges posed by the pandemic, many implemented mass layoffs as a necessary cost-cutting strategy. This analysis aims to explore layoff trends globally from 2020 to 2023, pinpointing the sectors and countries that were most impacted and identifying companies that experienced the highest levels of layoffs.

DATA OVERVIEW
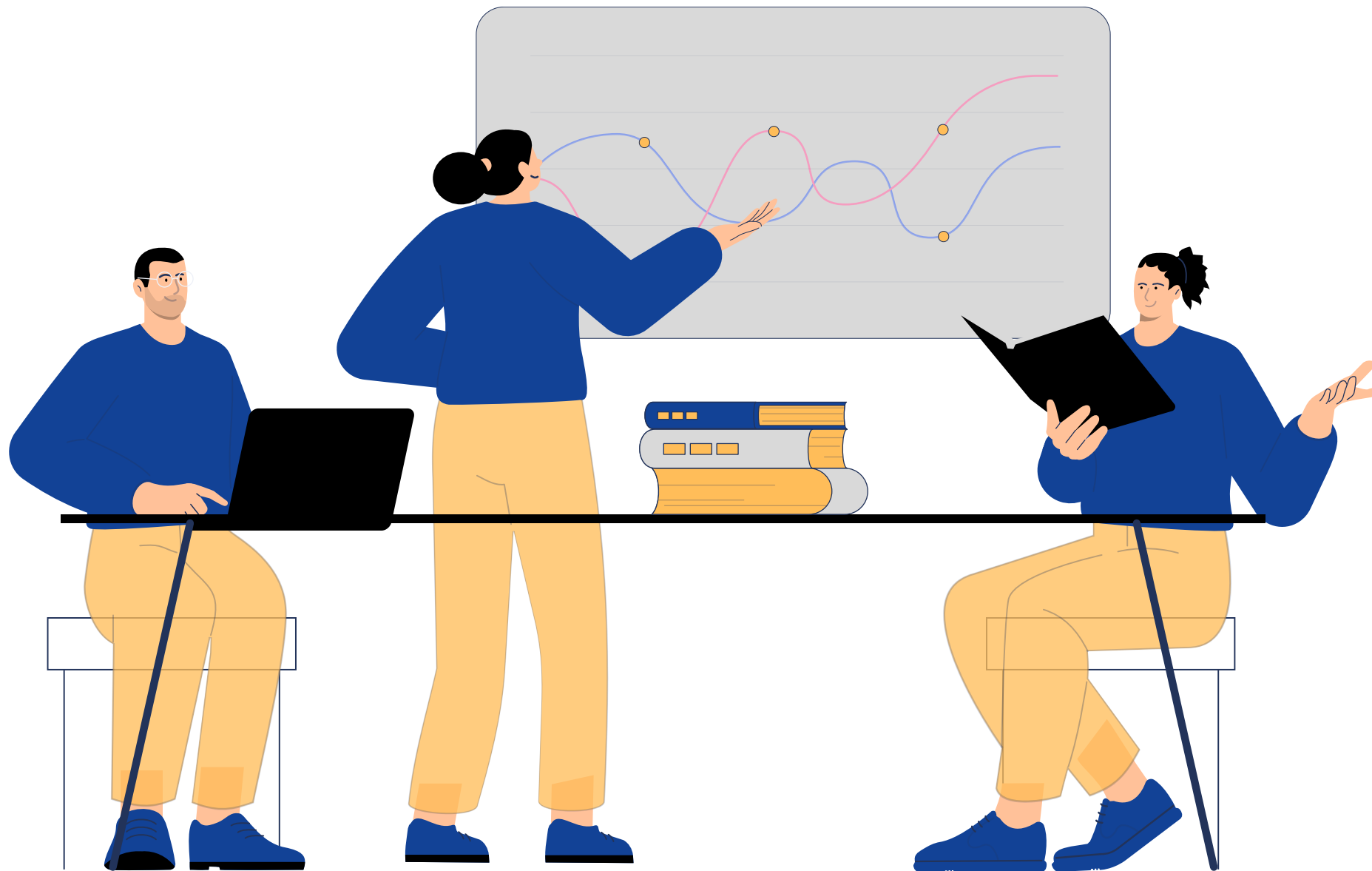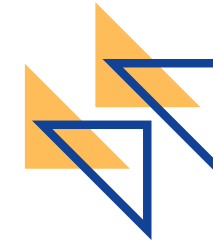
This dataset contains information about company layoffs worldwide from the start of the COVID-19 pandemic, March 2020, to March 2023. It records various companies from different industries and countries that conducted layoffs during this period.
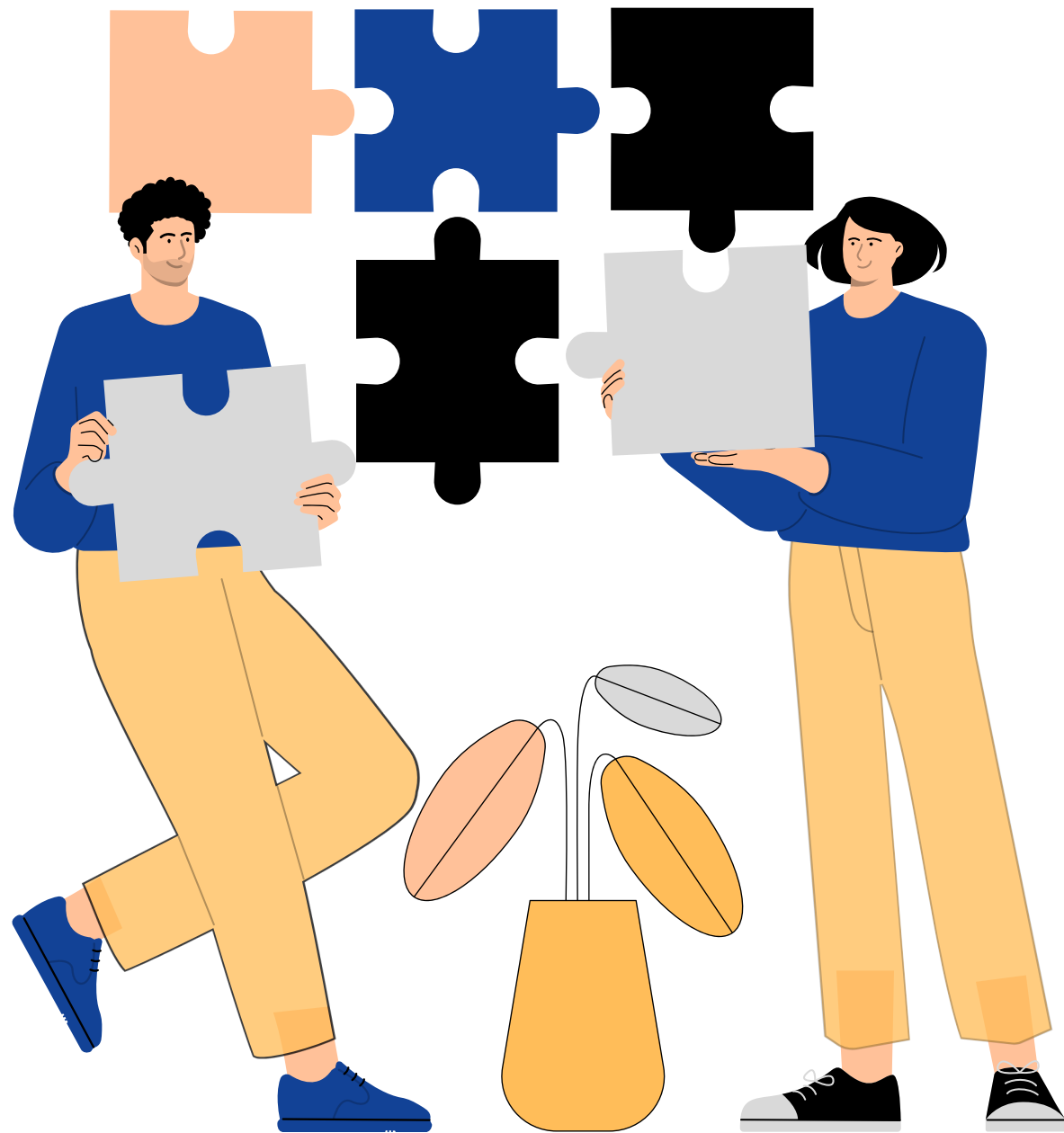
This dataset is useful for understanding global layoff trends during the crisis, including the most affected industries, critical layoff periods, and potential correlations with a company's financial status.

