Predicting Tech Industry Layoffs: A Regression Model

Kerry Effinger
Dr. Robert Kelley
Bellarmine University Data Science Program

BELLARMINE UNIVERSITY

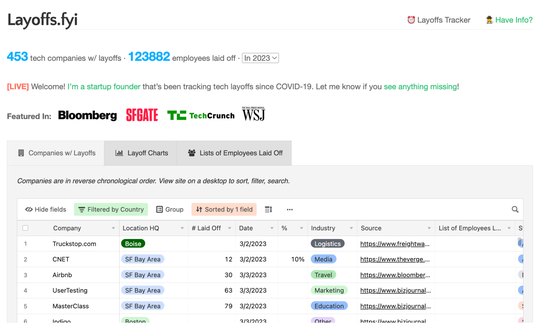
With news of companies laying off employees in technology positions constantly appearing in headlines, it seems as if there is a never-ending trend of tech layoffs. To investigate the characteristics of companies engaging in these layoffs and the frequency with which they occur, data was collected on layoff events as well as information about the company that made the decision to let these people go. The attributes of these companies was studied to find patterns and to create a model that can predict whether a company in the technology industry will conduct a mass layoff and how large it will be. Finally, the results and findings are summarized visually in a dynamic dashboard which shows many different metrics from the project.

OBJECTIVES

- Analyze existing market data about companies which have laid off large numbers of employees
- Create a model into which one can enter information about a company and then return the number of employees that are likely to be laid off given current conditions
- Design informative and easy-to-read dashboard that summarizes work from semester
- Expand skills in database management, data analysis, and dashboard design

METHODS

Data Collection: Layoffs.fyi is a website which conveniently tracks layoffs in the tech industry almost daily and presents them in a spreadsheet format. The majority of data collected for this project comes from this website. Some data from Yahoo Finance and other financial sources was also included.



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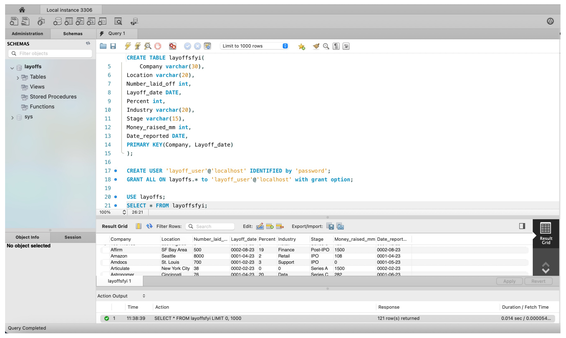

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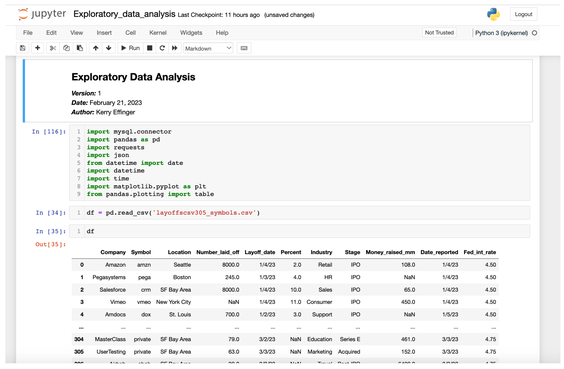

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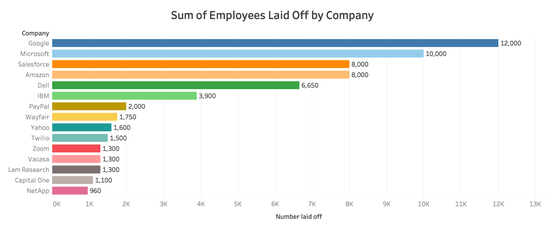

MODEL

RESULTS

- Some obstacles during project:
  - Inability to easily download data from layoffs.fyi
  - MySQL Workbench would crash constantly
- Gained valuable experience with several data science tools
- Exposed to new methods such as web scraping and connecting MySQL to Python

CONCLUSIONS

REFERENCES

- Layoffs.fyi
- https://fred.stlouisfed.org/series/FEDFUNDS
- https://www.mysql.com/products/workbench/
- https://finance.yahoo.com/
- https://www.google.com/finance/?hl=en
- https://www.linkedin.com/feed/
- https://www.tableau.com/

CONTACT

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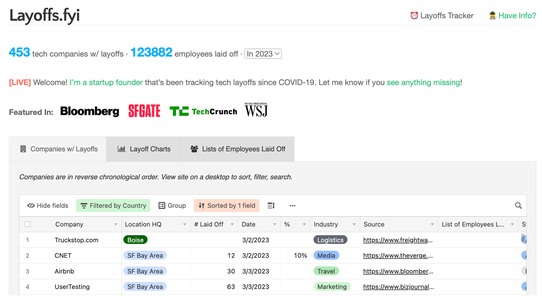

