# Mini Analysis: Probability and Root Cause Exploration on Tech Layoffs in 2023

## Why 2023?

Based on my analysis using SQL, Power Query, and Excel, 2023 had the highest number of layoffs compared to 2020 to 2022, even though the COVID-19 pandemic began in 2020. I chose to focus on 2023 to better understand why layoffs peaked after the pandemic had already started to decline and was officially declared over.

## Probability Question

What is the probability that a randomly selected company laid off more than 50% of its employees in 2023?

- According to the dataset obtained from Kaggle, there were 23 layoff records for 2023, representing 16 unique companies.  
- Some companies appeared more than once because they operated in multiple locations, which explains the difference between unique companies and total entries.  
- All 23 layoff entries in 2023 involved companies that laid off 50% or more of their workforce.

P(Laid off ≥ 50%) = 23 / 23 = 1

Conclusion: If a company were randomly selected from this dataset for 2023, there would be a 100% chance that it laid off 50% or more of its employees.

## Root Cause Analysis (Using the 5 Whys Method)

Why were there so many layoffs in 2023?

1. Why were so many people laid off in 2023?  
- The economic effects of the Russia-Ukraine war caused global instability and strain on operations.  
- Inflation led consumers to spend less.  
- Online businesses were impacted by increased operational costs and reduced demand.  
- Many companies had overhired during the pandemic boom.  
- The rise of artificial intelligence displaced workers who could not adapt quickly.

2. Why did companies overhire during the pandemic?  
- With more people staying home, there was an increased demand for online services.  
- Companies responded to this demand by expanding their teams to meet short-term growth.  
- Hiring decisions were made based on immediate returns without long-term planning.

3. Why did poor forecasting contribute to layoffs?  
- Demand projections were based on temporary pandemic behaviors.  
- Companies did not account for post-pandemic slowdowns.  
- Workforce expansion was not aligned with future stability.

4. Why did companies lose customers in 2023?  
- Decline in customer service quality as a result of cost-cutting and automation.  
- Increased prices with little transparency.  
- Companies became less proactive in responding to customer needs.

5. Why didn’t companies respond effectively?  
- Many were unprepared for economic shifts after the pandemic.  
- Some lacked innovation and flexibility.  
- Resistance to operational change slowed their ability to adapt.

## Sources

- Kaggle: Tech Layoffs Dataset  
- Supporting insights from LinkedIn discussions and Quora user commentary

## Takeaway

The tech layoffs in 2023 were not just a continuation of pandemic-related downsizing; they reflected a deeper shift in the industry due to economic instability, overhiring, and disruptive technologies like AI. For job seekers and professionals, this highlights the importance of adaptability, continuous learning, and staying informed about market trends. For companies, it emphasizes the need for better forecasting and sustainable hiring practices.