Dataset Link :
https://github.com/mfakhriazhar/data-cleaning-sql/blob/main/layoffs_data.csv

OBJECTIVES AND METHODOLOGY
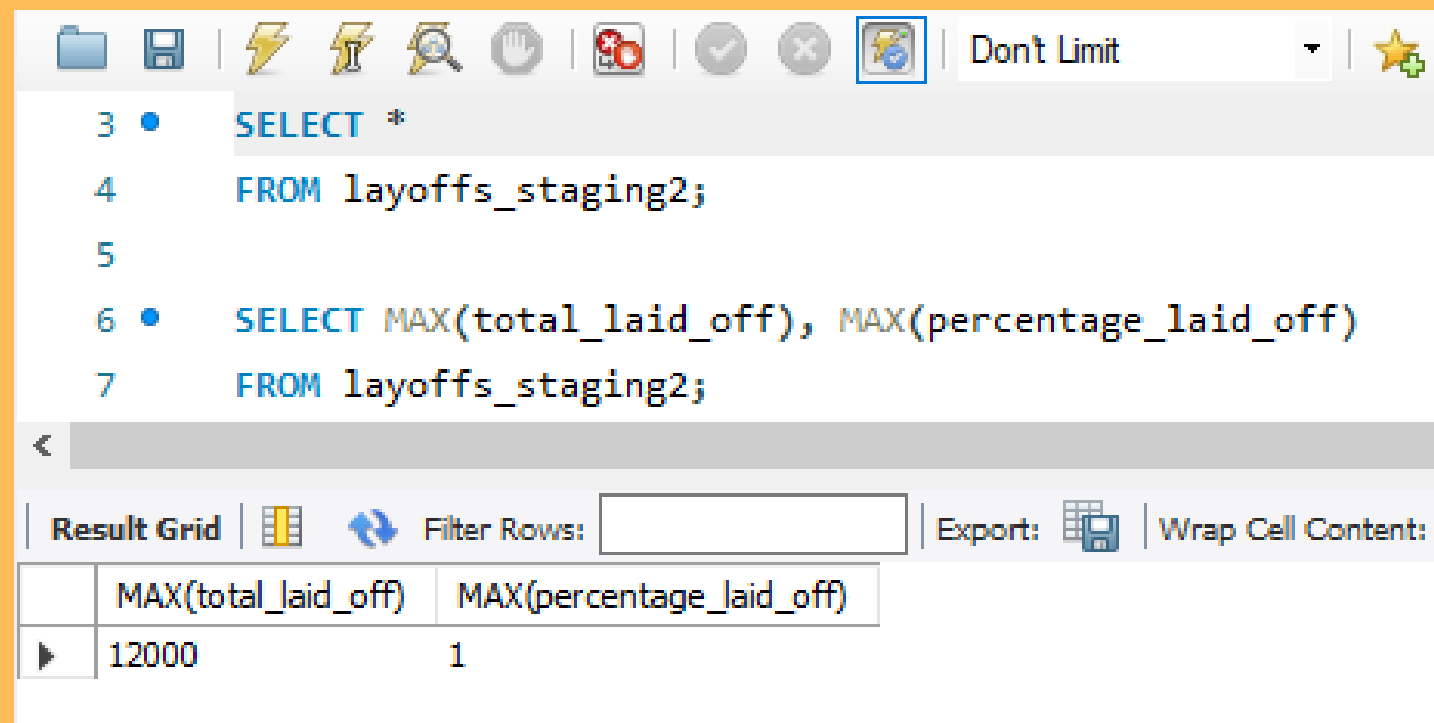
This analysis aims to explore layoff trends worldwide from March 2020 to March 2023 using structured data exploration through SQL. The main objectives are to identify trends in layoffs over time, determine which industries and countries are most affected, and highlight companies with the largest number of layoffs. The methodology involves querying and aggregating data using SQL to uncover patterns and generate insights, focusing on key variables such as total layoffs, industry, company, country, and funding stage. The approach is purely exploratory, with the goal of presenting data.

