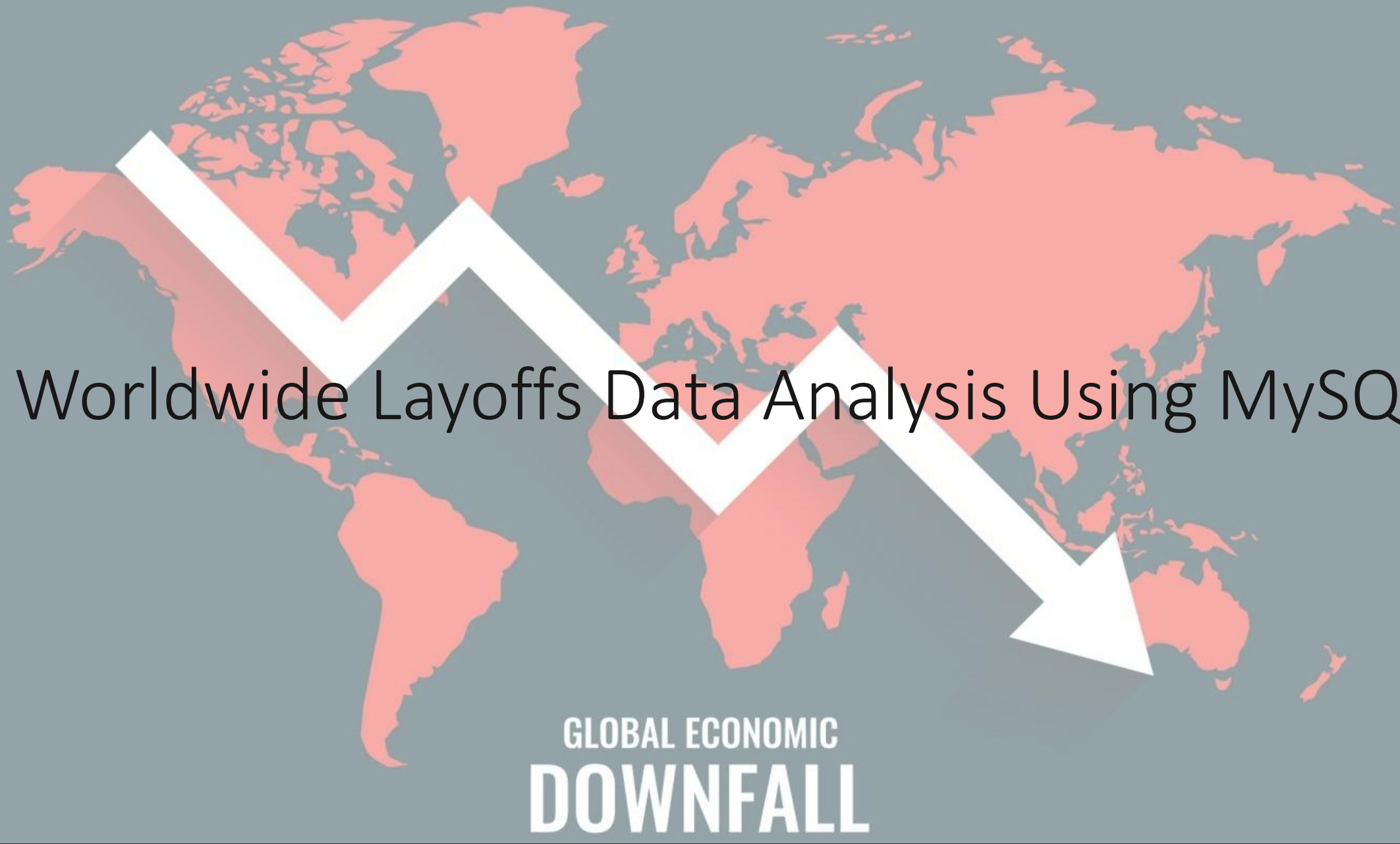
Worldwide Layoffs Data Analysis Using MySQL



Project Overview

Welcome to my analysis of Worldwide layoffs, focusing on workforce reduction across different industries due to global economic crisis. This project was created out of a desire to navigate and understand the worst hit industries and stages affected due to economic crisis more effectively. The data sourced from Kaggle which provides a foundation for my analysis, containing detailed information on companies, industries, locations, total laid off, percentage laid off, date and fund raised. Through a series of SQL queries, I explore key questions such as the layoffs by industry, company, location, countries and the date of layoffs such as when did the first and last layoff happened.

Tools I Used

- For my deep dive into the data analyst job market, I harnessed the power of several key tools:

1. **SQL (Structured Query Language)**: The backbone of my analysis, allowing me to clean and analyze the data and find critical insights.
2. **MySQL Workbench CE**: The Relational Database Management System, I used to run my SQL queries which let me easily perform data cleaning and exploratory data analysis.
3. **GitHub**: Essential for sharing my SQL code and analysis, ensuring collaboration and project tracking.

