

GLOBAL INFLATION ANALYSIS

INTRODUCTION

The global economy is highly complex, and understanding economic trends and patterns is crucial for making informed decisions about investments, policies, and more. One key factor that impacts the economy is inflation, which refers to the rate at which prices increase over time.

I would like to do an analysis of various aspects that are affected by the change in inflation like housing prices, interest rates, and GDP. Additionally, as there are many layoffs globally these days, I would like to study the trend over the years geographically.

Research Questions:

My Research questions are as follows:

1. In the last five years, how have worldwide trends in Inflation rates altered around the world? And what are the types of Inflation and its proportion? What are the countries with High Inflation Rates?
2. Is there a correlation between the GDP Rate and Inflation Rate in different countries over the years?
3. What are the impacts of the Inflation Rate on the Housing Price Rate and Interest Rate?
4. Which are the top companies that laid off the maximum number of employees each year? Which top countries had more layoffs in the last 3 years?

METHODOLOGY

Data Sets:

1. **Inflation Data:** This table consists of data on the Inflation Rate of various countries from the year 2018 to 2022.
2. **GDP Rate:** This table consists of data related to the GDP of the countries from 2018 to 2022.
3. **Housing Price:** This table consists of data related to housing prices like Price Income Ratio, Price Rent Price Ratio, Rent Price, and so on from 2018 to 2022.
4. **Interest Rate:** This table has interest rates implied by the prices at which government bonds are traded on financial markets from 2018 to 2022.
5. **Layoff:** This table consists of data related to company layoffs, industry, employee count, source, employee details, and dates from 2020 to 2023.
6. **Country and Continent:** The table consists of countries or areas in alphabetical order, and their three-digit numerical codes used for statistical processing purposes by the Statistics Division of the United Nations Secretariat.

Sources:

1. World Bank
2. International Monetary Fund
3. Organization for Economic Cooperation and Development
4. International Organization for Standardization

5. United Nations Statistics Division

References:

<https://www.worldbank.org>

<https://www.imf.org>

<https://data.oecd.org>

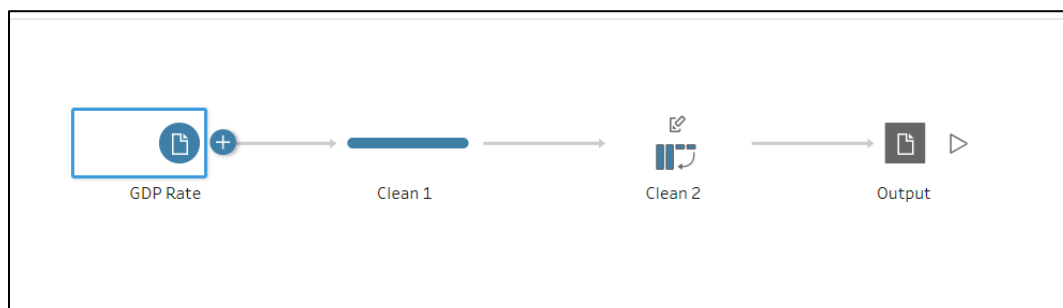
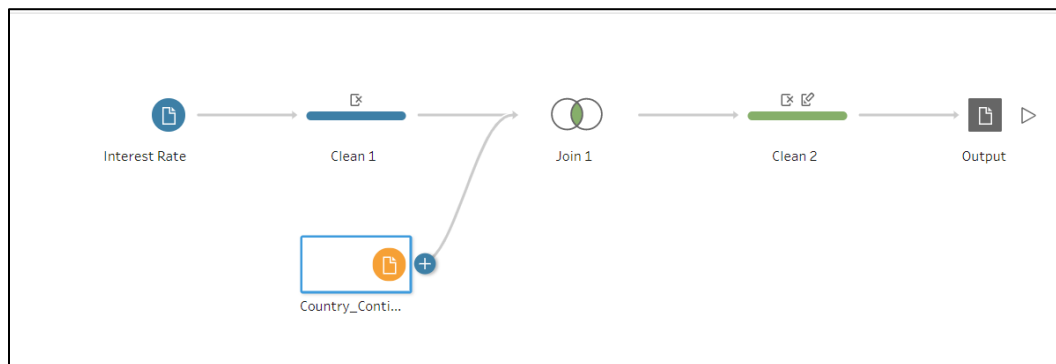
<https://layoffs.fyi/>

<https://statisticstimes.com/geography/countries-by-continents.php>

ANALYSIS

Data Preprocessing:

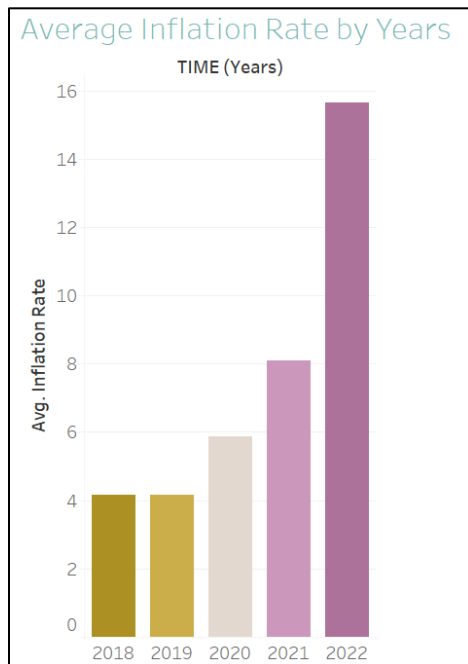
I used Tableau Prep Builder to process my data sets to filter the data to the last five years, and removed the unwanted columns, and null values. The pivot option helped me to bring the data per year in all the datasets in the same way. I used the Join option to merge the country detail in all the datasets from the common country continent table, this helped me big time to do the analysis globally more accurately. Also, I used the Union feature to combine the various types of Inflation from various Excel sheets into one.



Research Question and Solution:

1. In the last five years, how have worldwide trends in Inflation rates altered around the world?

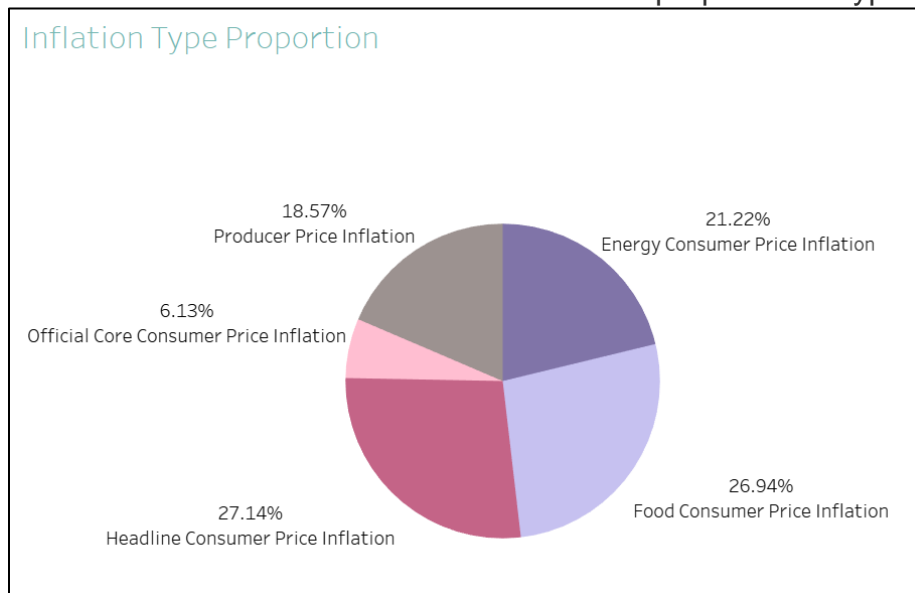
I used a bar chart as we have to analyze the average inflation rate trend over a specific point in time.



From the chart, it is evident that Inflation Rate spiked over the last three years.

2. What are the types of Inflation and its proportion?

I chose Pie chart as I would like to look at the proportion of types of Inflation.