KEY INSIGHTS

QUERY


```
3 ●  SELECT *
4    FROM layoffs_staging2;
5
6 ●  SELECT MAX(total_laid_off), MAX(percentage_laid_off)
7    FROM layoffs_staging2;
```

MAX(total_laid_off)	MAX(percentage_laid_off)
12000	1

INSIGHTS

By calculating the maximum values for total_laid_off and percentage_laid_off, we found that the highest number of layoffs reached 12.000 people, with some companies reporting layoffs that amounted to 100% of their workforce. This indicates extreme measures taken by certain companies to address the financial strains caused by the pandemic, reflecting the severity of the economic impact across various sectors.

KEY INSIGHTS

```
11      -- Let's find out what companies have 100% employee layoffs.
12  ●   SELECT *
13      FROM layoffs_staging2
14      WHERE percentage_laid_off = 1;
```
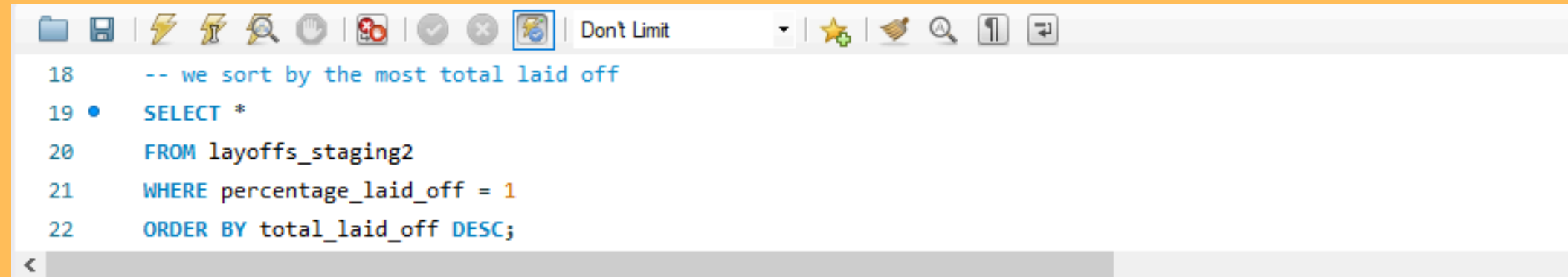
Result Grid | Filter Rows: | Export: | Wrap Cell Content: IA

company	location	industry	total_laid_off	percentage_laid_off	date	stage	country	funds_raised_millions
Ahead	SF Bay Area	Healthcare	44	1	2022-04-14	Unknown	United States	9
Airlift	Lahore	Logistics	NULL	1	2022-07-12	Series B	Pakistan	109
Airy Rooms	Jakarta	Travel	NULL	1	2020-05-07	Unknown	Indonesia	NULL
Amplero	Seattle	Marketing	17	1	2020-03-29	Series B	United States	25
Arch Oncology	Brisbane	Healthcare	NULL	1	2023-01-13	Series C	United States	155
Assure	Salt Lake City	Finance	NULL	1	2022-11-23	Seed	United States	2
Atsu	Seattle	Infrastructure	6	1	2020-04-10	Unknown	United States	1
Aura Financial	SF Bay Area	Finance	NULL	1	2021-01-11	Unknown	United States	584
Automatic	SF Bay Area	Transportation	NULL	1	2020-05-01	Acquired	United States	24
Awok	Dubai	Retail	NULL	1	2020-09-02	Series A	United Arab Emirates	30

INSIGHTS

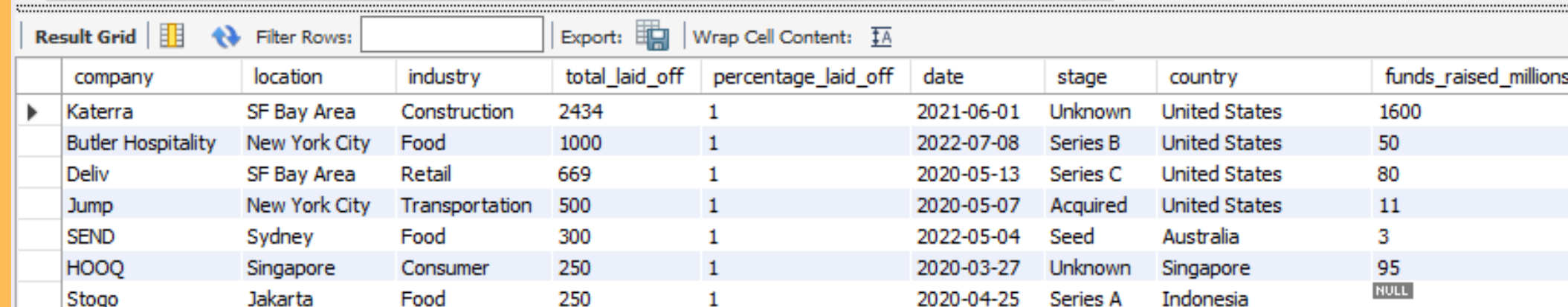Based on the results of the above query, it can be seen that a large number of companies have carried out layoffs with the rate reaching 100%. 116 companies have implemented these drastic measures, highlighting the severe impact of economic pressures and changing market conditions on the workforce. This alarming trend may raise concerns about job security and the overall stability of various industries.