Database Schema and Tables

- Database – world_layoffs
- Tables-

1. **layoffs** – The original raw uncleaned table
2. **layoffs_stagging** – The copy of original dataset to remove duplicate rows
3. **layoffs_stagging2** – The final cleaned table

company	location	industry	total_laid_off	percentage_laid_off	date	stage	country	funds_raised_millions
Atlassian	Sydney	Other	500	0.05	3/6/2023	Post-IPO	Australia	210
SiriusXM	New York City	Media	475	0.08	3/6/2023	Post-IPO	United States	525
Alerzo	Ibadan	Retail	400	NULL	3/6/2023	Series B	Nigeria	16
UpGrad	Mumbai	Education	120	NULL	3/6/2023	Unknown	India	631
Loft	Sao Paulo	Real Estate	340	0.15	3/3/2023	Unknown	Brazil	788
Embark Trucks	SF Bay Area	Transportation	230	0.7	3/3/2023	Post-IPO	United States	317
Lendi	Sydney	Real Estate	100	NULL	3/3/2023	Unknown	Australia	59
UserTesting	SF Bay Area	Marketing	63	NULL	3/3/2023	Acquired	United States	152
Airbnb	SF Bay Area		30	NULL	3/3/2023	Post-IPO	United States	6400
Accolade	Seattle	Healthcare	NULL	NULL	3/3/2023	Post-IPO	United States	458
Indigo	Boston	Other	NULL	NULL	3/3/2023	Series F	United States.	1200
Zscaler	SF Bay Area	Security	177	0.03	3/2/2023	Post-IPO	United States	148
MasterClass	SF Bay Area	Education	79	NULL	3/2/2023	Series E	United States	461
Ambev Tech	Blumenau	Food	50	NULL	3/2/2023	Acquired	Brazil	NULL
Fittr	Pune	Fitness	30	0.11	3/2/2023	Series A	India	13
CNET	SF Bay Area	Media	12	0.1	3/2/2023	Acquired	United States	20
Flipkart	Bengaluru	Retail	NULL	NULL	3/2/2023	Acquired	India	12900
Kandela	Los Angeles	Consumer	NULL	1	3/2/2023	Acquired	United States	NULL
Truckstop.com	Boise	Logistics	NULL	NULL	3/2/2023	Acquired	United States	NULL
Thoughtworks	Chicago	Other	500	0.04	3/1/2023	Post-IPO	United States	748
iFood	Sao Paulo	Food	355	0.06	3/1/2023	Subsidiary	Brazil	2100
Color Health	SF Bay Area	Healthcare	300	NULL	3/1/2023	Series E	United States	482
Waymo	SF Bay Area	Transportation	209	0.08	3/1/2023	Subsidiary	United States	5500
PayFit	Paris	HR	200	0.2	3/1/2023	Series E	France	495
Yellow.ai	SF Bay Area	Support	200	NULL	3/1/2023	Series C	United States	102

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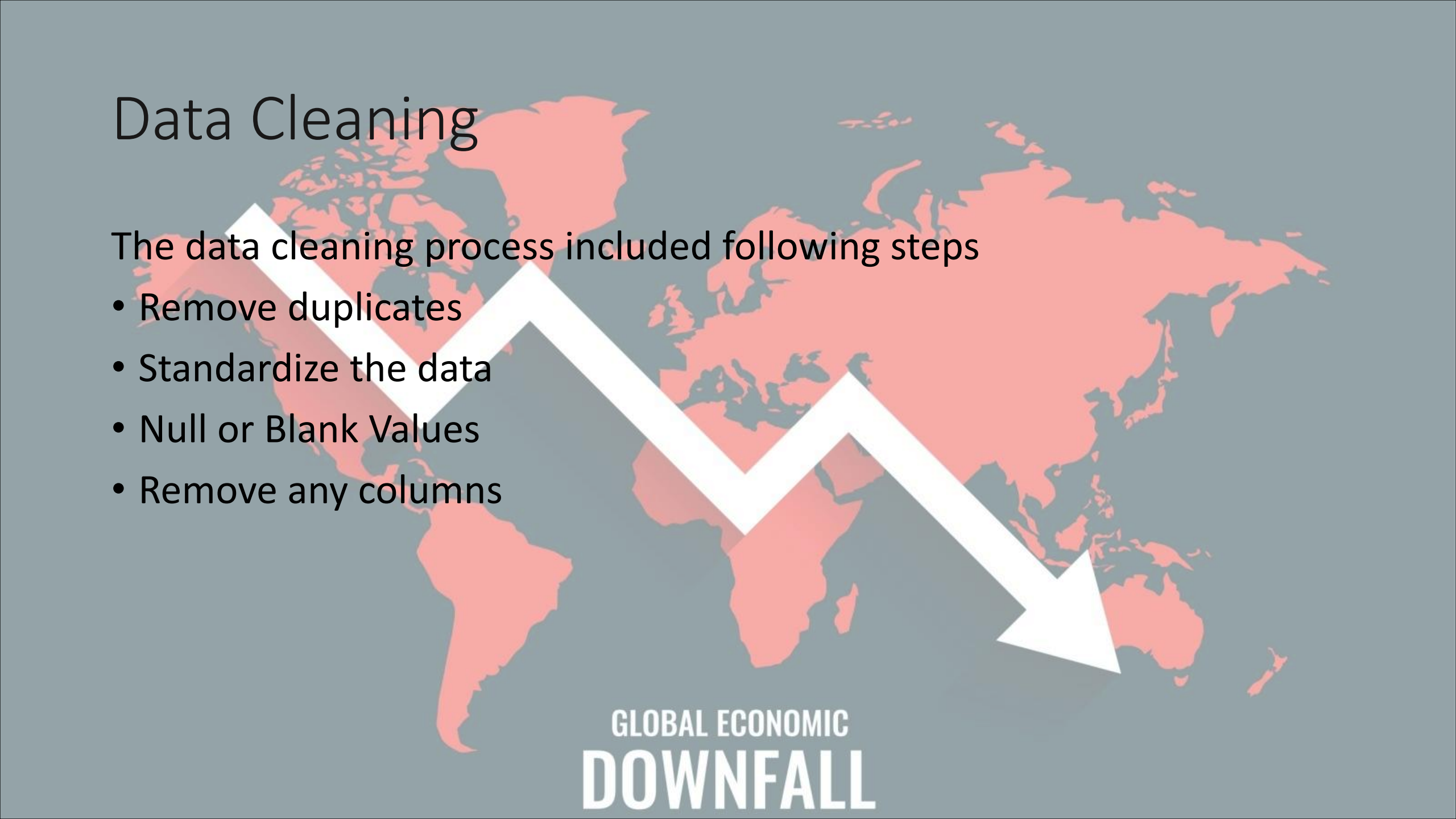
Data Cleaning

