DATA ANALYSIS PORTFOLIO

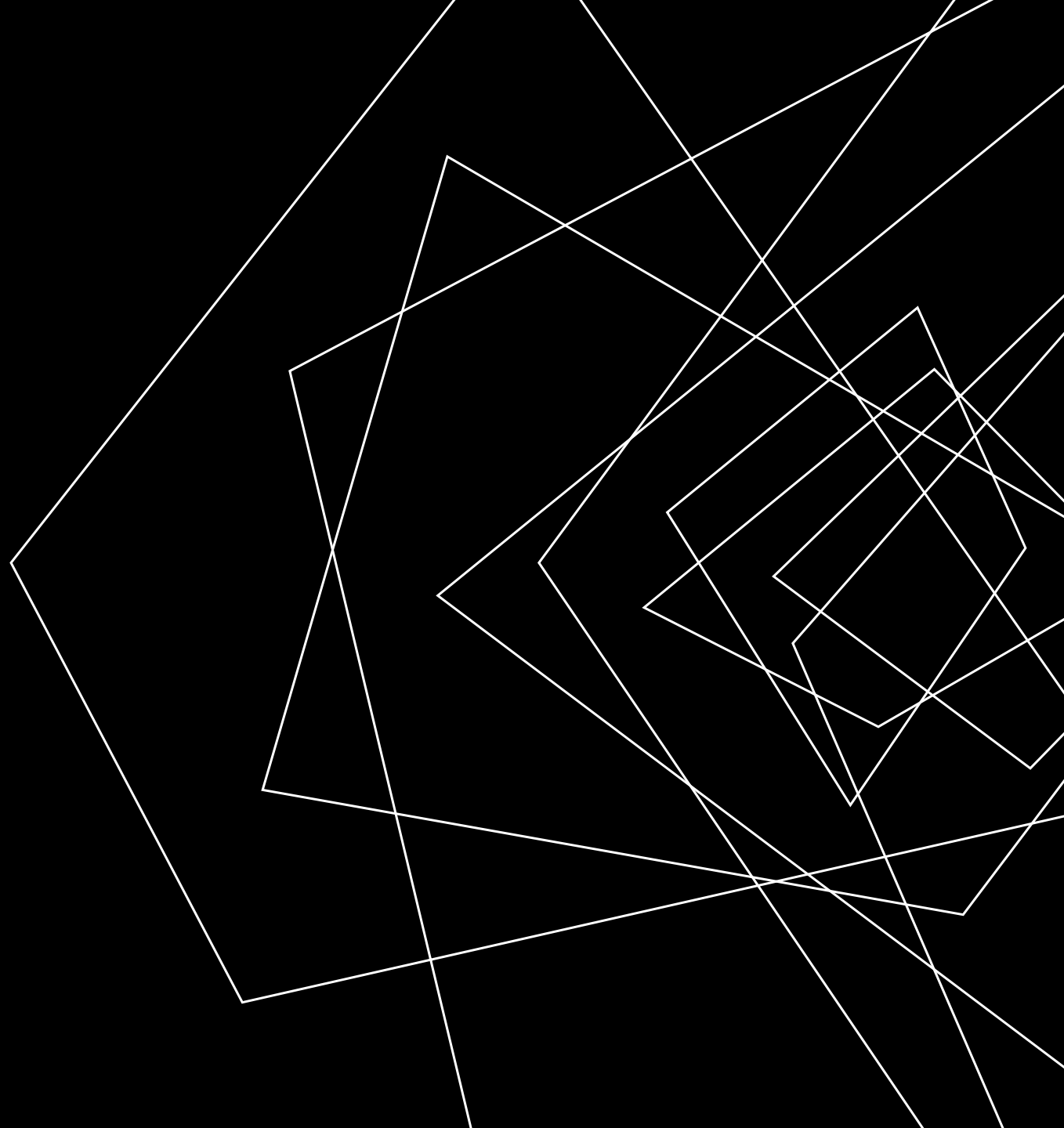## CASE STUDIES

Eric Riesberg

PROJECTS

GameCo. – Video Game Sales

Influenza – Resource Allocation

Rockbuster – Rental Analysis
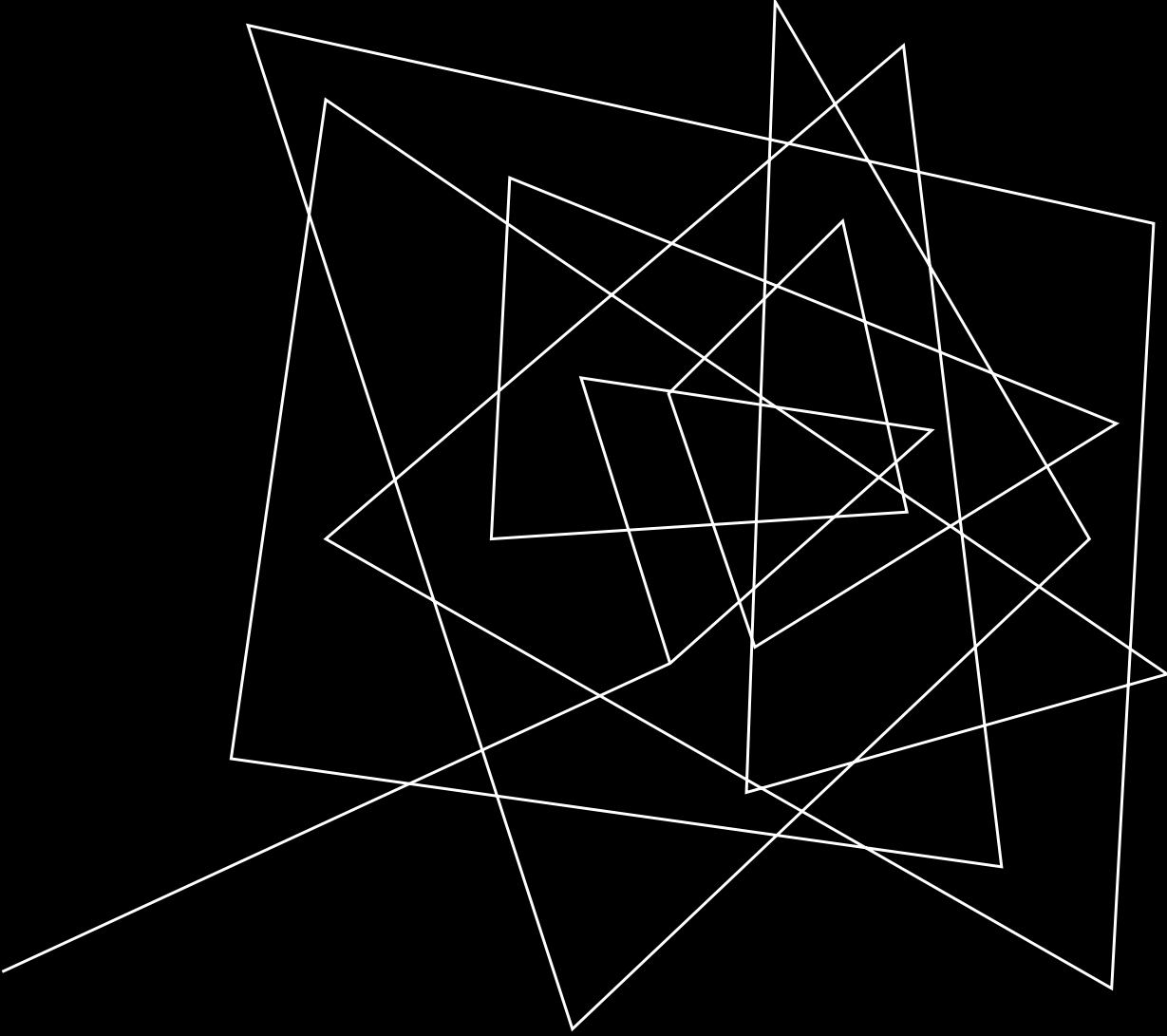
Instacart – Grocery Analysis

Open Exploratory Project

GAMECO. – VIDEO GAME SALES

