

Data Analytics Portfolio

INNOCENT BAYAI





GameCo



Preparing for flu season



Rockbuster Stealth

| Projects and Tools

Projects and Tools (1)

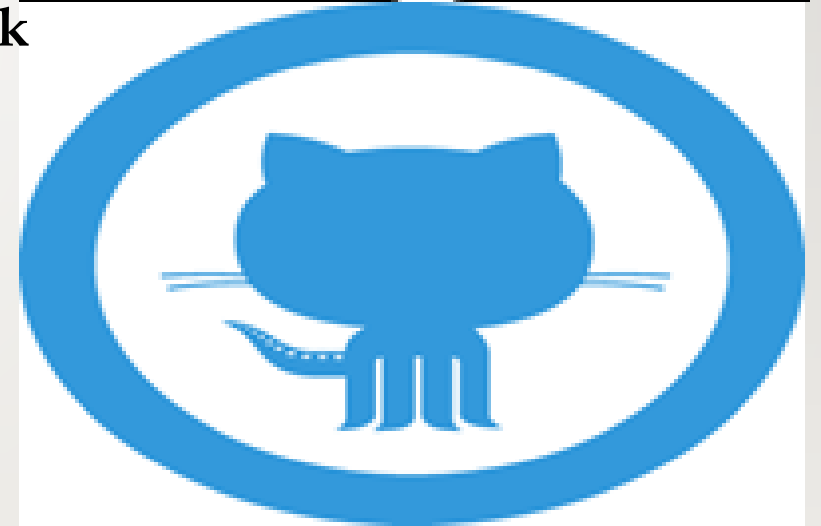


Global Superstore Analysis

Instacart

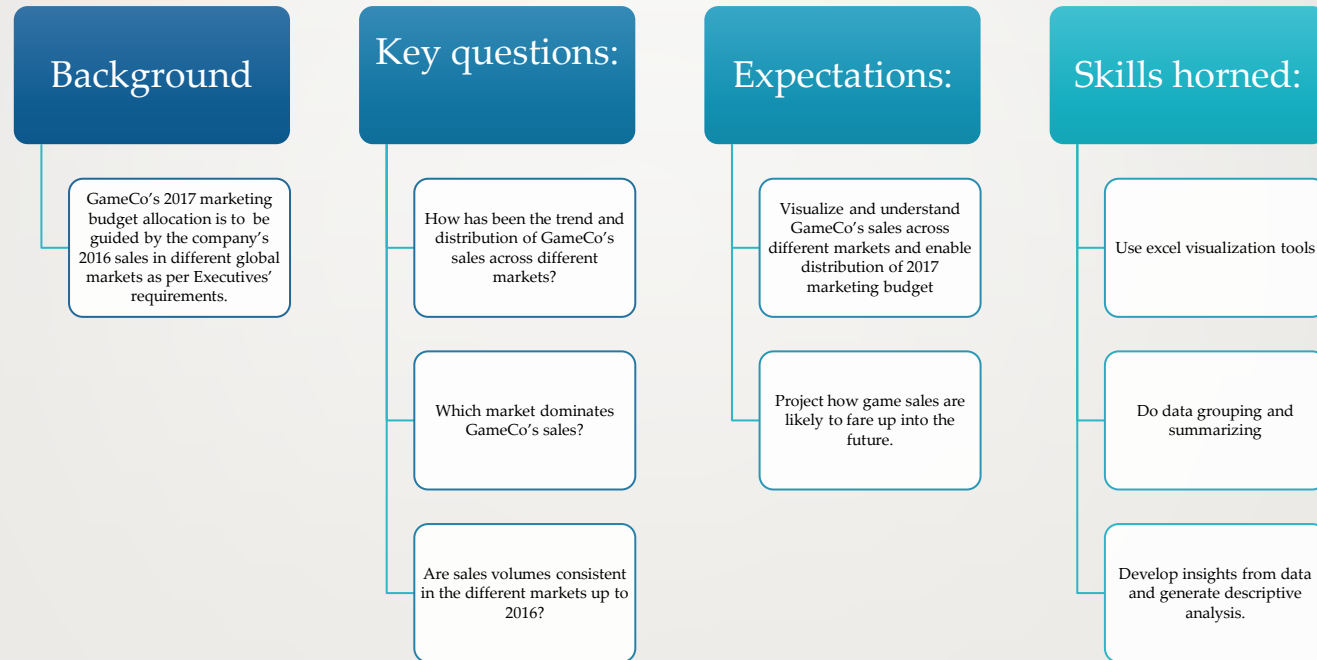


Pig E. Bank

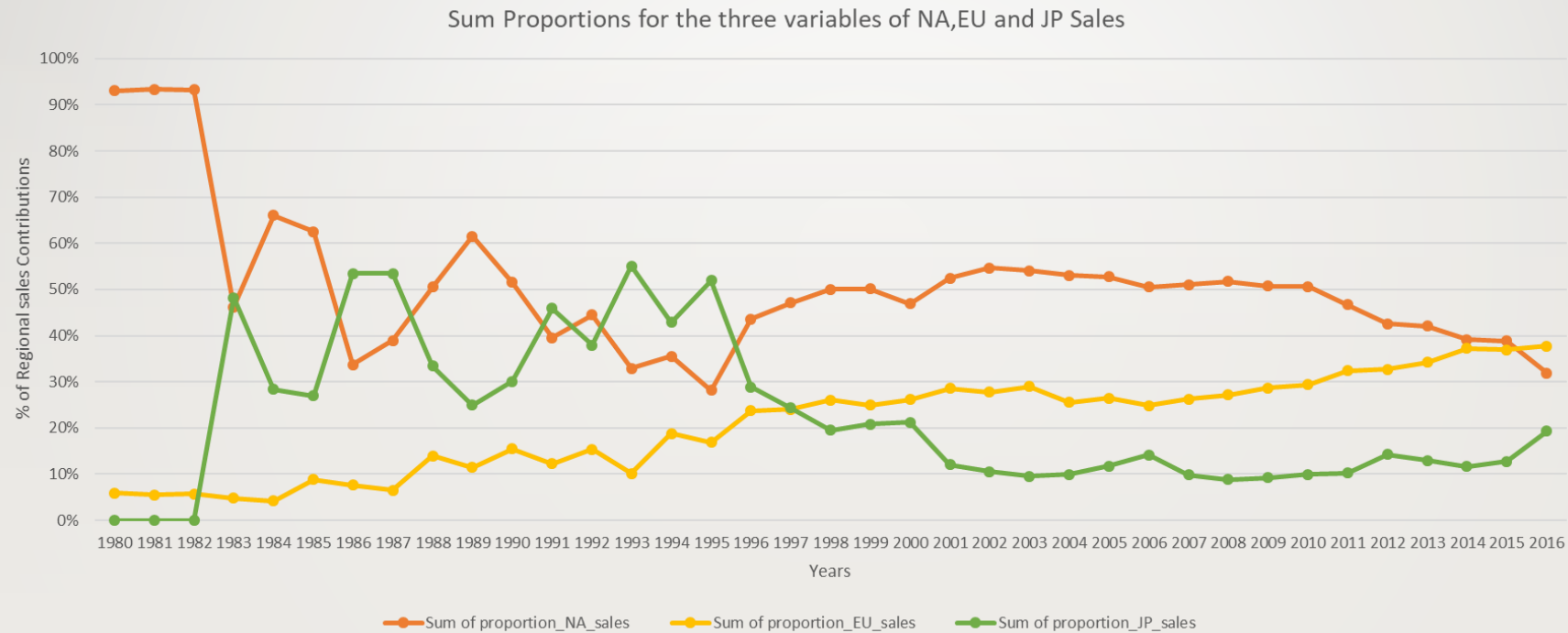


GameCo

MarketingBudget Planning for 2017



GameCo Sales Trend by Regional Market (1980-2016)



New insights vs baseline expectations

01

Regional sales have transitioned across time from 1980-2016 contrary to Executives' expectations.

02

EU regional sales gradually increased and by 2016 the region topped GameCo's sales by region.

03

Sales for Japan and North America are seemingly inversely correlated.