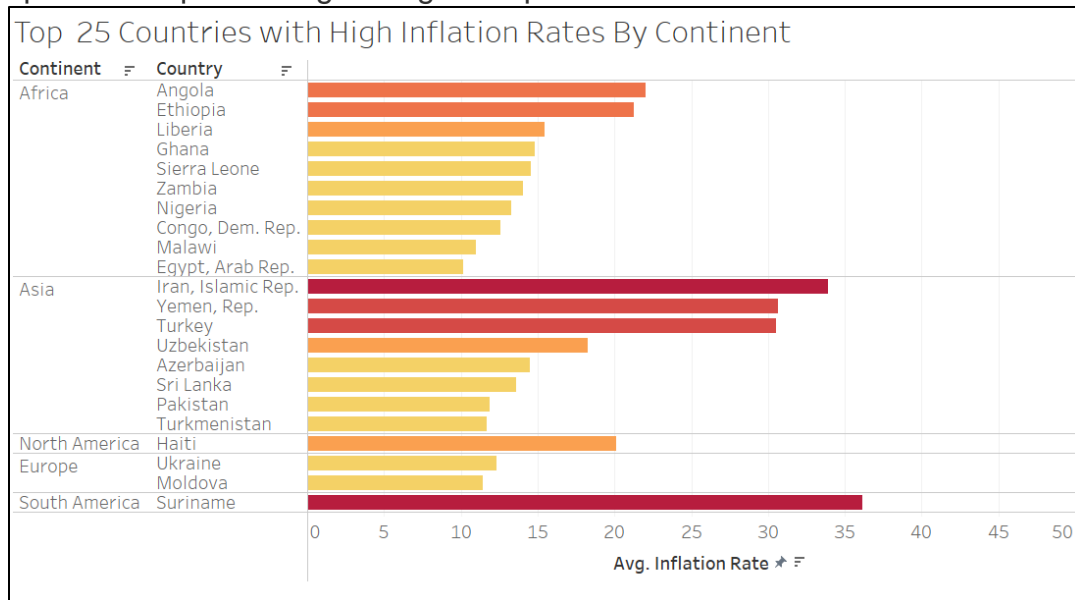


It is clearly understandable from the chart that the top Inflation Price is Headline Consumer Price and Food Consumer Price and Official Core Consumer Price is the

least. Also, except for Official Core Consumer Price inflation, almost all the other inflations are in almost the same proportion.

3. What are the countries with High Inflation Rates by Continent?

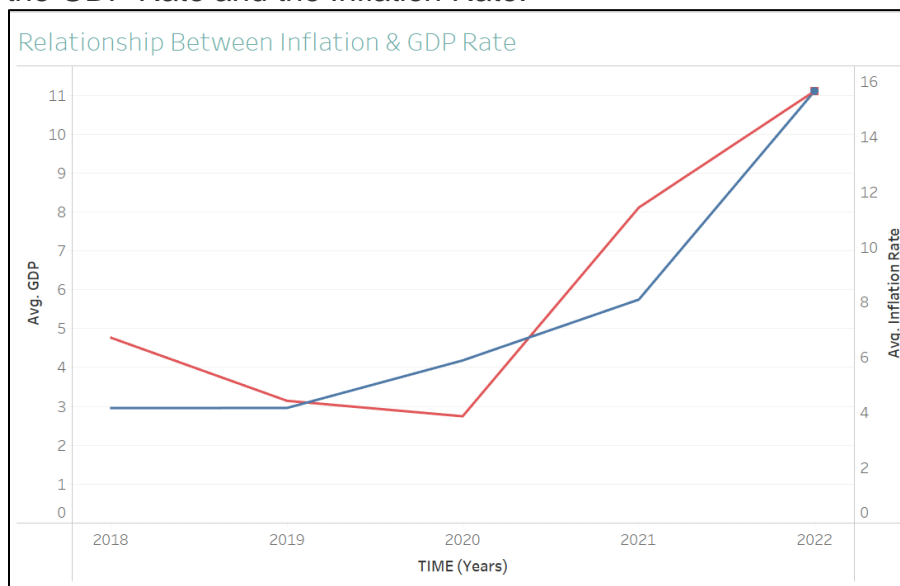
I used the Horizontal bar chart with the drill-down option. Also, I used the color option to help in distinguishing the top countries in each Continent.



It is clear from the graph that South America has the Highest Inflation Rate. An interesting insight is that Iran, Yemen, and Turkey have Inflation Rate has a similar range of Inflation Rates. Europe looks like the one country with lowered Inflation Rate making it the best country for people to live.

4. Is there a correlation between the GDP Rate and Inflation Rate in different countries over the years?

Here I chose to use the lined chart to show how is the trend over the years between the GDP Rate and the Inflation Rate.