KEY INSIGHTS

QUERY

```sql
18    -- we sort by the most total laid off
19  ● SELECT *
20    FROM layoffs_staging2
21    WHERE percentage_laid_off = 1
22    ORDER BY total_laid_off DESC;
```
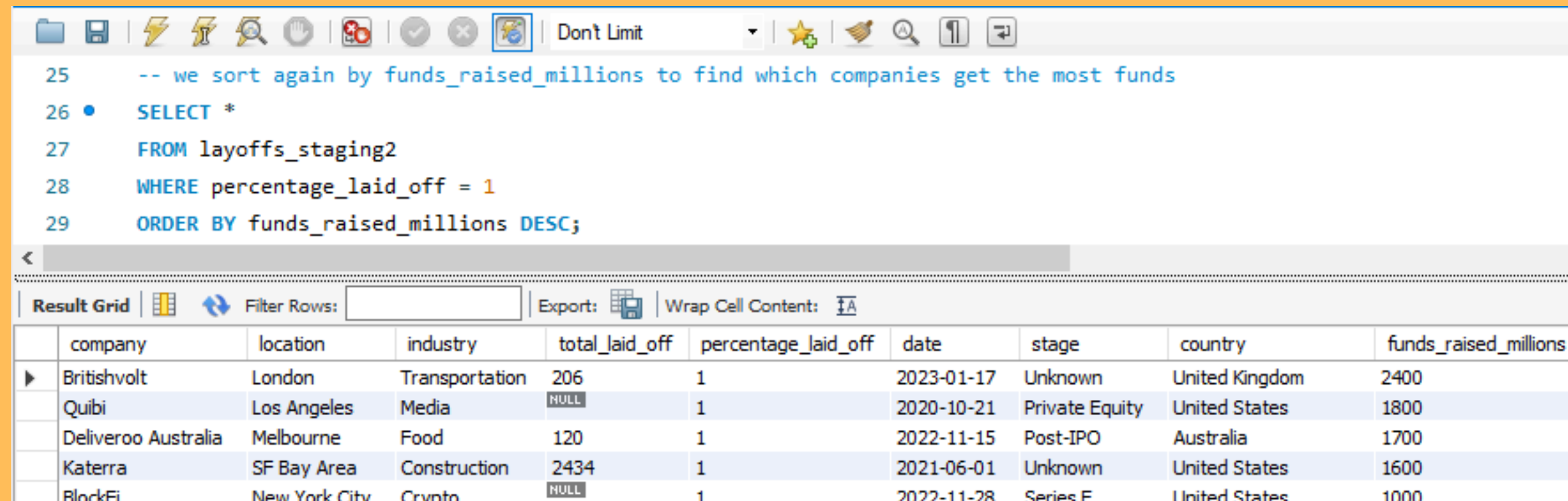
Result Grid | Filter Rows: | Export: | Wrap Cell Content:

company	location	industry	total_laid_off	percentage_laid_off	date	stage	country	funds_raised_millions
Katerra	SF Bay Area	Construction	2434	1	2021-06-01	Unknown	United States	1600
Butler Hospitality	New York City	Food	1000	1	2022-07-08	Series B	United States	50
Deliv	SF Bay Area	Retail	669	1	2020-05-13	Series C	United States	80
Jump	New York City	Transportation	500	1	2020-05-07	Acquired	United States	11
SEND	Sydney	Food	300	1	2022-05-04	Seed	Australia	3
HOOQ	Singapore	Consumer	250	1	2020-03-27	Unknown	Singapore	95
Stoqo	Jakarta	Food	250	1	2020-04-25	Series A	Indonesia	NULL

INSIGHTS

And if we sort the companies with percetentage_laid_off reaching 100% based on the total_laid_off they have. The company with the highest number of layoffs is Katerra in the US with a total of 2434 people. Katerra is an American construction technology company founded in 2015 by Michael Marks (former CEO of Flextronics and interim CEO of Tesla) and Fritz Wolff. The impact of the COVID-19 pandemic and the failure to raise additional capital worsened the company's financial situation. In June 2021, Katerra filed for Chapter 11 bankruptcy protection and announced the closure of most of its operations in the US.

KEY INSIGHTS

```
25      -- we sort again by funds_raised_millions to find which companies get the most funds
26  •   SELECT *
27      FROM layoffs_staging2
28      WHERE percentage_laid_off = 1
29      ORDER BY funds_raised_millions DESC;
```
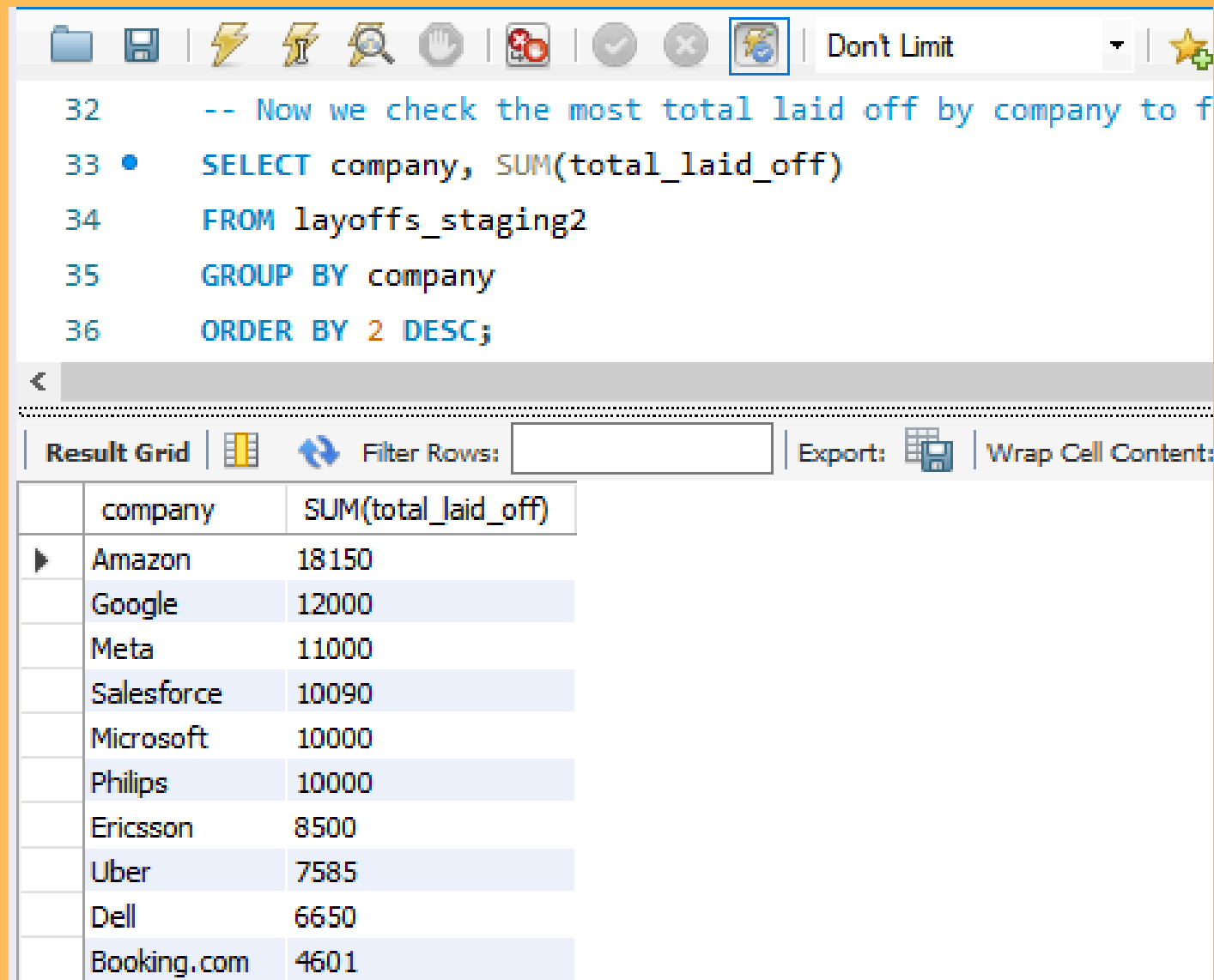
Result Grid | Filter Rows: | Export: | Wrap Cell Content: ‡A