GameCo. is a fictional video game distributor that wants to use it's historical data to gain insights on how market more effectively in the future.

GAMECO. – VIDEO GAME SALES

SKILLS / PROCEDURES

- Grouping Data
- Summarizing Data
- Descriptive Analysis
- Visualizing Results
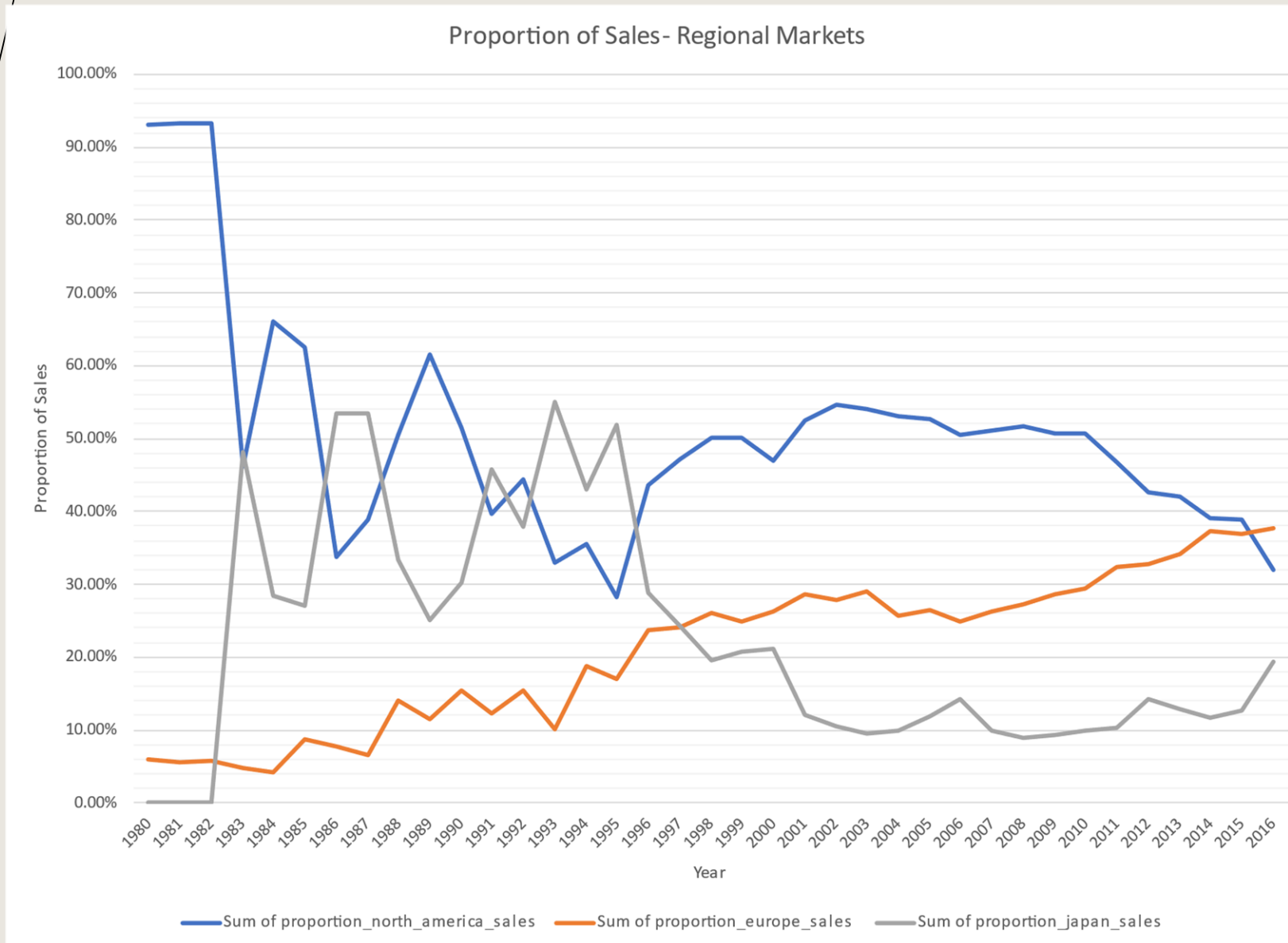- Presenting Results