The data cleaning process included following steps

- Remove duplicates
- Standardize the data
- Null or Blank Values
- Remove any columns



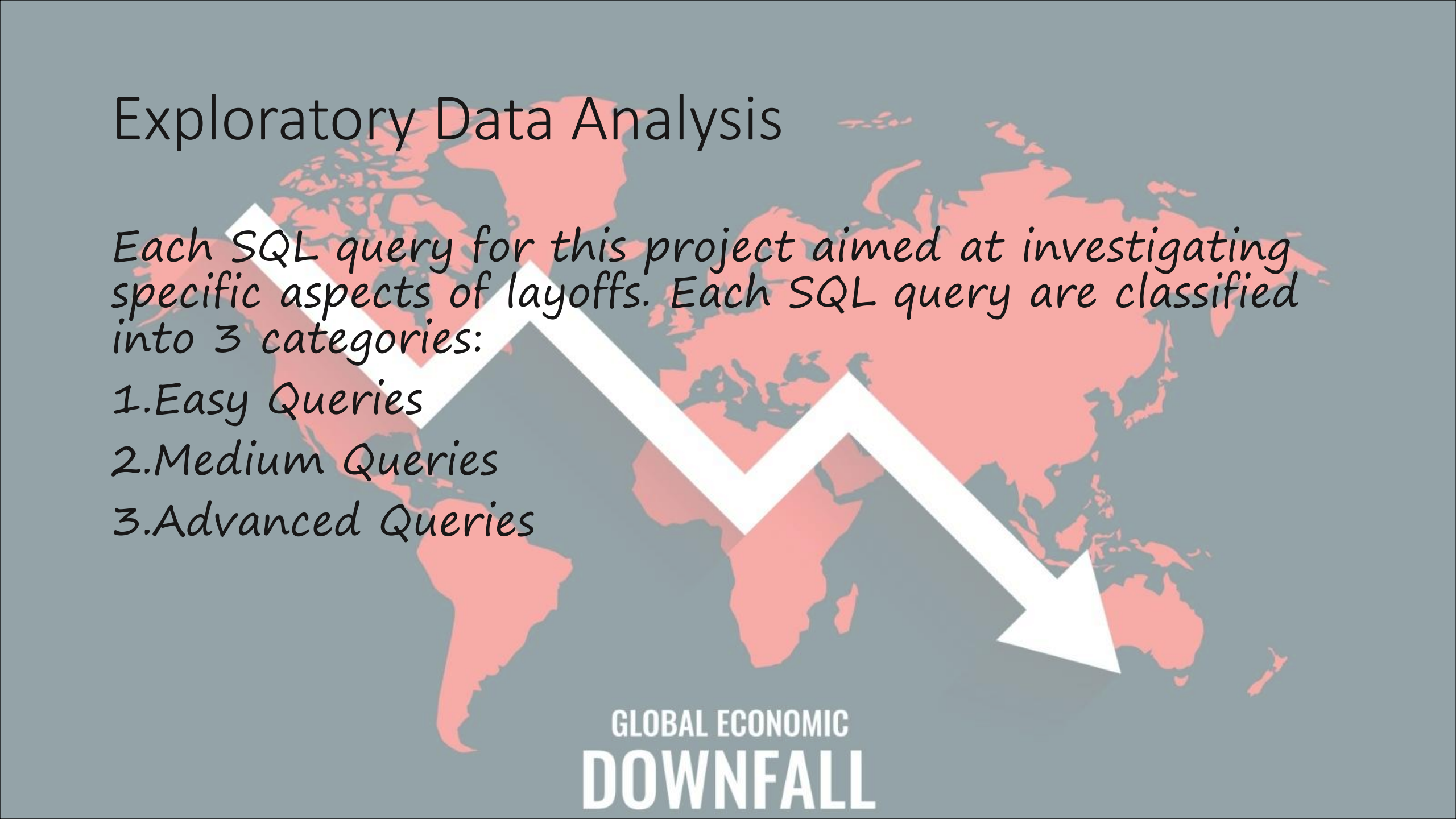
Exploratory Data Analysis

Each SQL query for this project aimed at investigating specific aspects of layoffs. Each SQL query are classified into 3 categories:

1.Easy Queries

2.Medium Queries

3.Advanced Queries



The maximum layoffs took place at which company ?

```
SELECT *
FROM layoffs_stagging2
WHERE total_laid_off =
(SELECT MAX(total_laid_off) FROM layoffs_stagging2);
```

company	location	industry	total_laid_off	percentage_laid_off	date	stage	country	funds_raised_millions
Google	SF Bay Area	Consumer	12000	0.06	2023-01-20	Post-IPO	United States	26

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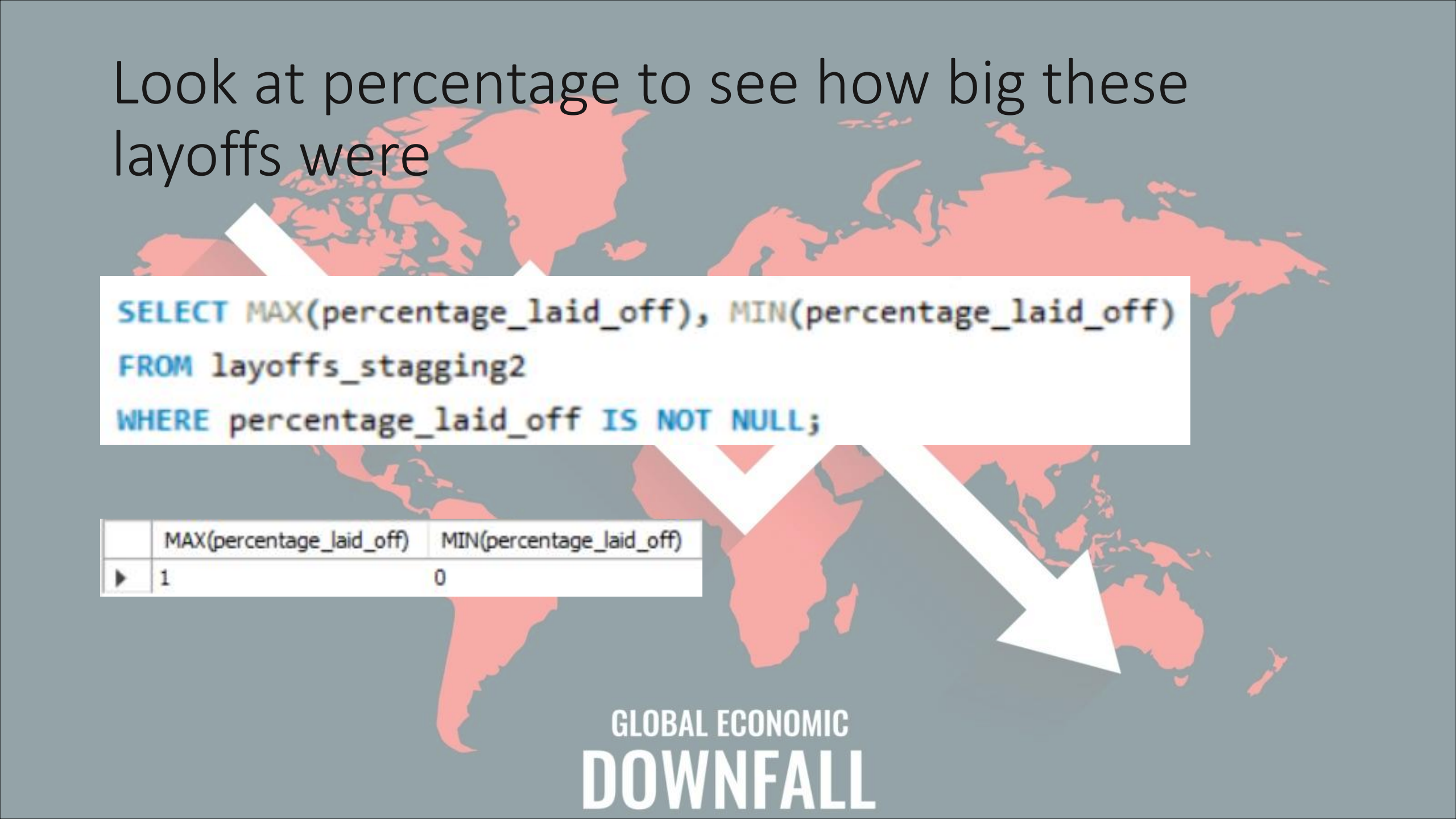
Look at percentage to see how big these layoffs were

```
SELECT MAX(percentage_laid_off), MIN(percentage_laid_off)
FROM layoffs_stagging2
WHERE percentage_laid_off IS NOT NULL;
```

	MAX(percentage_laid_off)	MIN(percentage_laid_off)
▶	1	0



Which companies had 1 which is basically 100 percent of the company laid off ?

```
SELECT *
FROM layoffs_stagging2
WHERE percentage_laid_off = 1;
```

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
BeyondMinds	Tel Aviv	Data	65	1	2022-05-23	Series A	Israel	16
Bitfront	SF Bay Area	Crypto	NULL	1	2022-11-29	Unknown	United States	NULL
BlockFi	New York City	Crypto	NULL	1	2022-11-28	Series E	United States	1000

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If we order by ‘funds_raised_millions’ we can see how big some of these companies were

```
SELECT *
FROM layoffs_stagging2
WHERE percentage_laid_off = 1
ORDER BY funds_raised_millions DESC;
```