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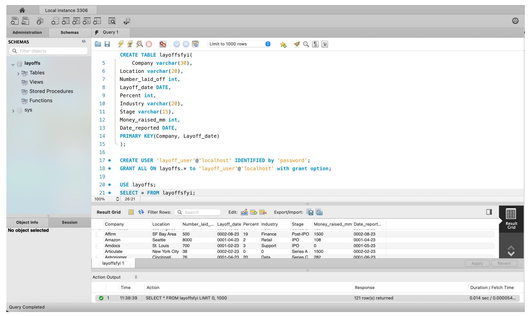

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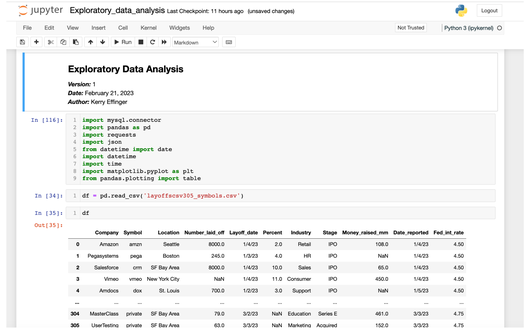

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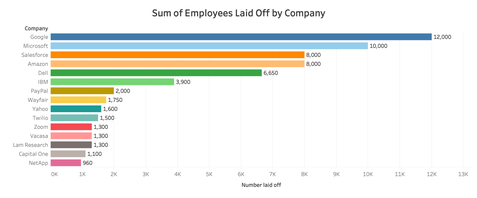

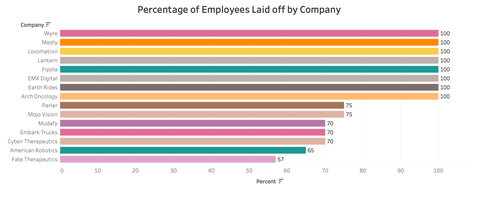

RESULTS

Exploratory data analysis found
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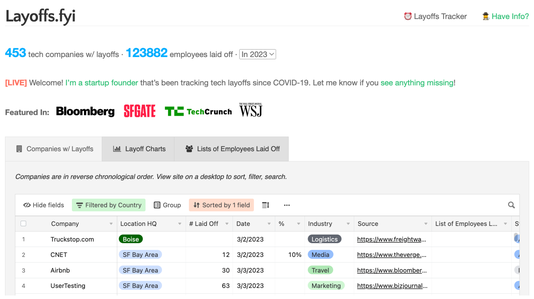

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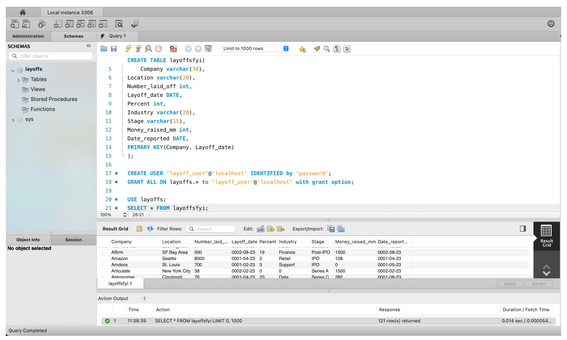

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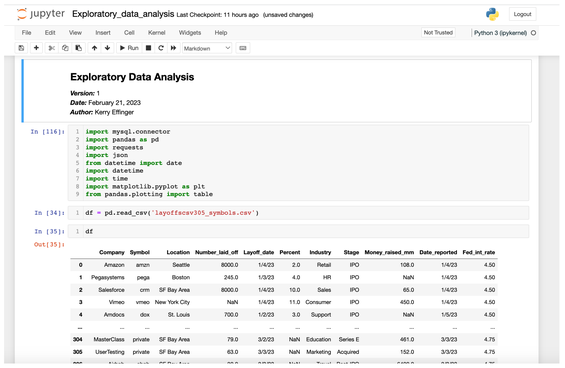

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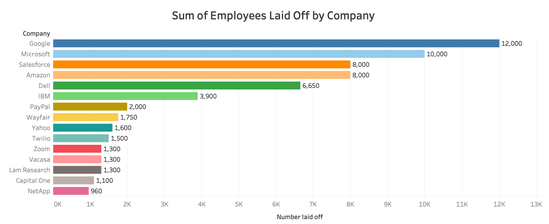

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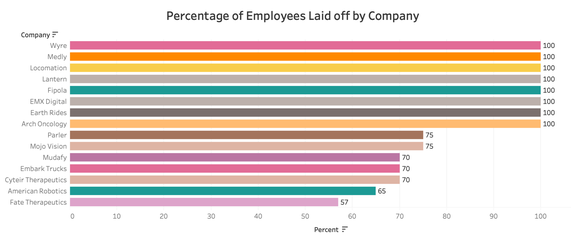

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