PROJECT PROPOSAL

Layoff Statistic in USA

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I. Overview

At a time when the entire globe was dealing with one of the greatest economic crises, the layoff term became familiar with everyone where in the U.S alone, there were 15.4 million layoffs in 2022, with 6.9 million layoffs between August and December 2022. In the current global economy, when businesses are under more pressure to reduce costs and increase efficiency, as well as face more competition, the problem of layoffs is particularly urgent. As a result, many employees face the possibility of losing their employment, especially in sectors that are vulnerable to automation or outsourcing. The ongoing COVID-19 pandemic, which has caused considerable job losses and economic upheaval in several nations, makes the issue much worse.

A comprehensive strategy that considers the economic, social, and ethical ramifications of workforce reduction is needed to address the issue of layoffs. Promoting laws and procedures that help with job growth, education and training, and social safety nets for impacted workers are some examples of this. Additionally, it entails safeguarding the rights and wellbeing of employees and communities adversely affected by layoffs while encouraging innovation and entrepreneurship in sectors with the potential for development and sustainability.

II. Objective

As stated by the above section, to be able to comprehend the layoff situation fully, many factors should be considered thoroughly and generalized visualization is needed for humans to understand what is going on fully. Thus, this project aims to visualize the trend of the layoff situation along with its association with other factors, such as recession predictions,... to help viewers understand the lying problems and what causes the biggest layoff in the tech industry.

III. Methodology

Step 1: retrieve data: layoffs in USA by state and industry

	State	Company	City	Number of Workers	WARN Received Date	Effective Date	Closure/Layo	Temporary/Permanent	Union	Region	County	Industry	Notes
1525	Arizona	AB Car Rental Services, Inc.	Phoenix	70	9/28/2010					7			
1526	Arizona	Xanodyne Pharamaceuticals	Gilbert	3	9/21/2010					7			
1527	Arizona	O'Reilly Automotive, Inc.	Phoenix	45	9/9/2010					7			
1528	Arizona	Dole Fresh Vegetables, Inc.	Yuma	652	8/27/2010					9			
1529	Arizona	Whirlaway Corporation	Tempe	150	8/10/2010					7			
1530	Arizona	Citigroup, Inc.	Phoenix	272	7/30/2010					7			
1531	Arizona	Coach-Net Services Group	Lake Havasu City	160	7/27/2010					11			
1532	Arizona	Microsemi Corporation	Phoenix	255	7/12/2010					7			
1533	Arizona	Crowne Plaza Hotel	Phoenix	79	6/30/2010					7			
1534	Arizona	Embassy Suites Hotel (Phoenix)	Phoenix	73	6/14/2010					7			
1535	Arizona	Marketfare Foods	Phoenix	84	6/11/2010					7			
1536	Arizona	ancom of Arizona L.P. dba Veolia Tra	Phoenix	953	4/28/2010					7			
1537	California	Managers Group at the DoubleTree	Newark	63	7/1/2021	7/31/2021	.ayoff	Permanent			Alameda County		
1538	California	IAP Worldwide Services Inc.	Fresno	108	7/1/2021	7/29/2021	.ayoff	Permanent			Fresno County		
1539	California	Farmgirl Flowers	Watsonville	72	7/1/2021	6/29/2021	losure	Permanent			Santa Cruz County		
1540	California	Francis Ford Coppola Presents, LLC	Geyersville	90	7/1/2021	8/2/2021	.ayoff	Permanent			Sonoma County		
1541	California	I. Charles Inc dba Use Pallet Compar	Fresno	56	7/6/2021	9/3/2021	losure	Permanent			Fresno County		
1542	California	Perspecta Inc. dba Peraton Inc.	El Centro	1	7/6/2021	6/30/2021	.ayoff	Permanent			Imperial County		
1543	California	Perspecta Inc. dba Peraton Inc.	Ridgecrest	1	7/6/2021	6/30/2021	.ayoff	Permanent			Kern County		
1544	California	Perspecta Inc. dba Peraton Inc.	Lemoore	5	7/6/2021	6/30/2021	.ayoff	Permanent			Kings County		
1545	California	Perspecta Inc. dba Peraton Inc.	Monterey	1	7/6/2021	6/30/2021	.ayoff	Permanent			Monterey County		
1546	California	Perspecta Inc. dba Peraton Inc.	Seal Beach	3	7/6/2021	6/30/2021	.ayoff	Permanent			Orange County		
1547	California	Perspecta Inc. dba Peraton Inc.	Moreno	1	7/6/2021	6/30/2021	.ayoff	Permanent			Riverside County		
1548	California	Perspecta Inc. dba Peraton Inc.	Norco	2	7/6/2021	6/30/2021	.ayoff	Permanent			Riverside County		
1549	California	Chick-fil-A, Inc.	Ontario	110	7/6/2021	9/4/2021	losure	Temporary			San Bernardino County		
1550	California	Perspecta Inc. dba Peraton Inc.	wentynine Palm	1	7/6/2021	6/30/2021	.ayoff	Permanent			San Bernardino County		
1551	California	Perspecta Inc. dba Peraton Inc.	San Diego	2	7/6/2021	6/30/2021	.ayoff	Permanent			San Diego County		