TOOLS USED

- Excel
- Powerpoint

GAMECO. RESULTS

- Dataset provided by GameCo, including Name, Platform, Year, Genre, Publisher, and Sales among various regions.
- Excel was used to clean, aggregate, and analyze data.
- Excel was used to generate charts and present findings.
- Visualization on following slide.

GAMECO. RESULTS – CONT.

Proportion of Sales- Regional Markets

Legend: Sum of proportion_north_america_sales, Sum of proportion_europe_sales, Sum of proportion_japan_sales
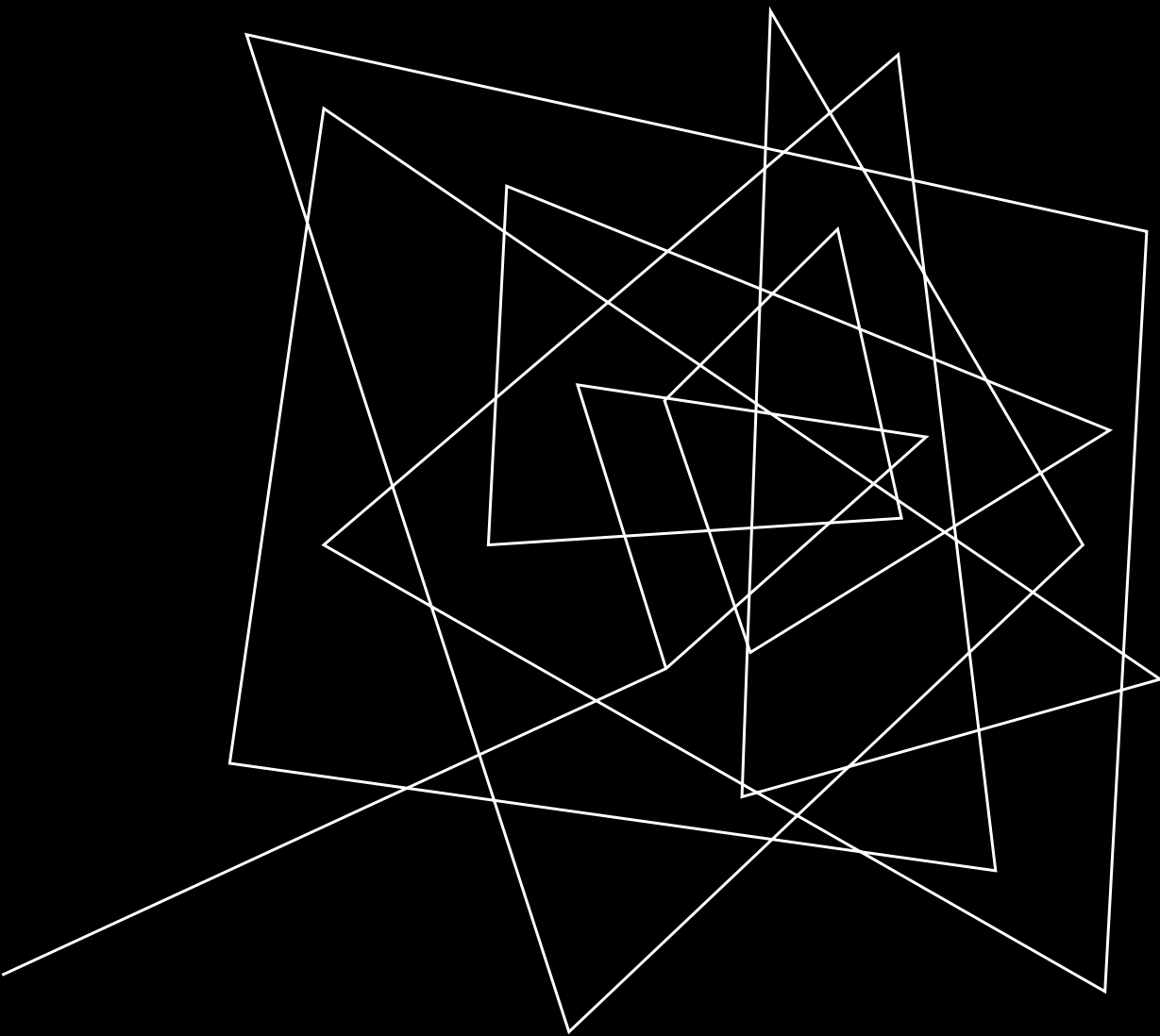
INFLUENZA – RESOURCE ALLOCATION

Motivation: The United States has an influenza season where more people than usual suffer from the flu. Some people, particularly those in vulnerable populations, develop serious complications and end up in the hospital. Hospitals and clinics need additional staff to adequately treat these extra patients. The medical staffing agency provides this temporary staff.