04

Japan's sales from 1986 picked (amidst oscillations) until 1995, after which sales dipped progressively.

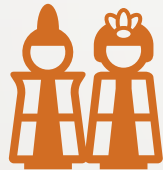
05

North American sales dropped continuously from 1986 to 1995, after which sale picked progressively,

GameCo's Marketing Budget Recommendations



To maintain the upward growth in sales for the EU market, more resources must be allocated.



Since the Japanese market is recovering, it also requires adequate resourcing to nurture the upward sales trend.



GameCo must assess if competitors are outperforming them and identify their strengths and strategies.



GameCo must also focus on alternative markets that can be developed to replace the declining ones.

Rock Buster

Rockbuster Stealth Data
Analysis Project

Rockbuster Business Scoping

- Rockbuster Stealth LLC is a movie rental company that used to have stores around the world.
- It is facing stiff competition from streaming services such as Netflix and Amazon Prime.
- The Rockbuster Stealth Management Team is planning to use its existing movie licenses to launch an online video rental service to stay competitive



Key Business Questions

How many countries used to be reached by Rockbuster?

What is the total number of customer globally?

Which countries have the highest number of customers?

Which countries are topping the rental revenues?

How long is the average film rental?

What is the average film rental charge?

How many stores does Rockbuster have?

Which movies (titles) and ratings are most popular by rental amount?

Rockbuster Base Statistics



Total of 599
customers from 109
countries



Total revenue \$61
312



Average rental
duration is 5 days



Average rental
charge \$2.98



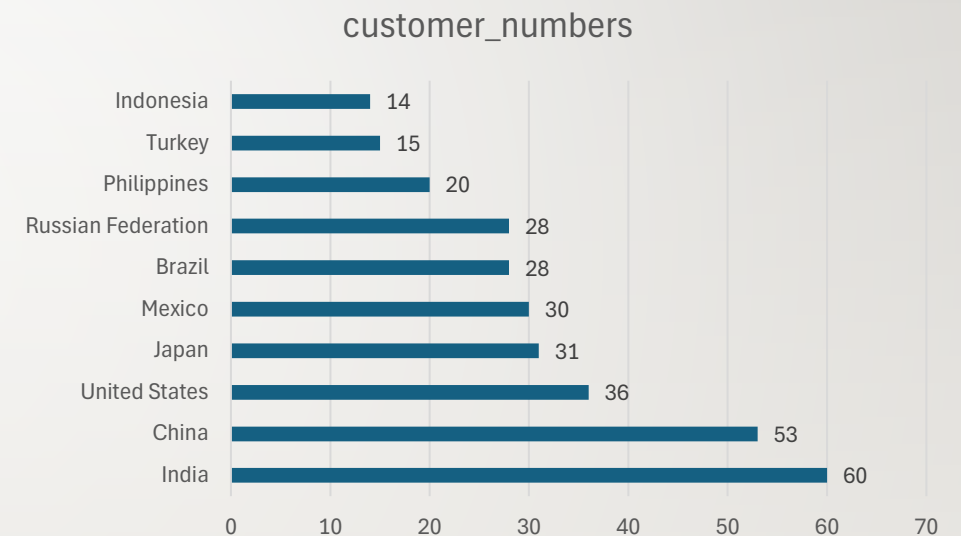
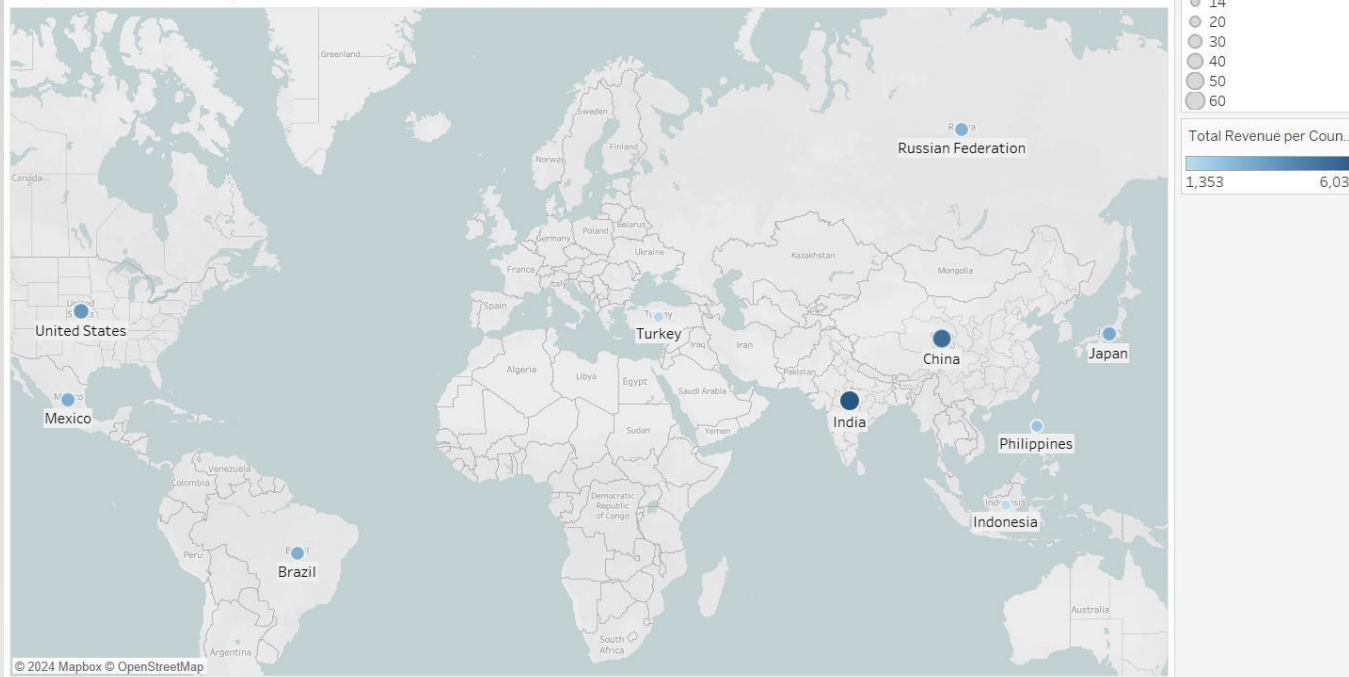
Total inventory
4581