company	location	industry	total_laid_off	percentage_laid_off	date	stage	country	funds_raised_millions
Britishvolt	London	Transportation	206	1	2023-01-17	Unknown	United Kingdom	2400
Quibi	Los Angeles	Media	NULL	1	2020-10-21	Private Equity	United States	1800
Deliveroo Australia	Melbourne	Food	120	1	2022-11-15	Post-IPO	Australia	1700
Katerra	SF Bay Area	Construction	2434	1	2021-06-01	Unknown	United States	1600
BlockFi	New York City	Crypto	NULL	1	2022-11-28	Series E	United States	1000

INSIGHTS

And we if sort again by funds_raised_millions to find which companies get the most funds. We found out the company that gets the most funds is Britishvolt (UK). Despite raising an impressive $2.4 billion in funding, Britishvolt still ended up laying off all of its employees. This highlights a critical insight that even companies with massive financial backing are not immune to collapse, especially when faced with poor financial management, unstable market conditions, or operational challenges

KEY INSIGHTS

```
32     -- Now we check the most total laid off by company to f
33  •  SELECT company, SUM(total_laid_off)
34     FROM layoffs_staging2
35     GROUP BY company
36     ORDER BY 2 DESC;
```
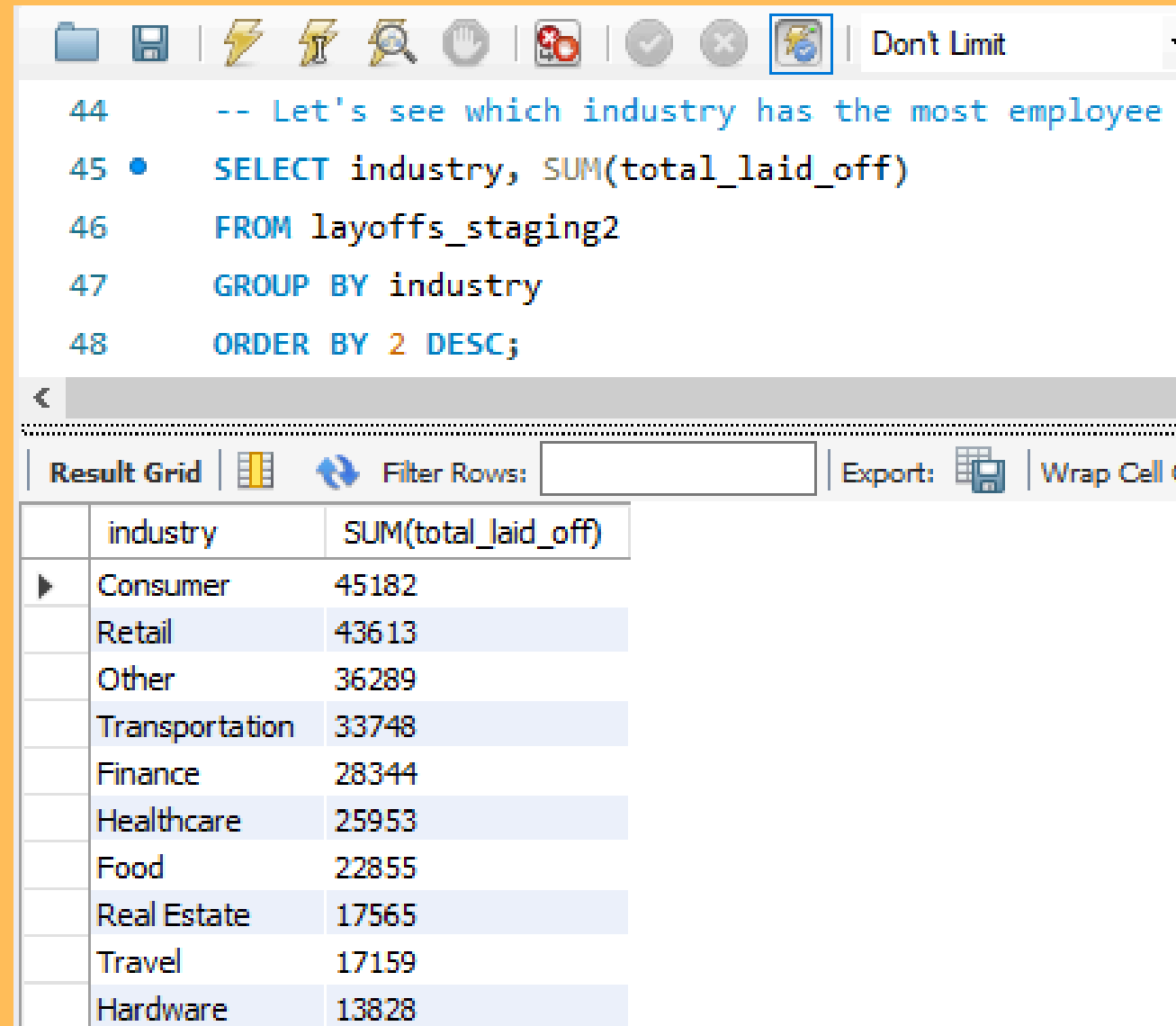
company	SUM(total_laid_off)
Amazon	18150
Google	12000
Meta	11000
Salesforce	10090
Microsoft	10000
Philips	10000
Ericsson	8500
Uber	7585
Dell	6650
Booking.com	4601