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
Aura Financial	SF Bay Area	Finance	NULL	1	2021-01-11	Unknown	United States	584
Openpay	Melbourne	Finance	83	1	2023-02-07	Post-IPO	Australia	299
Pollen	London	Marketing	NULL	1	2022-08-10	Series C	United Kingdom	238
Simple Feast	Copenhagen	Food	150	1	2022-09-07	Unknown	Denmark	173
Arch Oncology	Brisbane	Healthcare	NULL	1	2023-01-13	Series C	United States	155
Motif Investing	SF Bay Area	Finance	NULL	1	2020-04-18	Series E	United States	126
CommonBond	New York City	Finance	NULL	1	2022-09-09	Series D	United States	125
Fast	SF Bay Area	Finance	NULL	1	2022-04-05	Series B	United States	124

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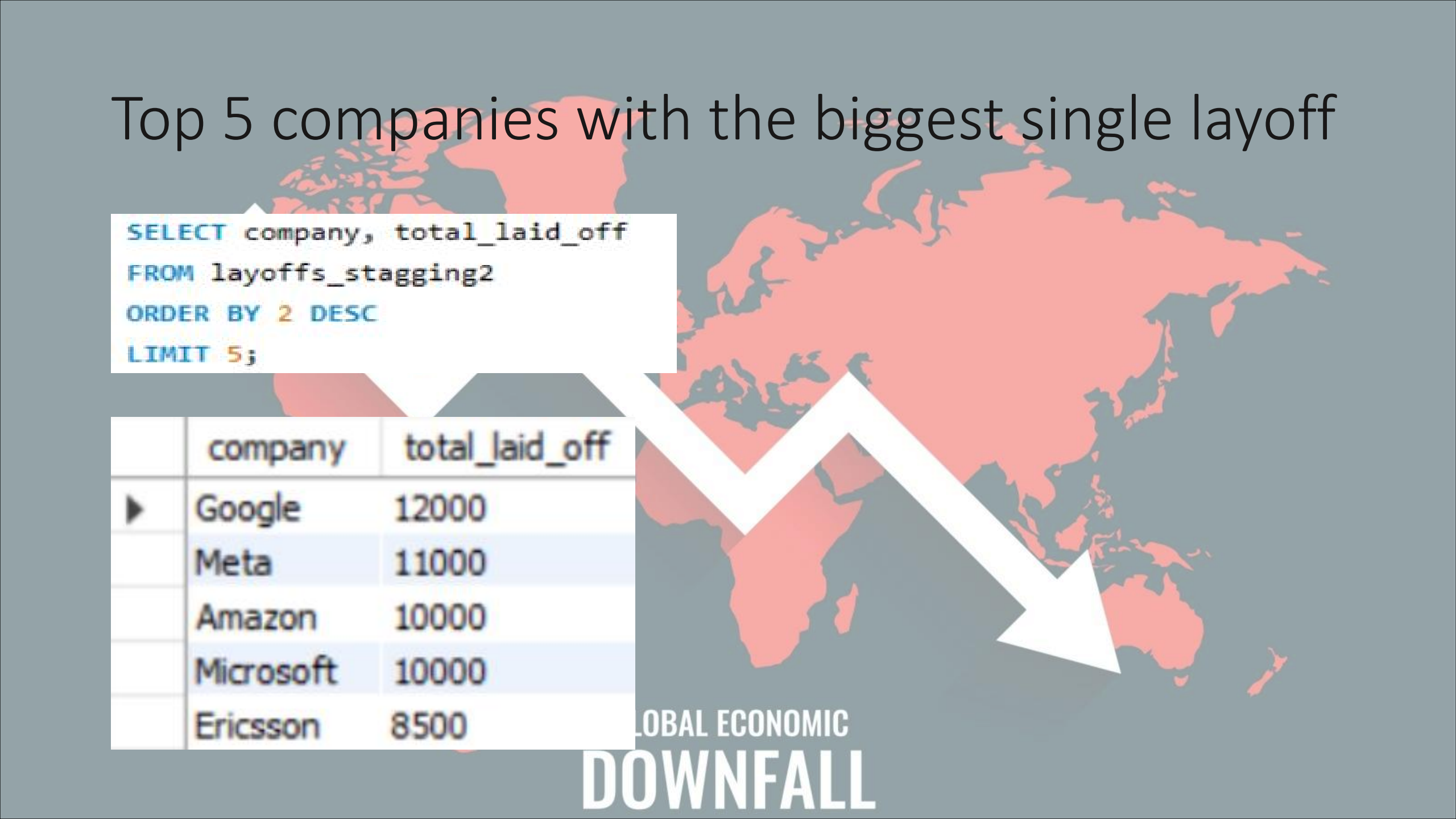
Top 5 companies with the biggest single layoff

```
SELECT company, total_laid_off
FROM layoffs_stagging2
ORDER BY 2 DESC
LIMIT 5;
```