Objective: Determine where to send staff to help manage the influenza season.

INFLUENZA — RESOURCE ALLOCATION

SKILLS / PROCEDURES

- Data Cleaning
- Data Integration / Transformation
- Statistical Hypothesis Testing
- Visual Analysis
- Storytelling

TOOLS USED

- Excel
- Tableau

INFLUENZA - RESULTS

- Datasets provided by CDC and U.S. Census Bureau – Flu Related Deaths and Population
- Excel was used to clean, transform, integrate and analyze Data
- Tableau was used to visualize results and create storyboard surrounding data.
- Link to storyboard: https://public.tableau.com/app/profile/eric.riesberg/viz/Achievement2/Story1
- Link to video, talking through storyboard: https://youtu.be/yQYo00kxXSY
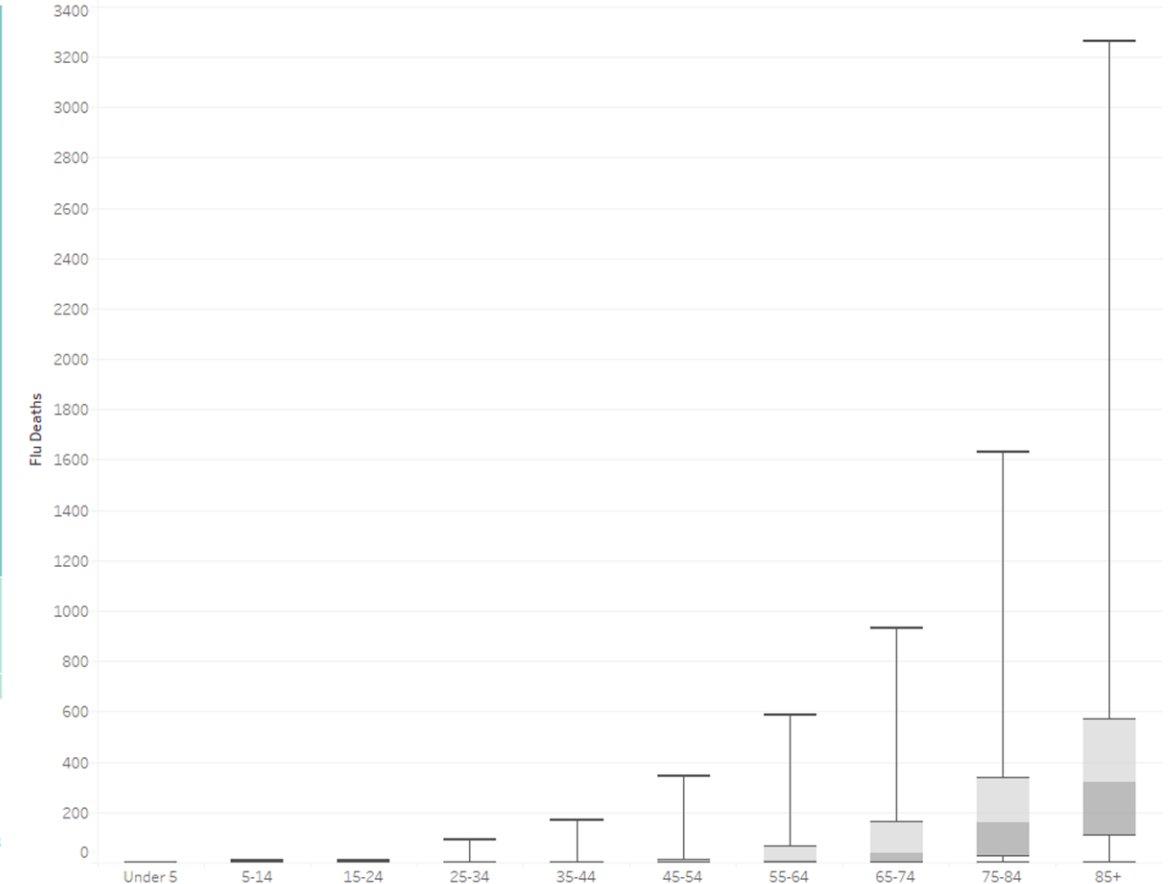- Example visual on next slide.