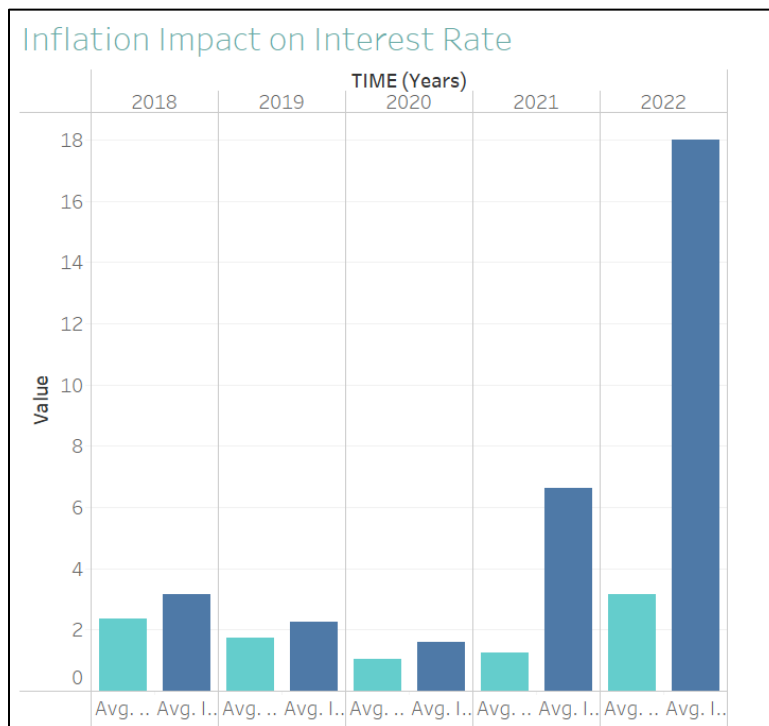


From the chart it is evident that the GDP and inflation have an inverse relationship. A high rate of inflation can lead to a decrease in the GDP rate, as it can increase costs for businesses and consumers, reduce purchasing power, and discourage investment.

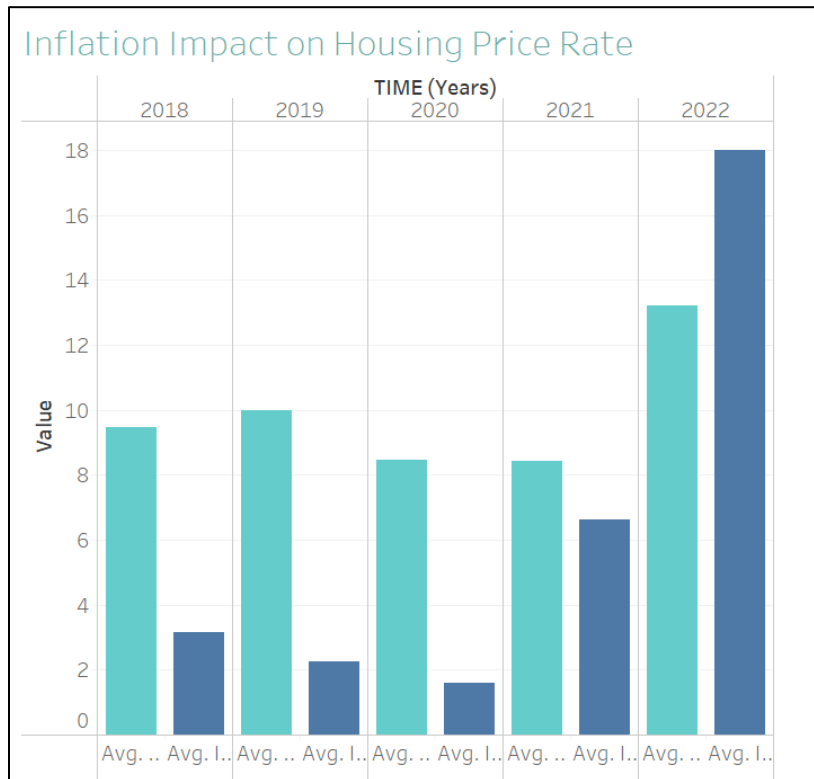
On the other hand, a low rate of inflation can be beneficial for economic growth, as it can increase consumer and business confidence, encourage investment, and make it easier for businesses to plan.

5. What are the impacts of the Inflation Rate on the Housing Price Rate and Interest Rate?

Here I chose to use the double bar chart to show how is the trend over the years between the Interest Rate and the Inflation Rate.