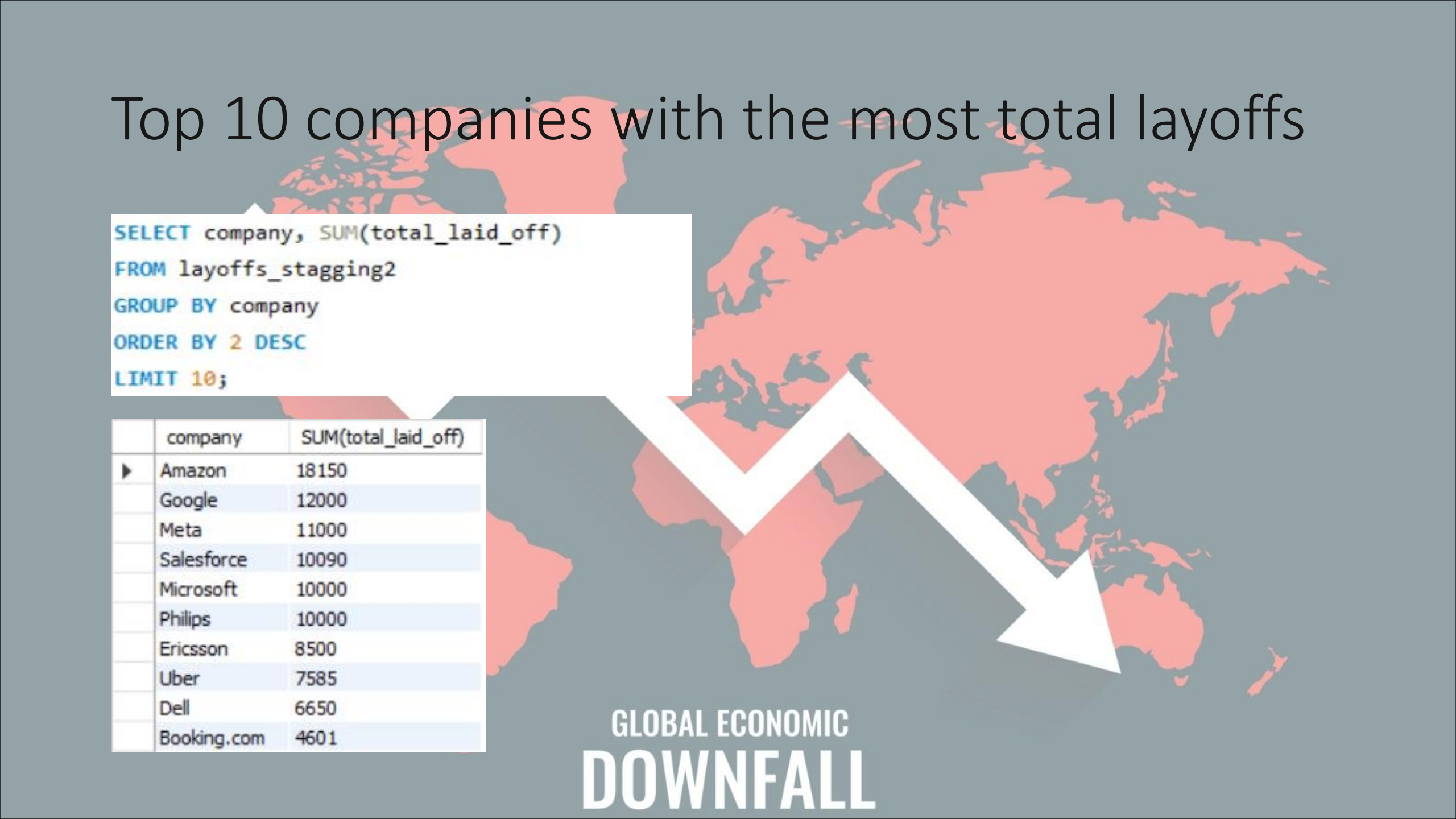
company	total_laid_off
Google	12000
Meta	11000
Amazon	10000
Microsoft	10000
Ericsson	8500



Top 10 companies with the most total layoffs

```sql
SELECT company, SUM(total_laid_off)
FROM layoffs_stagging2
GROUP BY company
ORDER BY 2 DESC
LIMIT 10;
```