INSIGHTS

During the COVID-19 pandemic, tech giants such as Amazon, Google, and Meta saw a surge in demand for digital services, e-commerce, and online communication. This boom led to aggressive expansion and mass hiring across the industry. However, as the world shifted toward post-pandemic recovery, market demands normalized, operating costs rose, and investors started pushing for efficiency. As a result, these companies began executing large-scale layoffs: Amazon cut over 18.000 employees, Meta laid off more than 11.000, and Google reduced its workforce by 12.000 in early 2023. This trend is strongly reflected in the data, where tech companies dominate the top of the layoff charts, in terms of total_laid_off.

KEY INSIGHTS

```
        Don't Limit
44        -- Let's see which industry has the most employee
45  •     SELECT industry, SUM(total_laid_off)
46        FROM layoffs_staging2
47        GROUP BY industry
48        ORDER BY 2 DESC;
```
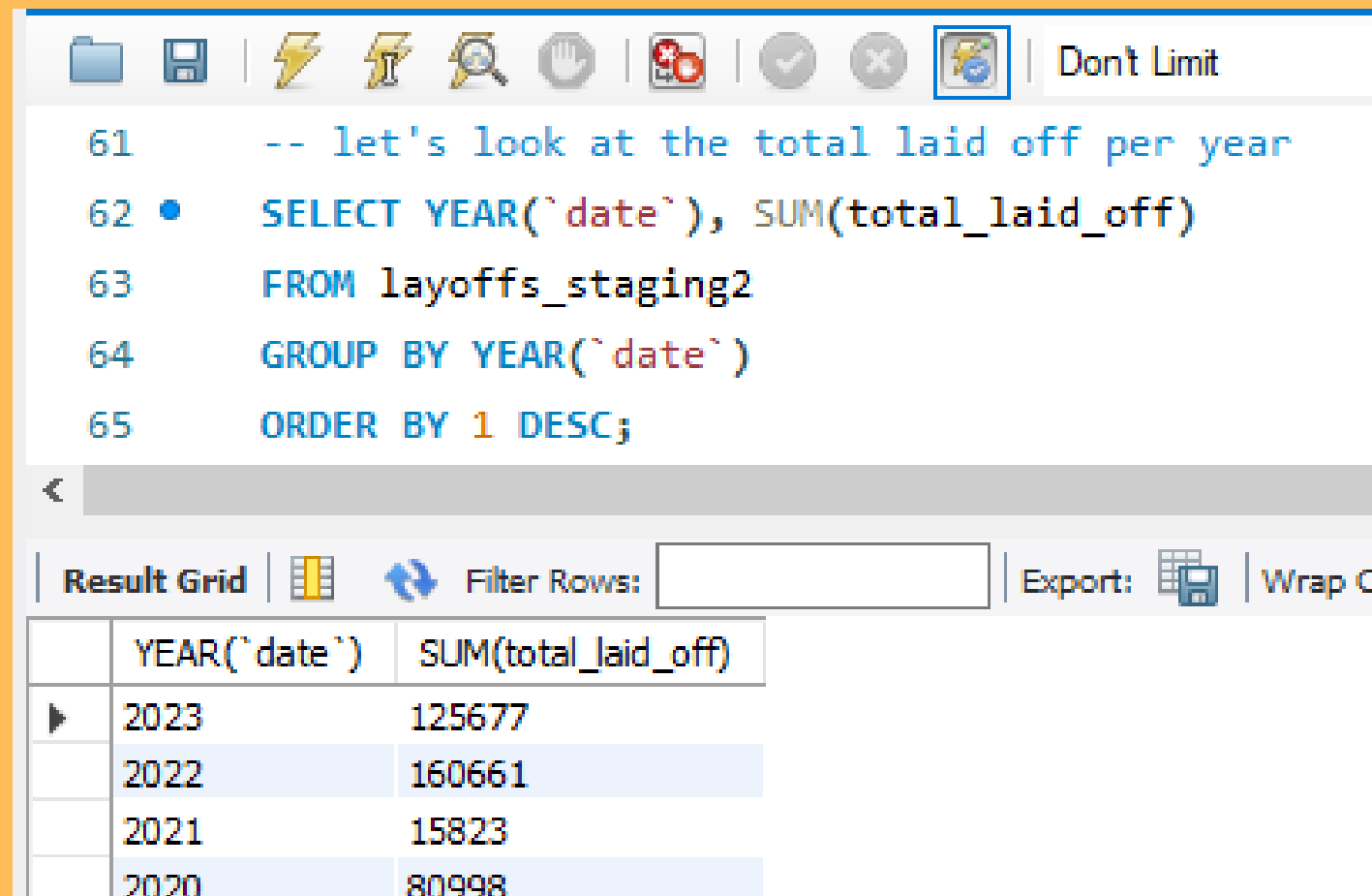
Result Grid | Filter Rows: | Export: | Wrap Cell

industry	SUM(total_laid_off)
Consumer	45182
Retail	43613
Other	36289
Transportation	33748
Finance	28344
Healthcare	25953
Food	22855
Real Estate	17565
Travel	17159
Hardware	13828

INSIGHTS

Aside from the tech industry, some of the industries most affected by the pandemic include the consumer and retail sectors, which recorded the highest number of employee layoffs. This is understandable, as many physical stores were forced to shut down due to widespread lockdowns and restrictions around the world. In addition, the pandemic had a significant impact on other sectors such as transportation, finance, healthcare, and more.