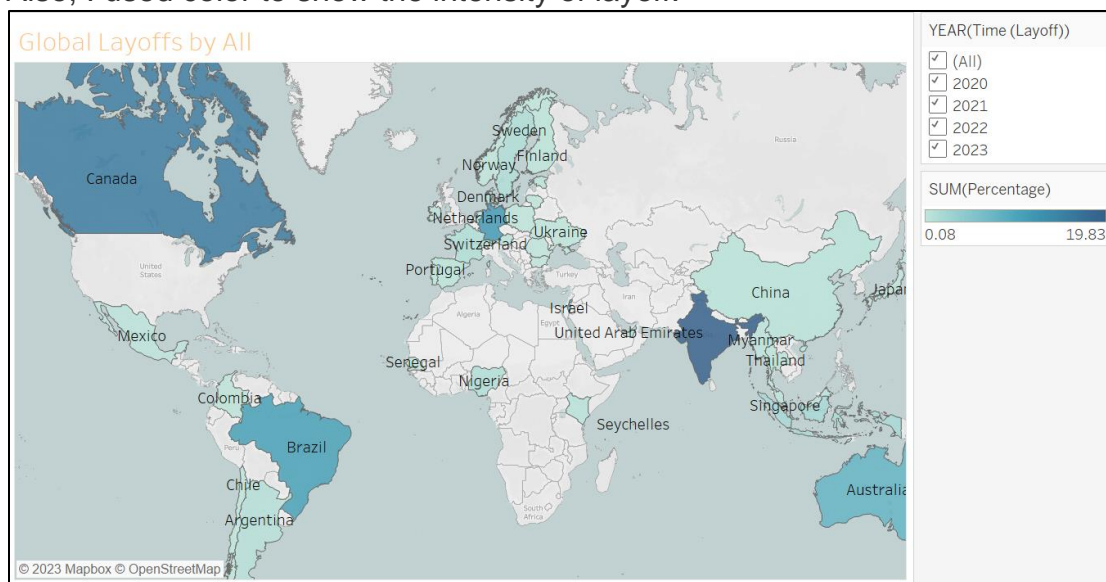
It is understandable from the graph that they both are interlinked to each other. When the Inflation goes high, the interest goes high like in 2022. Inflation can lead to an increase in interest rates, as lenders may demand higher interest rates to compensate for the decrease in purchasing power caused by inflation. High inflation rates can also lead to a decrease in the demand for bonds, which can cause bond prices to decrease and interest rates to increase.



From this graph it is evident that housing price rate and Inflation go hand in hand. Both rates shoot up so high in the year 2022.

6. Which countries had the highest layoff percentage in the last 3 years?

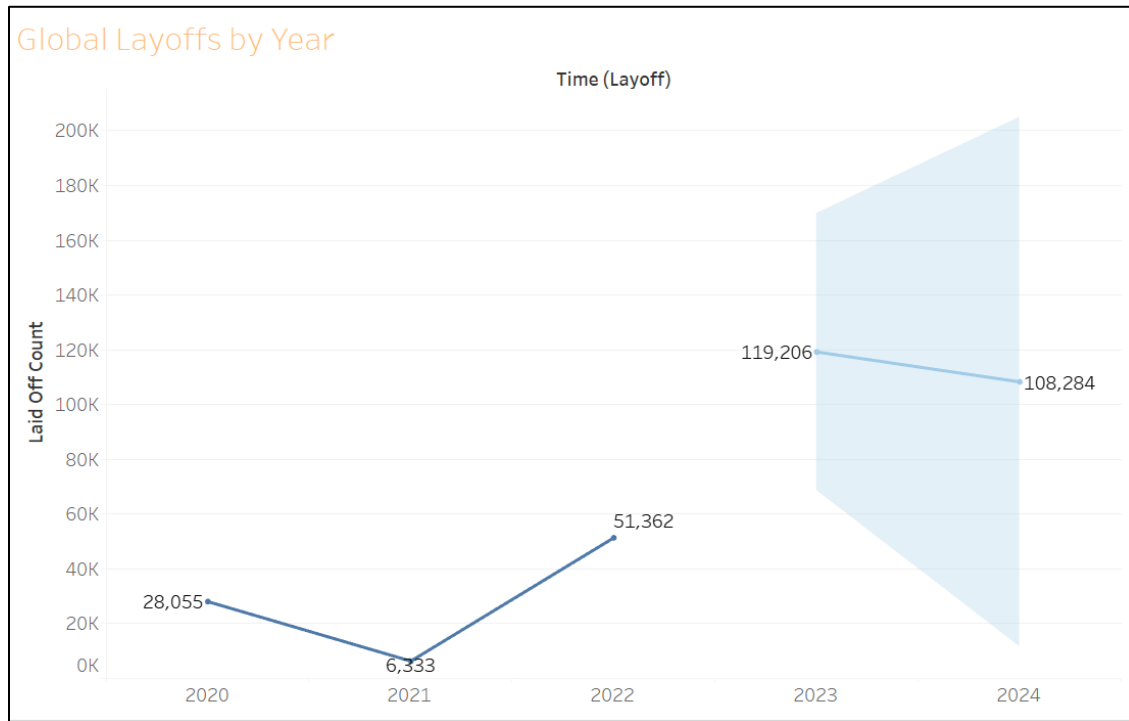
I used the map in this scenario, as I would like to see the layoff percentage globally. Also, I used color to show the intensity of layoff.