Flu Deaths vs Age

Age is an important factor driving vulnerability. As populations get older, they become susceptible to death by the flu at a higher rate than younger populations. This can be seen by the two charts below.
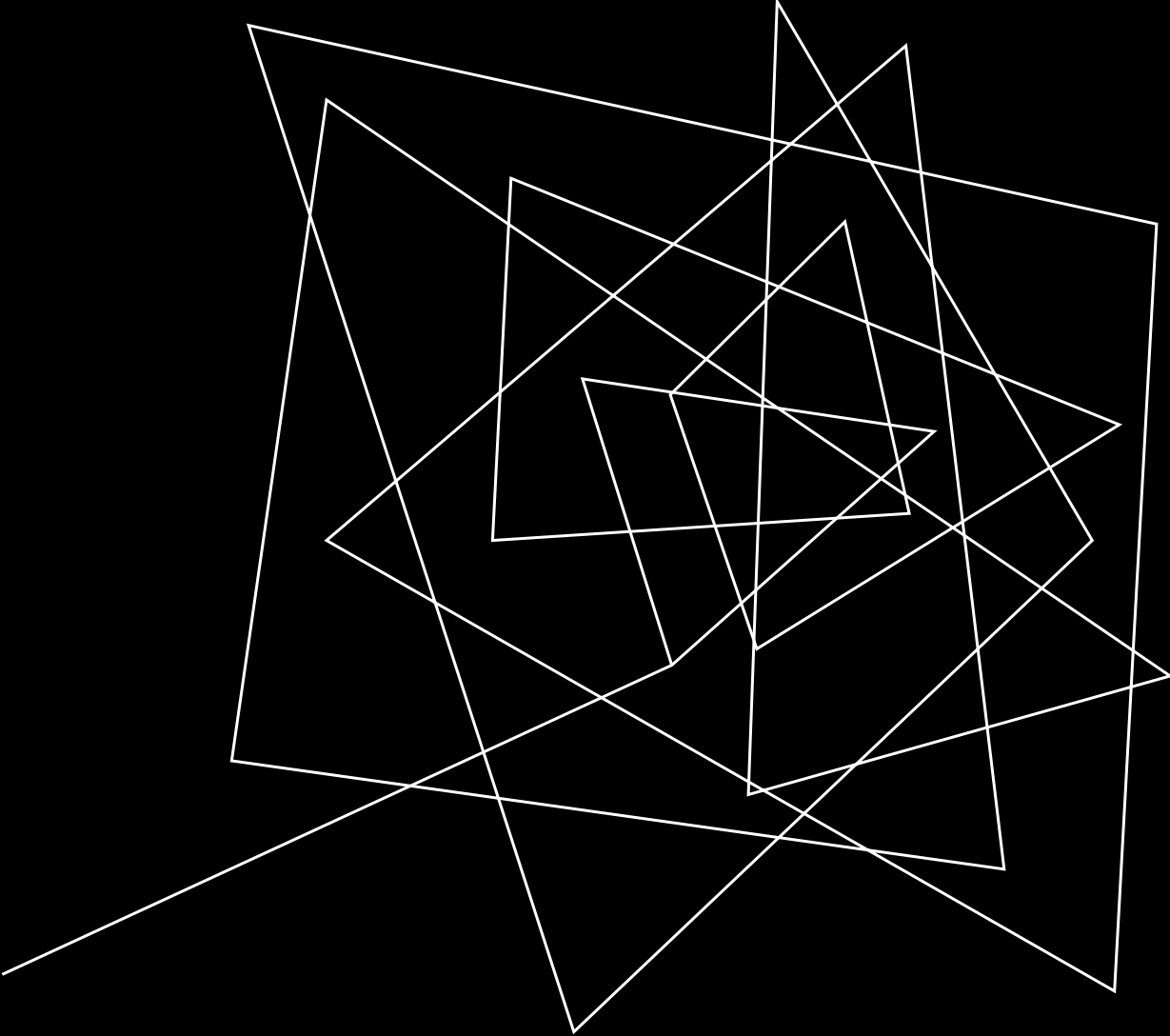
ROCKBUSTER – RENTAL ANALYSIS

Rockbuster is a movie rental company that is looking to understand it's current rental trends, and to answer the following questions:

- Which movies contributed the most/least to revenue gain?

- What was the average rental duration for all videos?

- Which countries are Rockbuster customers based in?

- Where are customers with a high lifetime value based?

- Do sales figures vary between geographic regions?

ROCKBUSTER – RENTAL ANALYSIS

SKILLS / PROCEDURES

- SQL
- Querying Relational Database
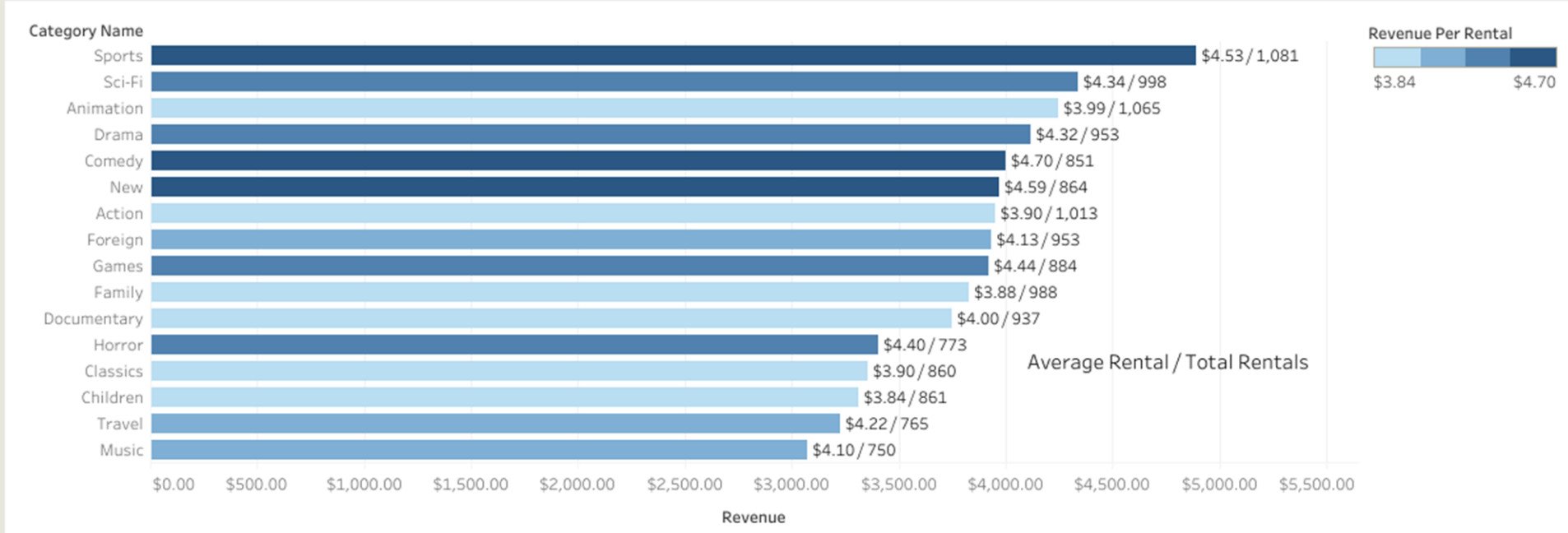- Filtering
- Subqueries
- CTEs