Total stores is 2

Top ten markets by revenue and customers

Top Ten Countries by Customer Numbers and Revenue



Top ten movies by title

Movie title	Rating	Move category	Total revenue income
Telegraph Voyage	PG	Music	215.75
Zorro Ark	NC-17	Comedy	199.72
Wife Turn	NC-17	Documentary	198.73
Innocent Usual	PG-13	Foreign	191.74
Hustler Party	NC-17	Comedy	190.78
Saturday Lambs	G	Sports	190.74
Titans Jerk	PG	Sci-Fi	186.73
Harry Idaho	PG-13	Drama	177.73
Torque Bound	G	Drama	169.79
Dogma family	G	Animations	168.72

Recommendations

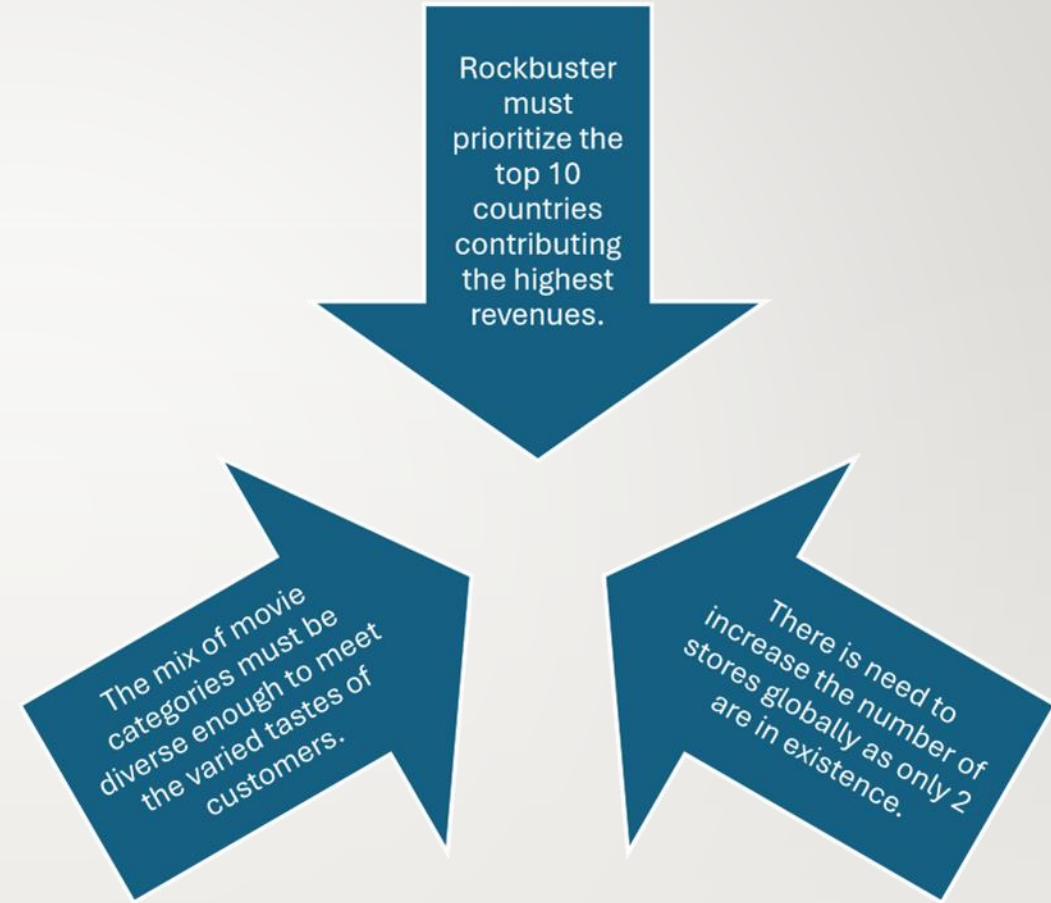
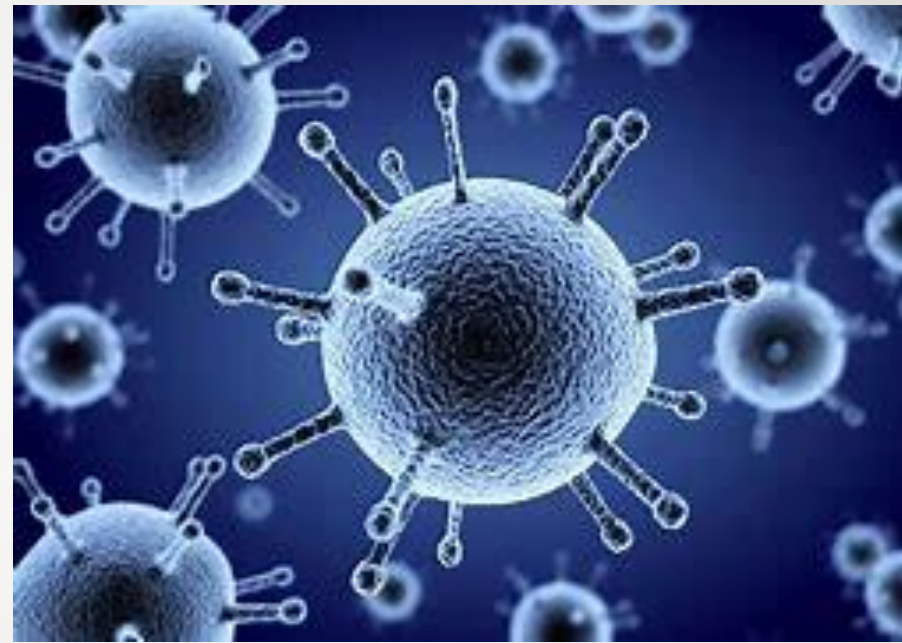


Tableau Link

[https://public.tableau.com/app/profile/innocent.bayai/viz/Ex3_10Visualizations/To
p10Countries](https://public.tableau.com/app/profile/innocent.bayai/viz/Ex3_10Visualizations/To
p10Countries)



Preparing for the Flu Season the United States

Project Scoping

Objective

- The project is meant to assist the medical staffing agency in planning for the timing and adequacy of additional medical staff during the flu season.