From the map, it is evident that on comparing past years from 2020 and 2023, India, and Canada have the highest layoff percentage.

7. Try and predict how much would be the layoffs count globally in the future?

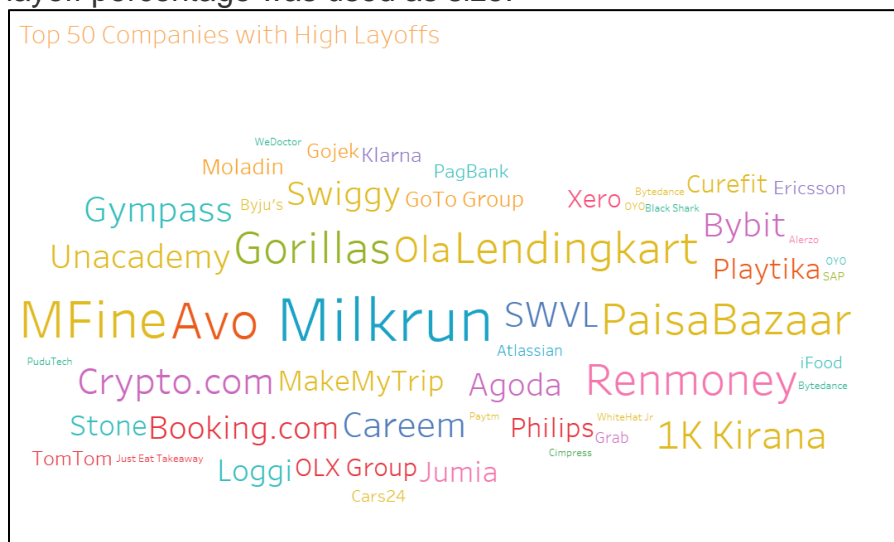
Here I tried to use the forecast capability of Tableau to predict the layoff count in the future.



As per the prediction it is expected that the number of layoffs would be 108284 in 2024. The visualization makes it evident that the recessions are most likely to end eventually if not drastically.

8. Which are the top companies that laid off the maximum number of employees?

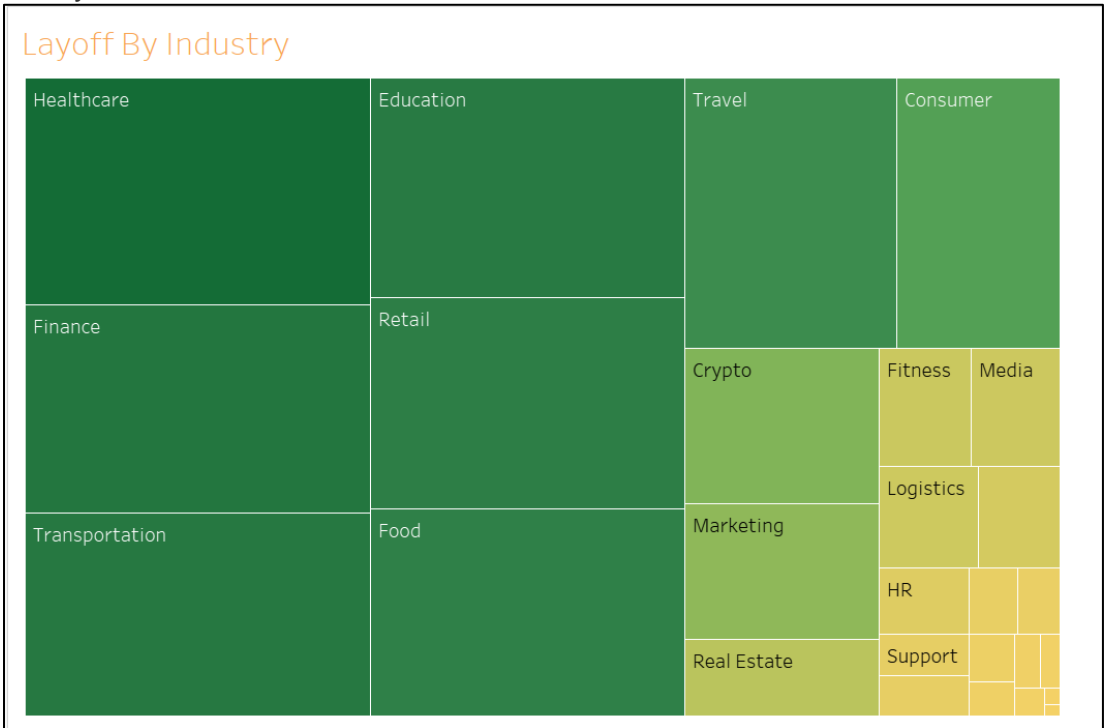
Here I used the Text option in the chart to show the name of the company and the layoff percentage was used as size.