KEY INSIGHTS

QUERY

```
61    -- let's look at the total laid off per year
62 •  SELECT YEAR(`date`), SUM(total_laid_off)
63    FROM layoffs_staging2
64    GROUP BY YEAR(`date`)
65    ORDER BY 1 DESC;
```
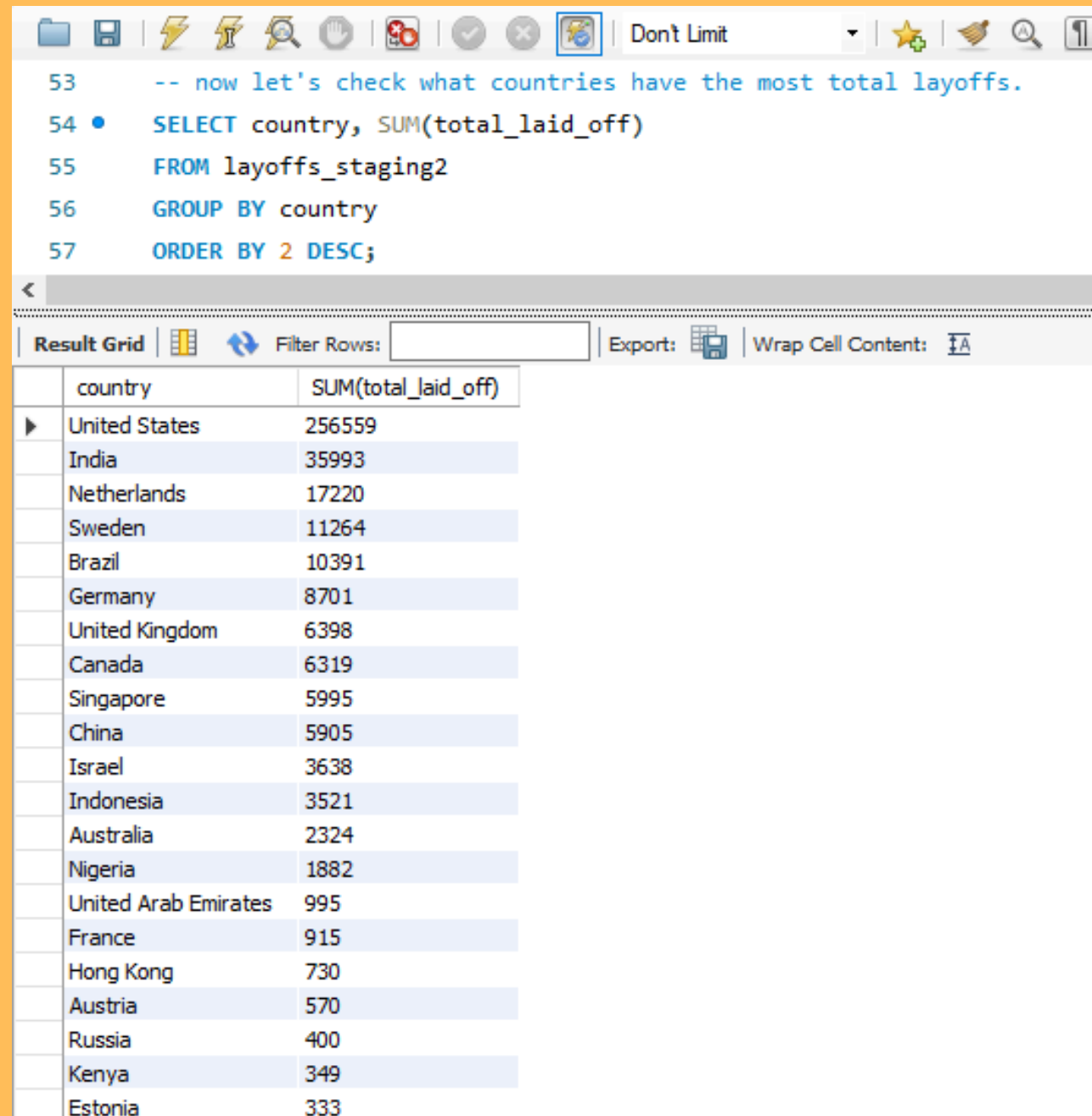
YEAR(`date`)	SUM(total_laid_off)
2023	125677
2022	160661
2021	15823
2020	80998

INSIGHTS

The annual layoff trend from 2020 to 2023 shows significant fluctuations. In 2020, there were around 80.998 layoffs, marking the initial impact of the COVID-19 pandemic on the global workforce. Interestingly, the number dropped sharply in 2021 to 15.823, which may indicate a temporary recovery or stabilization. However, in 2022, layoffs surged drastically to 160.661, becoming the highest annual total in the dataset likely driven by economic uncertainty, overhiring during the pandemic, and rising operational costs. By 2023, the number of layoffs dropped again to 125.677, suggesting that companies may have begun to stabilize or adapt to the new post-pandemic environment. This trend highlights how the global labor market reacted dynamically to the waves of crisis and adjustment over the three-year period.

KEY INSIGHTS

QUERY

```
53      -- now let's check what countries have the most total layoffs.
54    • SELECT country, SUM(total_laid_off)
55      FROM layoffs_staging2
56      GROUP BY country
57      ORDER BY 2 DESC;
```

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

country	SUM(total_laid_off)
United States	256559
India	35993
Netherlands	17220
Sweden	11264
Brazil	10391
Germany	8701
United Kingdom	6398
Canada	6319
Singapore	5995
China	5905
Israel	3638
Indonesia	3521
Australia	2324
Nigeria	1882
United Arab Emirates	995
France	915
Hong Kong	730
Austria	570
Russia	400
Kenya	349
Estonia	333

INSIGHTS

The country-wise layoff data shows that the United States leads by a wide margin, recording over 256.559 layoffs, making up the majority of the global total. This reflects the large concentration of major tech companies headquartered in the US, many of which implemented significant workforce reductions during and after the pandemic. India follows in second place with approximately 35.993 layoffs, likely driven by its fast-growing tech and startup sector. The Netherlands, Sweden, and Brazil round out the top five, each experiencing layoffs in the range of 10.000 to 17.000 employees. Notably, Indonesia ranks 12th with 3.521 layoffs, indicating that while the country was affected, the scale was relatively smaller compared to Western nations.