Data scope

- The project use CDC annual data from 2009-2017 for 50 US states based on flu tests, population, flu deaths, and hospitalization.

Expectations

- Develop appropriate visualizations on the trend of flu death across time for the US states

Hypothesis & assumptions

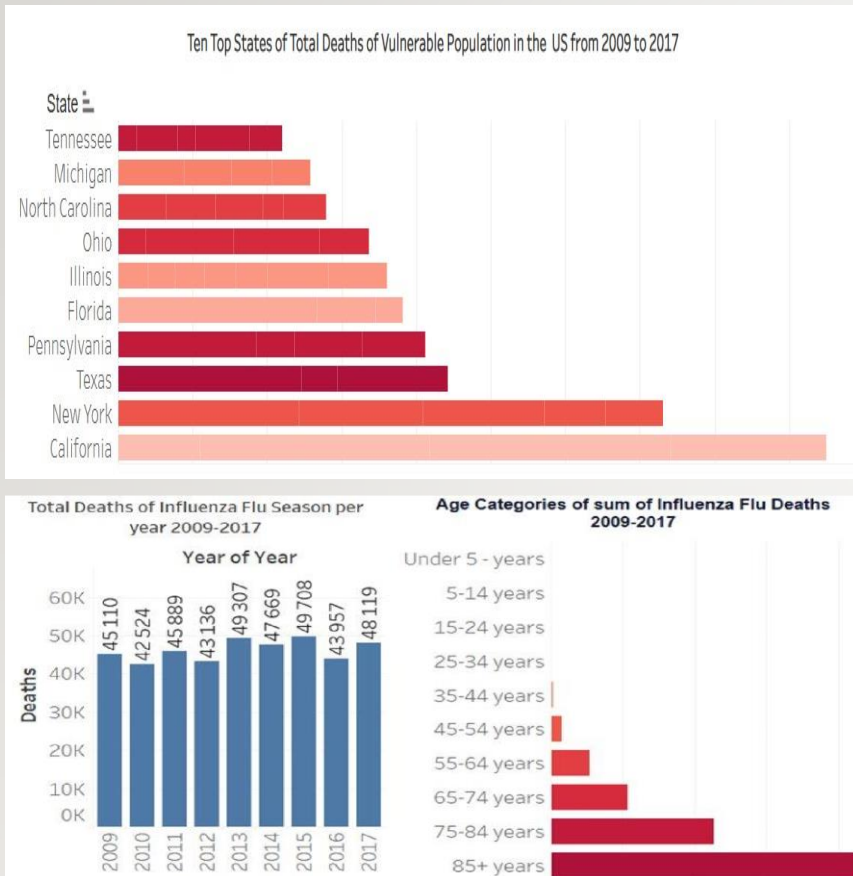
- State with the highest count of vulnerable population likely suffer more flu death

Skill enhanced:

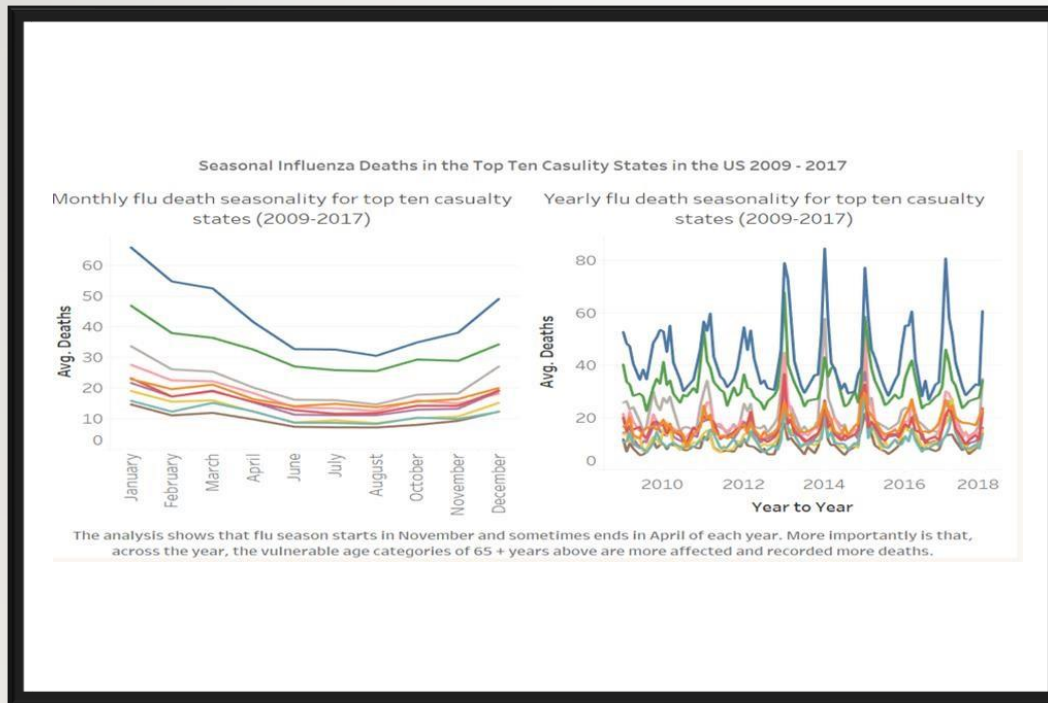
- Data collection process, cleaning, preparation, data analysis, hypothesis formulations, visualization in Tableau, presentation of project and storytelling.

Key insights

- Top ten states wrt flu death California, New York, Texas, Pennsylvania, Florida, Illinois, Ohio, North Carolina, Michigan, and Tennessee.
- Flu death on average is seemingly increasing each year although the highest death count was in 2015 at 49 708.
- The most vulnerable age group is 85+



Seasonality of flu death across top ten states



- Flu death follows the same trend annually.
- Flu death start to increase from August and reaches peak by January after which the trend declines.

Staffing recommendations

- Based on top states recording the highest flu deaths, the most vulnerable population group and the seasonality of the flu death;
 - Staffing must prioritize the states recording the highest flu death.
 - Flu vaccine must be administered prior the increase of flue death
 - Vaccine must also be directed to the 85+ age group



| Instacart Grocery Basket Analysis Project



Project Scoping

Project overview

- Instacart is an online grocery store selling groceries using an app. Instacart has strong sales but wants to learn more about its sales trends. The management is thinking of a targeted marketing approach.



Project questions

- What are the busiest days of the week and hours of the day? Are there particular times of the day when people spend the most money?
- What are the price range groupings for Instacart's products? Are there products that are more popular than others?
- Which departments have the highest frequency of product orders?
- What are the different types of customers in their system and how do their ordering behaviors differ?