Table 3.1 - Data from layoffdata.com [1]

Step 2: clean data, change the format of data

```
{} data.json > ...
  1  [
  2  {
  3  "State": "Alabama",
  4  "Company": "Primus Solutions, LLC",
  5  "City": "Daleville",
  6  "Number of Workers": 132
  7  },
  8  {
  9  "State": "Alabama",
 10  "Company": "Corsicana Mattress Company",
 11  "City": "Jasper",
 12  "Number of Workers": 42
 13  },
 14  {
 15  "State": "Alabama",
 16  "Company": "Portfolio Recovery Associates LLC",
 17  "City": "Birmingham",
 18  "Number of Workers": 133
 19  },
 20  {
 21  "State": "Alabama",
 22  "Company": "Crothall Healthcare Environmental Services",
 23  "City": "Gadsden",
 24  "Number of Workers": 58
 25  },
```

Figure 3.2 - Data format

Step 3: use Exploratory Data Analysis to gain the insight of the data and extract features of the data to visualize data better.

IV. Anticipated impact

Figure 4.1:

- Must-have features: show state details by clicking on the state, change year-by-year data, compare data by color
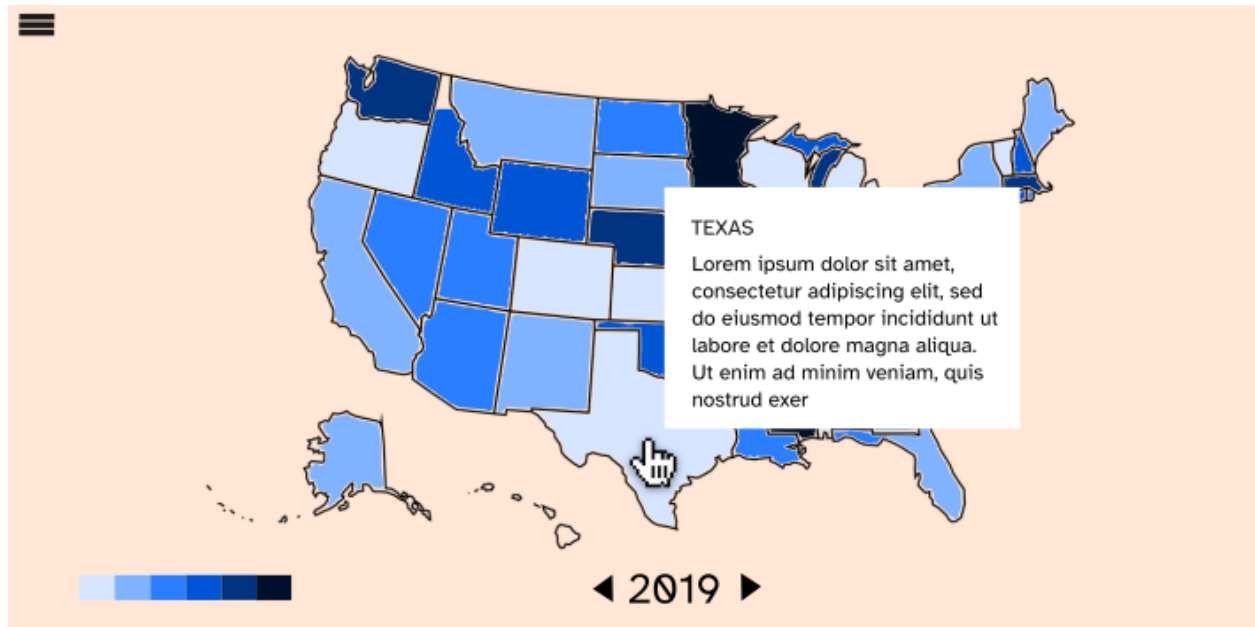- Optional features: description of state when hovered over