KEY INSIGHTS

```
81     -- we make rolling total layoffs based on the month of the year.
82  ●  SELECT SUBSTRING(`date`,1,7) AS `MONTH`, SUM(total_laid_off)
83     FROM layoffs_staging2
84     WHERE SUBSTRING(`date`,1,7) IS NOT NULL
85     GROUP BY `MONTH`
86     ORDER BY 1 ASC;
87
88  ● ⊖ WITH Rolling_Total AS (
89     SELECT SUBSTRING(`date`,1,7) AS `MONTH`, SUM(total_laid_off) AS total_off
90     FROM layoffs_staging2
91     WHERE SUBSTRING(`date`,1,7) IS NOT NULL
92     GROUP BY `MONTH`
93     ORDER BY 1 ASC )
94     SELECT `MONTH`, total_off
95     , SUM(total_off) OVER(ORDER BY `MONTH`) AS rolling_total
96     FROM Rolling_Total;
```

Result Grid | Filter Rows:

MONTH	total_off	rolling_total
2020-03	9628	9628
2020-04	26710	36338
2020-05	25804	62142
2020-06	7627	69769
2020-07	7112	76881
2020-08	1969	78850
2020-09	609	79459
2020-10	450	79909
2020-11	237	80146
2020-12	852	80998
2021-01	6813	87811
2021-02	868	88679
2021-03	47	88726
2021-04	261	88987
2021-06	2434	91421
2021-07	80	91501
2021-08	1867	93368
2021-09	161	93529
2021-10	22	93551

INSIGHTS

The rolling total of layoffs from March 2020 to March 2023 reveals a clear accumulation of job losses over time. It started with 9.628 layoffs in March 2020, shortly after the onset of the COVID-19 pandemic. By the end of 2020, the number had surged to 80.998. In early 2021, the total rose slightly to 87.811, and by the end of 2021, it had reached 96.821. A small increase occurred in early 2022 to 97.331, but by the end of 2022, layoffs had jumped significantly to 257.482. The number continued climbing in early 2023, hitting 342.196, and by March 2023, the cumulative total stood at 383,.59 layoffs. This trend shows how the global workforce continued to feel the ripple effects of economic uncertainty long after the initial pandemic shock, with the most dramatic rise occurring throughout 2022.

KEY INSIGHTS

QUERY

```sql
127    -- next we will calculate how many total laid off from the company per year.
128  ● WITH Company_Year (company, years, total_laid_off) AS
129    (
130    SELECT company, YEAR(`date`), SUM(total_laid_off)
131    FROM layoffs_staging2
132    GROUP BY company, YEAR(`date`)
133    ),
134    Company_Year_Rank AS
135    (
136    SELECT *, DENSE_RANK() OVER(PARTITION BY years ORDER BY total_laid_off DESC) AS Ranking
137    FROM Company_Year
138    WHERE years IS NOT NULL
139    )
140    SELECT *
141    FROM Company_Year_Rank
142    WHERE Ranking <= 5;
143
```

company	years	total_laid_off	Ranking
Uber	2020	7525	1
Booking.com	2020	4375	2
Groupon	2020	2800	3
Swiggy	2020	2250	4
Airbnb	2020	1900	5
Bytedance	2021	3600	1
Katerra	2021	2434	2
Zillow	2021	2000	3
Instacart	2021	1877	4
WhiteHat Jr	2021	1800	5
Meta	2022	11000	1
Amazon	2022	10150	2
Cisco	2022	4100	3
Peloton	2022	4084	4
Carvana	2022	4000	5
Philips	2022	4000	5
Google	2023	12000	1
Microsoft	2023	10000	2
Ericsson	2023	8500	3
Amazon	2023	8000	4
Salesforce	2023	8000	4
Dell	2023	6650	5

Result Grid | Filter Rows: | Export: | W

KEY INSIGHTS

The top 5 companies with the highest layoffs each year from 2020 to 2023 reveal some consistent and notable names. In 2020, Uber led the layoffs with 7,525 employees, followed by Booking.com, Groupon, and Airbnb all heavily impacted by travel restrictions. In 2021, companies like Katerra and Zimyo topped the list, reflecting failures or shutdowns of startups. By 2022, tech giants such as Meta, Amazon, and Cisco began appearing prominently, marking the start of large-scale tech restructuring. The trend continued in 2023, with Google, Microsoft, Salesforce, and Dell among the top 5 all reducing thousands of employees as part of post-pandemic corrections and operational efficiency moves. This shift from travel/startup sectors in early years to big tech in later years illustrates how the impact of global disruptions evolved over time.

CONLUSION
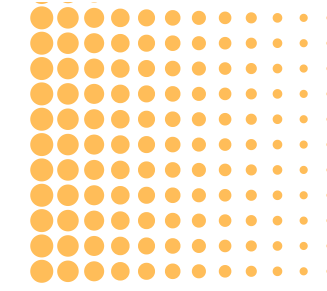
- The analysis of global layoffs from 2020 to 2023 reveals the widespread and long-lasting impact of the COVID-19 pandemic on the global workforce. Layoffs reached a cumulative total of over 383,000 employees by March 2023, with a significant spike in 2022, indicating deep economic pressures across industries. Although tech companies initially expanded during the pandemic boom, many including Amazon, Meta, and Google later reversed course and executed large-scale layoffs due to rising costs, overhiring, and shifting market demands.
- Notably, 116 companies laid off 100% of their workforce, with Katerra in the U.S. recording the highest total at 2,434 employees, and Britishvolt in the U.K. collapsing despite raising $2.4 billion in funding. This highlights that even well-funded companies are not immune to failure when faced with mismanagement or market instability.
- The United States dominated in total layoffs, reflecting its high concentration of major tech firms. Meanwhile, industries like consumer, retail, transportation, and finance were also severely affected due to lockdowns and global restrictions. The transition of top layoff contributors from travel-related and startup companies in early years to tech giants in later years reflects how economic shocks evolved and shifted across sectors over time.

Overall, this analysis underscores the critical importance of sustainable workforce planning, adaptability, and strong financial management in navigating global crises.

CLOSING & CONTACT INFO

Let this data serve as a reminder — in an ever-changing world, sustainable growth and strategic workforce planning are not optional, but essential. Thank you for your attention. Let's continue using data to make smarter, more resilient decisions.

Github Code :
https://github.com/mfakhriazhar/world_layoffs_analysis/blob/main/Project%20Exploratory%20Data%20Analysis%20with%20MySQL.sql
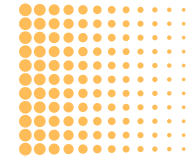
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