The companies that did maximum firing of employees are Milkrun, Avo, and MFine.

9. Which are the industries that had the highest layoffs?

I used the tree maps chart to show the industries that had the highest and lowest layoffs.

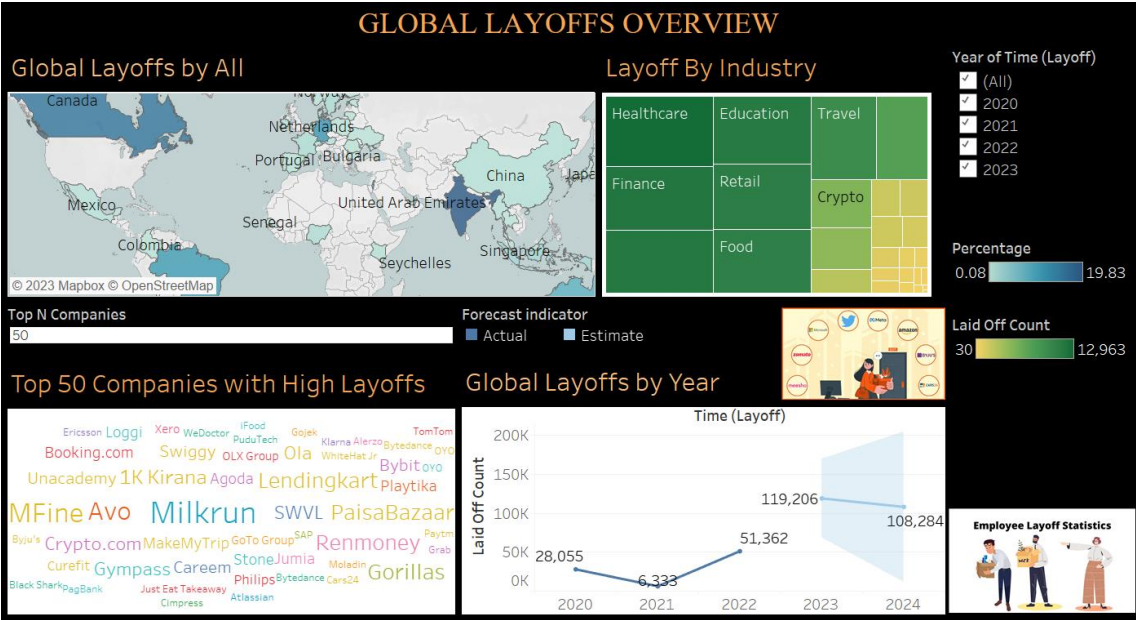


Healthcare, Finance, and Transportation industry had the highest layoffs. Legal and Energy are the industries with the lowest layoffs.

Dashboards:

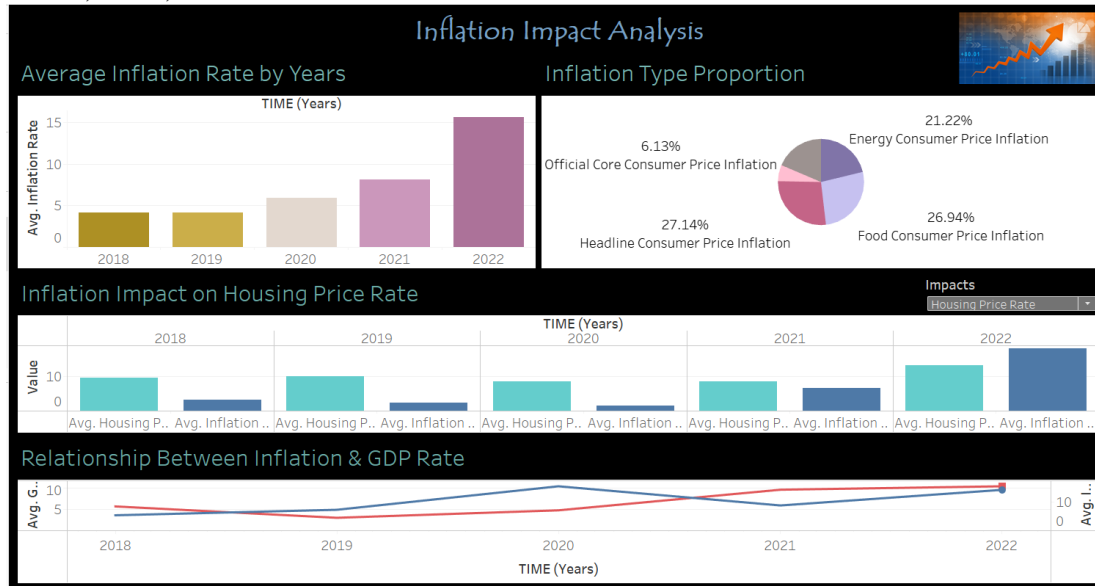
Dashboard 1: Global Layoffs Overview

An interactive dashboard is formed based on the graphs that are related to layoffs. This dashboard gives the detail on what’s the layoff trend over the years, what industries have the most layoffs, and details on which company.



Dashboard 2: Inflation Impact Analysis

An interactive dashboard is formed based on the earlier created graphs created and when all these data visualizations are brought together the dashboard conveys a very interesting meaning together. This dashboard helps in giving an overall picture of the impacts of Inflation on Housing Prices, GDP, and Interest Rate of countries all over the world.



CONCLUSIONS

From the above graphs and effective visualization, the relationship between Inflation Rate is clear between GDP, Housing Price Rate, and Interest Rate. The Inflation Rate goes hand in hand with Housing Price Rate and Interest Rate. However, the relationship between housing prices and inflation can be influenced by a variety of other factors, such as changes in interest rates, supply and demand for housing, and government policies related to housing and the economy. For example, if interest rates rise, it can lead to a decrease in demand for housing and a subsequent decrease in housing prices, even if inflation is still high.

Gross Domestic Product (GDP) and inflation have a complex relationship that can be influenced by a range of factors. In general, when the GDP of a country is growing, it can put upward pressure on prices and cause inflation to rise. This is because as the economy grows, demand for goods and services can increase, and this increased demand can push up prices. Additionally, as the cost of producing goods and services increases, producers may need to raise prices in order to maintain their profit margins.

In regard to the Layoff overview, on providing the given data it has predicted more likely the recession would come down over 2023 year eventually.

Additional Research Questions:

1. How have inflation rates varied across various economic sectors, such as healthcare and education, and what factors may have caused these variations?
2. Which policies have proven to be most successful at reducing inflation without impairing economic expansion?
3. What are some new inflationary trends, such as the rise of digital currencies or the effects of climate change on commodity prices, and how might they influence inflation rates in the future?

4. What psychological effects does inflation have on people, and how do these effects differ across various demographic groups?
5. How does inflation affect the environment, and what does that mean for sustainability?
6. What are some cross-cultural differences in attitudes toward inflation and how do cultural factors affect how it is perceived and managed?
7. How does the non-profit sector manage the effects of inflation on its funding and operations? What is the impact of inflation on the non-profit sector?
8. How does inflation affect the entertainment sector, and what are some tactics that media companies can employ to mitigate its effects on consumer demand and production costs?
9. How does artificial intelligence-based price discrimination affect consumer welfare and inflation?
10. How does the public's support for the government change with inflation?
11. How does inflation impact the rate of crime?

Tableau Workbook Explanation:

Please find the variety of visualization used in the workbook.

Simple Visualization (Sheet Names):

1. Inflation Rate Over 5 years
2. Inflation Type Proportion
3. Housing Price Over 5 years
4. GDP Rate By Continent

Advanced Visualization (Sheet Names):

1. Top N Countries with Low-Interest Rate By Continent (Parameter, Filter)
2. Top 25 Countries High Inflation (Drill Down)
3. Top N Companies with High Layoffs (Parameter)
4. Inflation Impact on Housing Price /Interest Rate (Parameter)

Animations, Forecast, and Maps (Sheet Names):

1. Global Layoffs in the Year N (Maps)
2. Global Layoffs (Forecast)
3. Inflation Over GDP (Animation)

Dashboard:

1. Layoff Overview
2. Inflation Impact Analysis