Figure 4.1 - Layoff data mapped on US map

Figure 4.2:

- <u>Must-have features:</u> show industry details by clicking on the industry, change year-by-year data
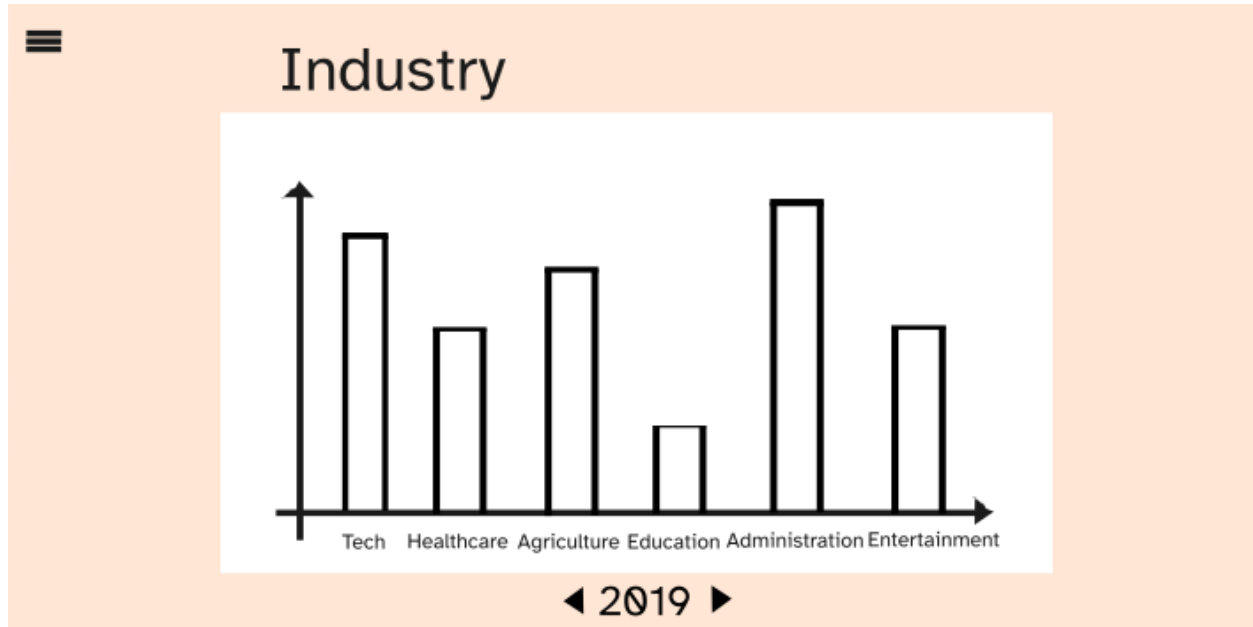

Figure 4.2 - Bar chart comparing industry against each other

Figure 4.3, 4.4:

- Must-have features: show line chart
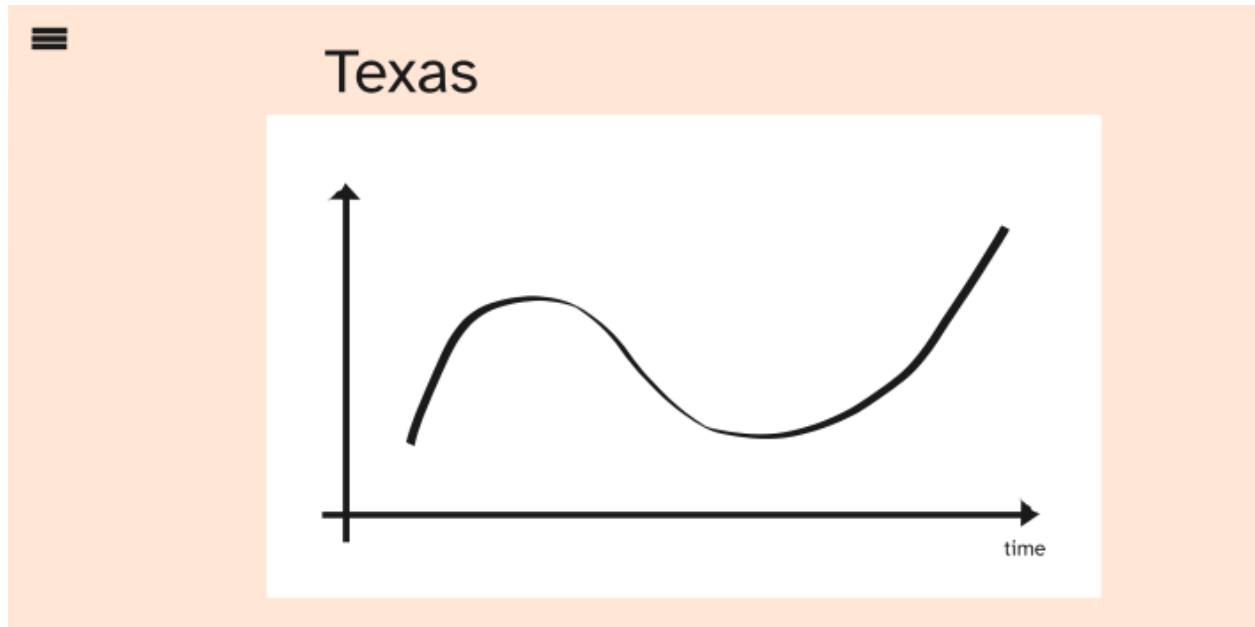- Optional features: show coordinates for each state/industry

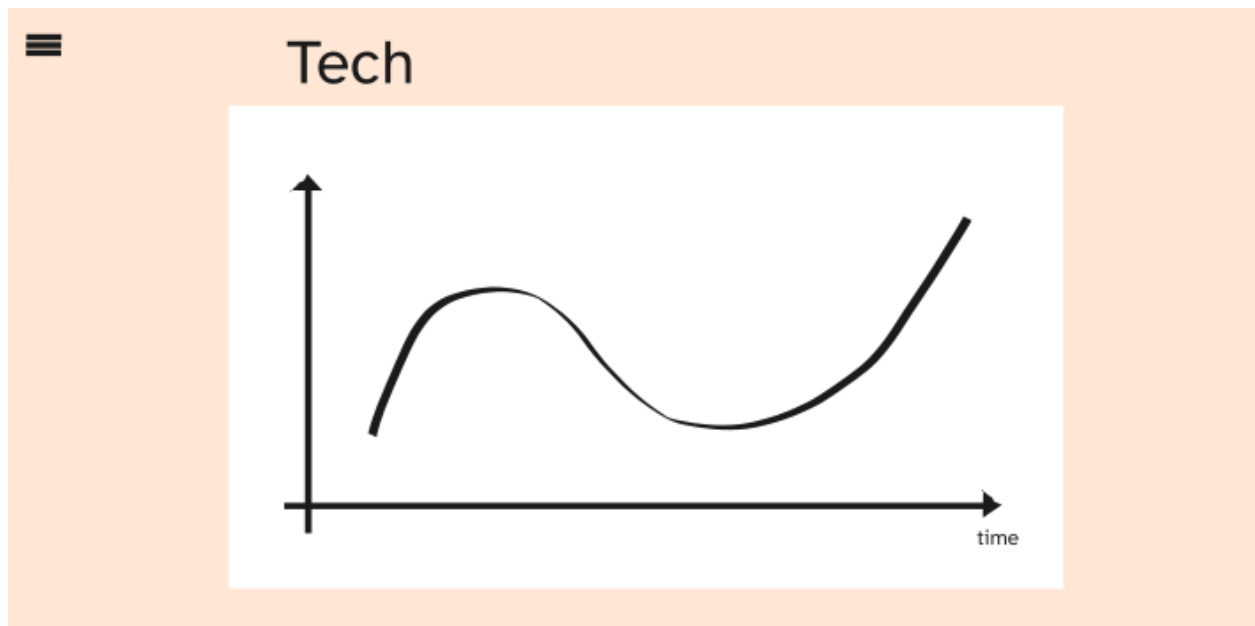**Figure 4.3** - After clicking on specific state, showing layoff over time

Figure 4.4 - After click on a specific bar chart, showing layoff over time

V. Schedule

Requirement: 2 weeks

Implementation: 4 weeks

Demo: 1 week

Presentation: 1 week

VI. References

[1]: "WARN layoff data", https://layoffdata.com/data/