TOOLS USED

- PostgreSQL
- DBVisualizer
- Tableau

ROCKBUSTER - RESULTS

- Dataset provided by Rockbuster. Data dictionary included in GitHub to show relations between data.
- SQL queries used to parse and analyze data. DBVisualizer used to see relational database.
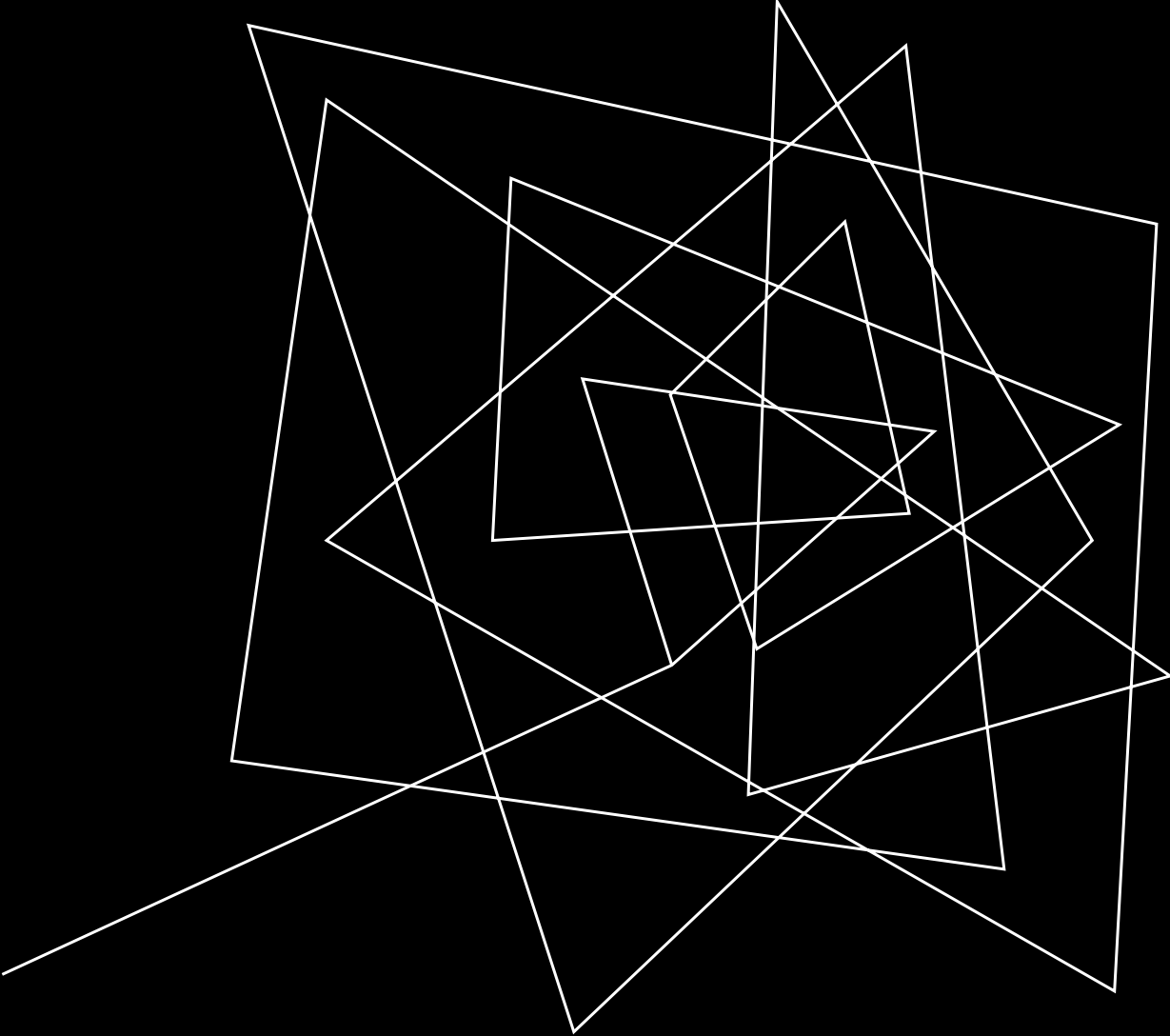- Tableau used for visualizations.
- Link to GitHub Repository:
  https://github.com/eriesberg/Rockbuster_Stealth_SQL_Data_Analysis