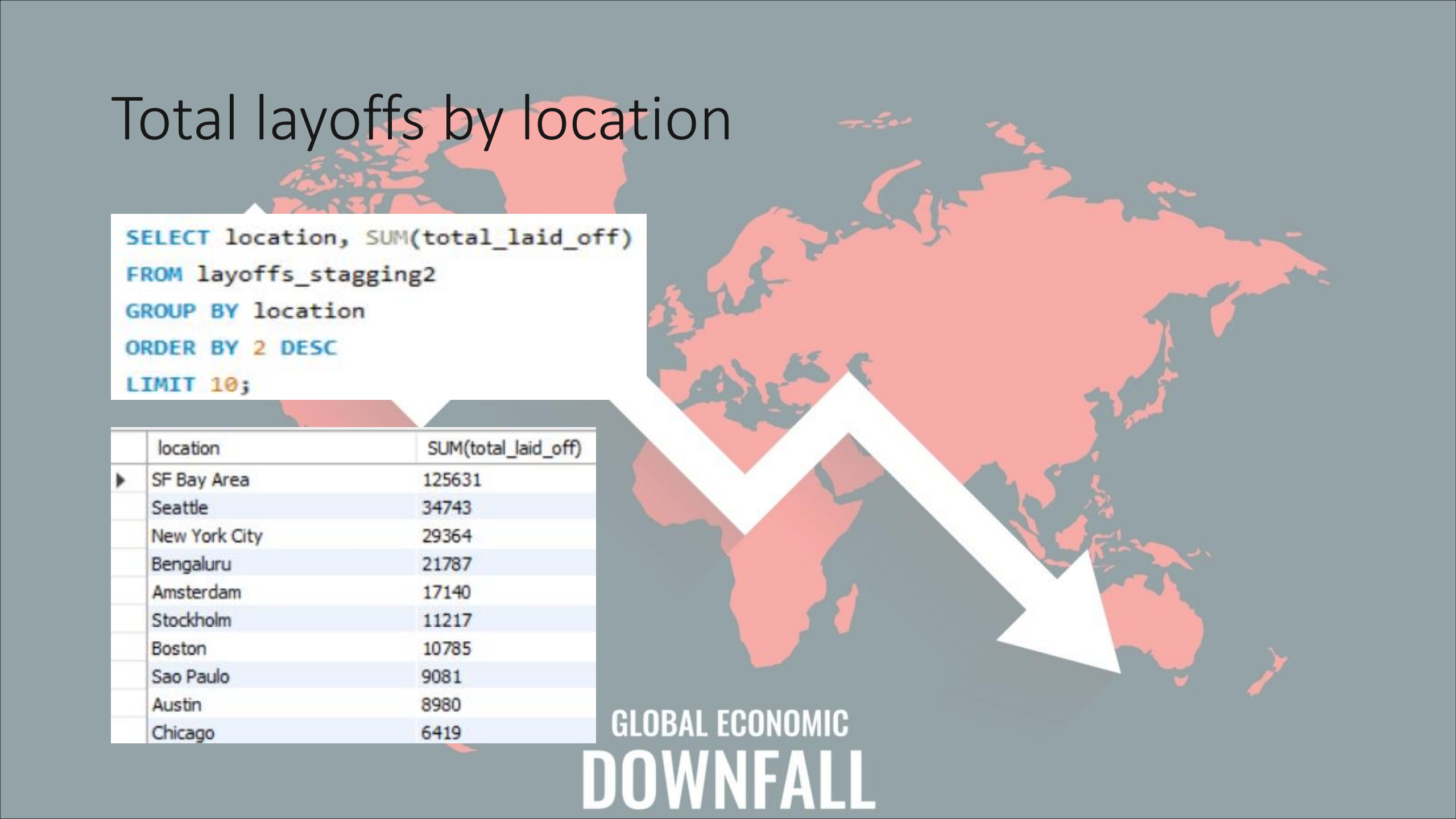
company	SUM(total_laid_off)
Amazon	18150
Google	12000
Meta	11000
Salesforce	10090
Microsoft	10000
Philips	10000
Ericsson	8500
Uber	7585
Dell	6650
Booking.com	4601



Total layoffs by location

```
SELECT location, SUM(total_laid_off)
FROM layoffs_stagging2
GROUP BY location
ORDER BY 2 DESC
LIMIT 10;
```

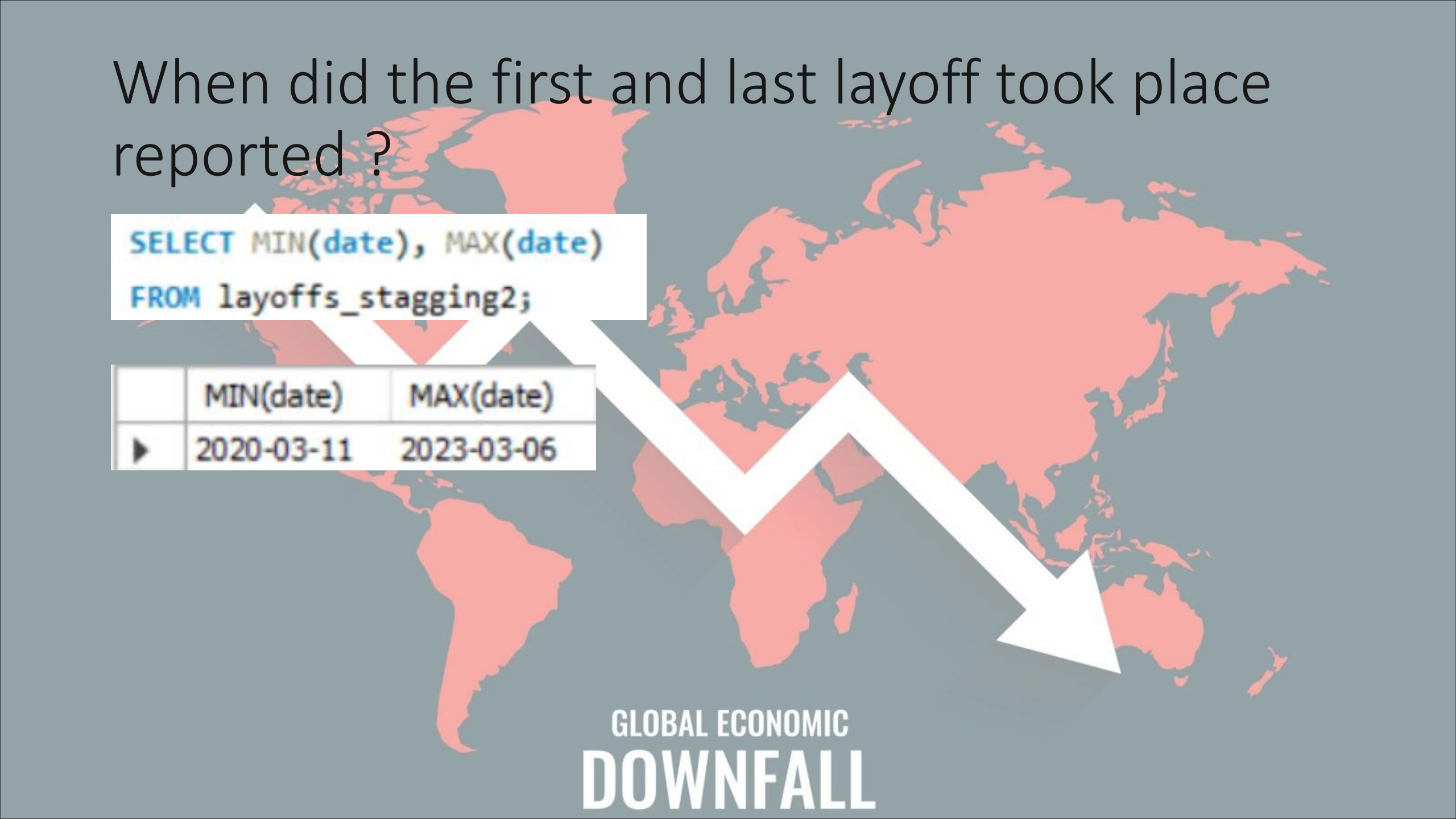
location	SUM(total_laid_off)
SF Bay Area	125631
Seattle	34743
New York City	29364
Bengaluru	21787
Amsterdam	17140
Stockholm	11217
Boston	10785
Sao Paulo	9081
Austin	8980
Chicago	6419