INSTACART – GROCERY ANALYSIS

Prompt: You're an analyst for an existing company, Instacart, an online grocery store that operates through an app. Instacart already has very good sales, but they want to uncover more information about their sales patterns. Your task is to perform an initial data and exploratory analysis of some of their data in order to derive insights and suggest strategies for better segmentation based on the provided criteria.
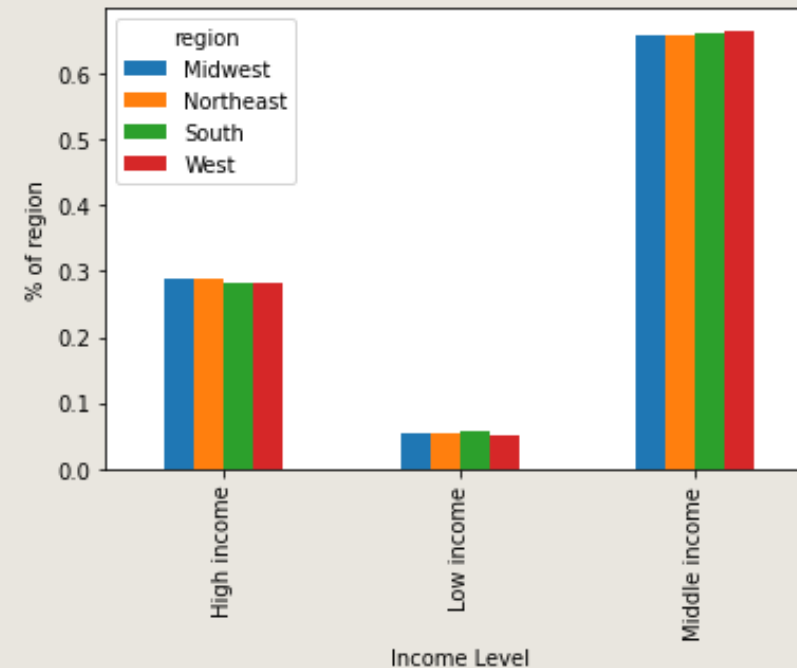
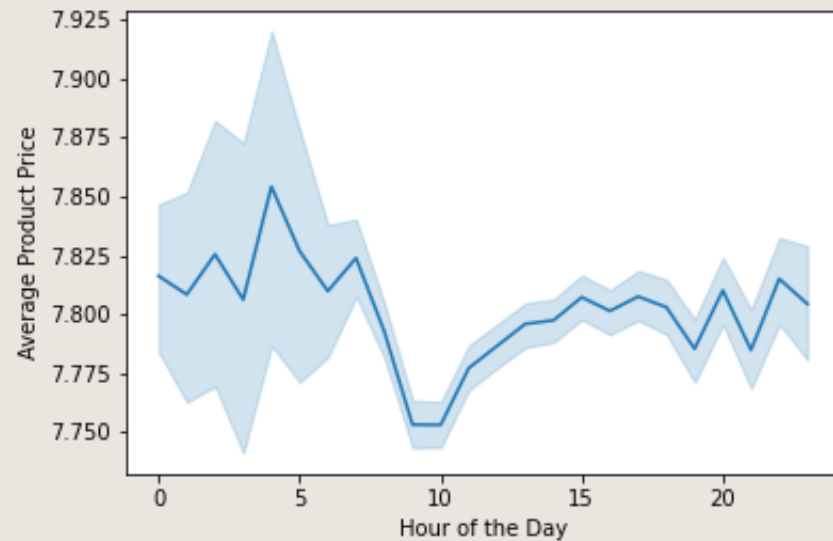# INSTACART — GROCERY ANALYSIS

SKILLS / PROCEDURES

- Data wrangling
- Data merging
- Deriving variables
- Grouping data
- Aggregating data
- Population flows

TOOLS USED

- Python
- Excel

INSTACART - RESULTS

- Open-source dataset provided by Instacart. Contains customer data, purchase history, product data.
- Data cleaned, aggregated, and analyzed using Pandas library in python.
- Visualizations made using MatPlotLib and Seaborn libraries in python.
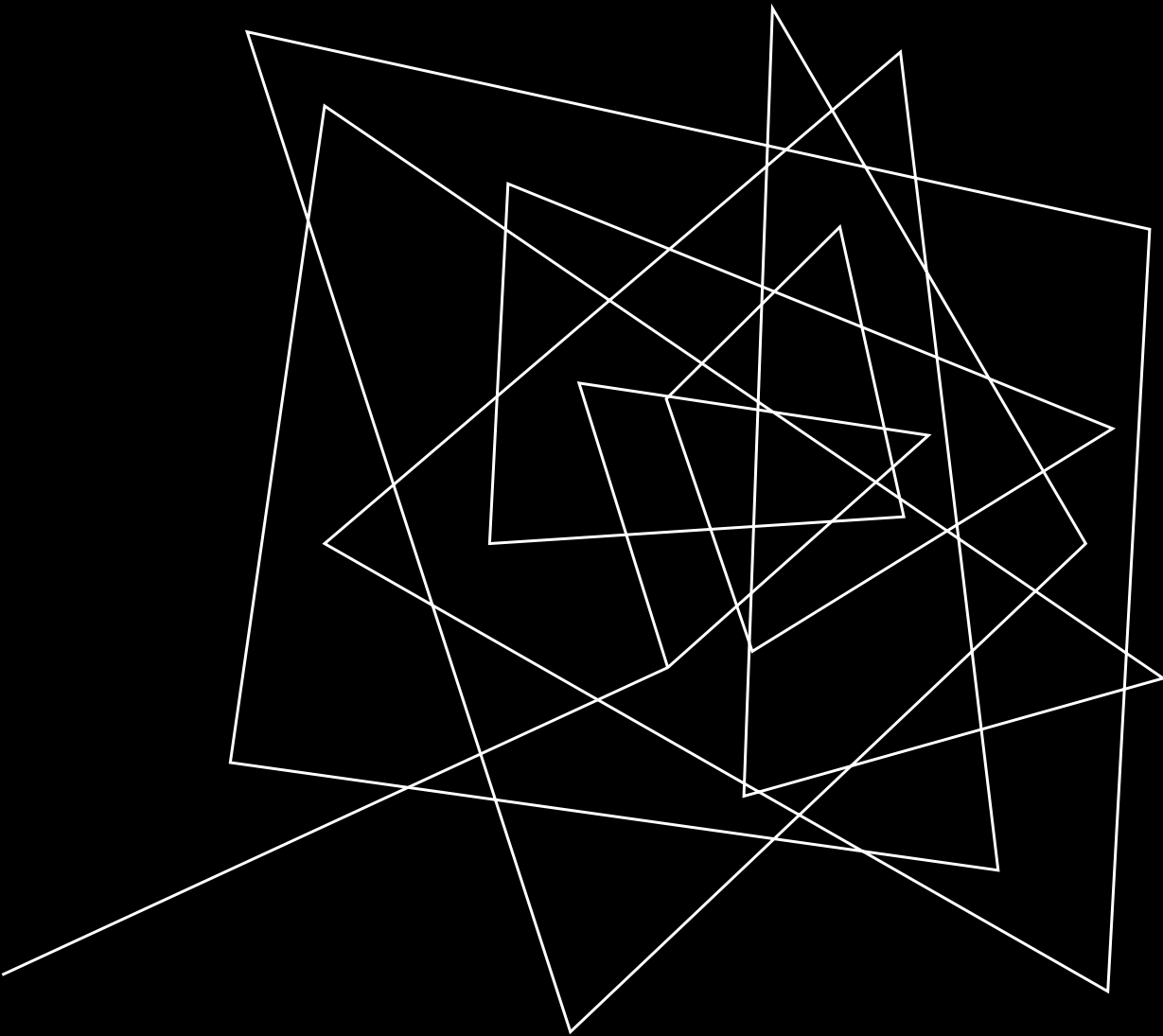- Link to GitHub Repository: https://github.com/eriesberg/Instacart_Python_Data_Analysis

UNEMPLOYMENT DATA ANALYSIS

Thesis: Unemployment in the United States is one of the
numbers that is most critical to the health of the Economy.
In trying to understand what can help to reduce inflation,
we looked at some of the different governmental benefits,
and how they relate to unemployment.

UNEMPLOYMENT DATA ANALYSIS

SKILLS / PROCEDURES

- Data wrangling
- Data merging
- Deriving variables
- Grouping data

- Aggregating data
- Visualizing Data
- Regression Analysis
- Clustering

TOOLS USED

- Python
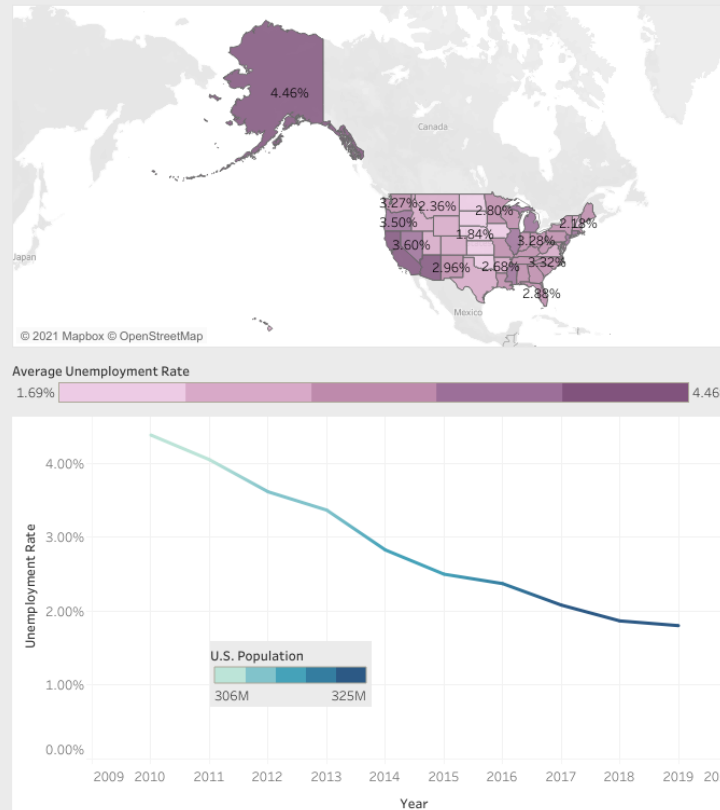- Tableau

UNEMPLOYMENT - RESULTS

- Dataset sourced from government databases. Granularity level of county-year. Data available for the years 2010-2019.
- Data cleaned, aggregated, and analyzed using Pandas library in python.
- Visualizations made using Tableau.
- Link to GitHub Repository: https://github.com/eriesberg/Unemployment_Analysis

THANK YOU

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