When did the first and last layoff took place reported ?

```
SELECT MIN(date), MAX(date)
FROM layoffs_stagging2;
```

	MIN(date)	MAX(date)
▶	2020-03-11	2023-03-06



Total layoffs by country, date, industry and stage

```sql
SELECT country, SUM(total_laid_off)
FROM layoffs_stagging2
GROUP BY country
ORDER BY 2 DESC;

SELECT YEAR(date), SUM(total_laid_off)
FROM layoffs_stagging2
GROUP BY YEAR(date)
ORDER BY 1 ASC;

SELECT industry, SUM(total_laid_off)
FROM layoffs_stagging2
GROUP BY industry
ORDER BY 2 DESC;

SELECT stage, SUM(total_laid_off)
FROM layoffs_stagging2
GROUP BY stage
```

country	SUM(total_laid_off)
United States	256559
India	35993
Netherlands	17220
Sweden	11264
Brazil	10391
Germany	8701
United Kingdom	6398
Canada	6319

YEAR(date)	SUM(total_laid_off)
NULL	500
2020	80998
2021	15823
2022	160661
2023	125677

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
Education	13338
Sales	13216

stage	SUM(total_laid_off)
Post-IPO	204132
Unknown	40716
Acquired	27576
Series C	20017
Series D	19225
Series B	15311
Series E	12697
Series F	9932
Private Equity	7957
Series H	7244
Series A	5678
Series G	3697
Series J	3570
Series I	2855
Seed	1636
Subsidiary	1094
NULL	322

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Earlier we looked at companies with the most layoffs. Now let's look at that per year.

```sql
WITH Company_Year AS
(
SELECT company, YEAR(date) AS years, SUM(total_laid_off) AS total_laid_off
FROM layoffs_stagging2
GROUP BY company, YEAR(date)
),
Company_Year_Rank AS
(
SELECT company, years, total_laid_off, DENSE_RANK() OVER (PARTITION BY years ORDER BY total_laid_off DESC) AS ranking
FROM Company_Year
)
SELECT company, years, total_laid_off, ranking
FROM Company_Year_Rank
WHERE ranking <= 3
AND years IS NOT NULL
ORDER BY years ASC, total_laid_off DESC;
```

company	years	total_laid_off	ranking
Uber	2020	7525	1
Booking.com	2020	4375	2
Groupon	2020	2800	3
Bytedance	2021	3600	1
Katerra	2021	2434	2
Zillow	2021	2000	3
Meta	2022	11000	1
Amazon	2022	10150	2
Cisco	2022	4100	3
Google	2023	12000	1
Microsoft	2023	10000	2
Ericsson	2023	8500	3

Rolling total of layoffs per month

```sql
WITH DATE_CTE AS
(
SELECT SUBSTRING(date,1,7) as dates, SUM(total_laid_off) AS total_laid_off
FROM layoffs_stagging2
GROUP BY dates
ORDER BY dates ASC
)
SELECT dates, SUM(total_laid_off) OVER (ORDER BY dates ASC) AS rolling_total_layoffs
FROM DATE_CTE
ORDER BY dates ASC;
```

dates	rolling_total_layoffs
NULL	500
2020-03	10128
2020-04	36838
2020-05	62642
2020-06	70269
2020-07	77381
2020-08	79350
2020-09	79959
2020-10	80409
2020-11	80646
2020-12	81498
2021-01	88311
2021-02	89179

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The Analysis and Insights

- The first layoff took place on 11th March 2020 and this was the day when WHO officially declared Covid-19 (SARS-CoV-2 Virus) as a global pandemic and the entire world was locked in their homes to avoid the spread of virus infection.
- The last layoff was reported on 6th March 2023 and during this period of time, the US economy was under recession post 2007-2009 and global tech giants like Amazon, Google, Meta, Microsoft, Salesforce, etc. focussed on reducing their workforce and freeze the hirings of new candidates.
- The worst hit industries included consumer, retail, transportation and finance.
- The top 5 countries where most of people lost their jobs included United States, India, Netherlands, Sweden and Brazil.
- The total number of job cuts increased rapidly from 2020 (80998) to 2023 (125677).