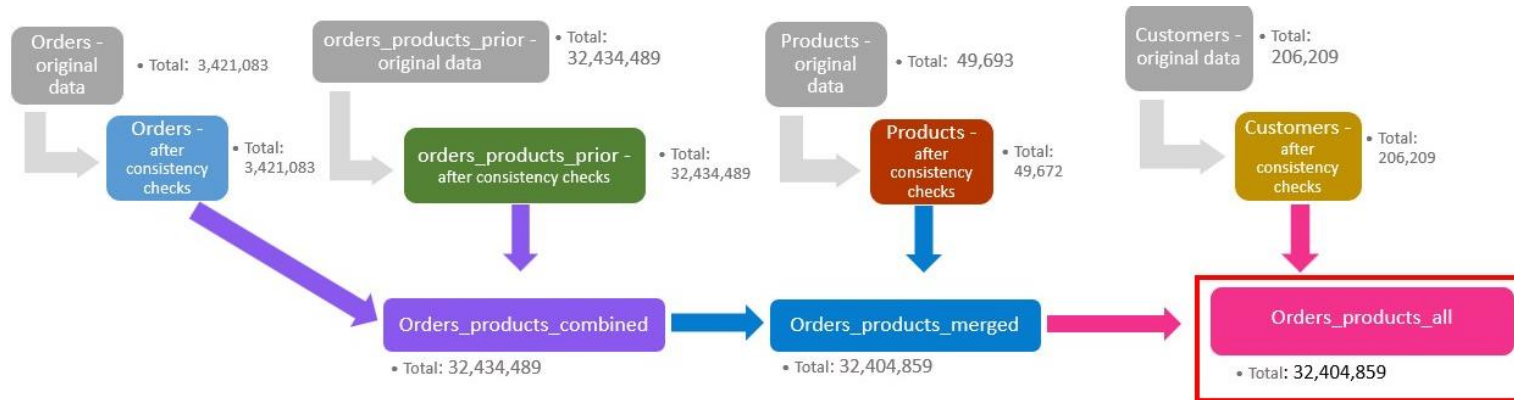
Aims

- Conduct a preliminary data and exploratory analysis to identify trends in Instacart's sales, draw conclusions, and recommend methods for customer segmentation.



Skills enhanced

- Conduct data consistency tests, exploratory analysis, data wrangling and subsetting, combining and exporting data, deriving new variables, grouping and aggregating data, visualization in python. And coding eriquette.



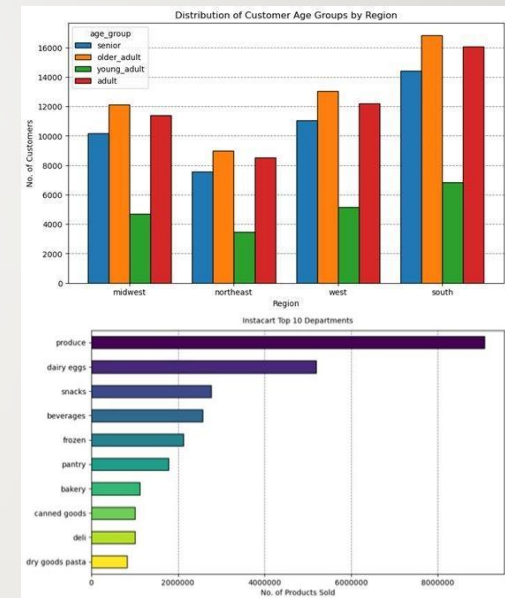
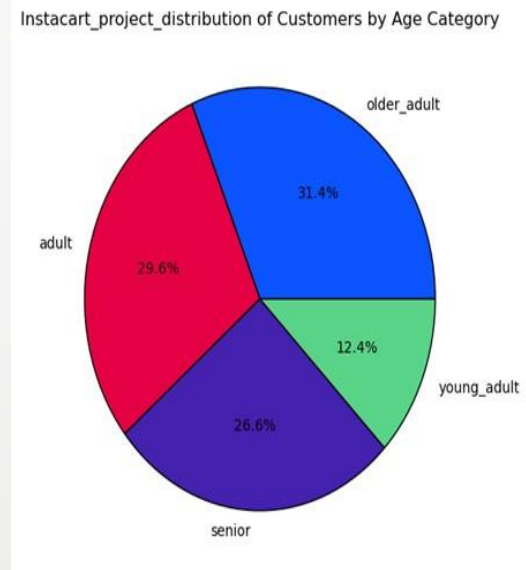
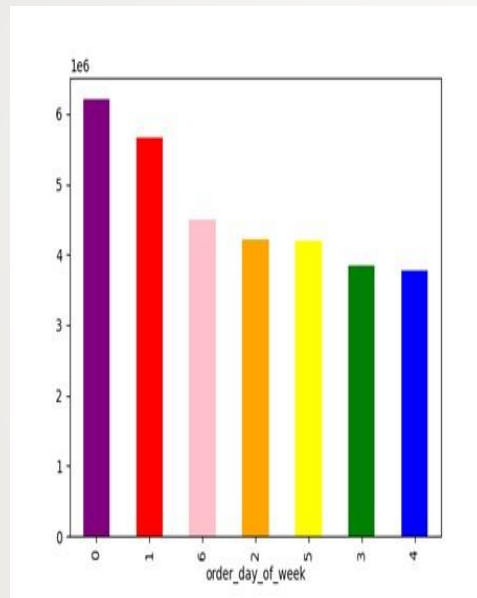
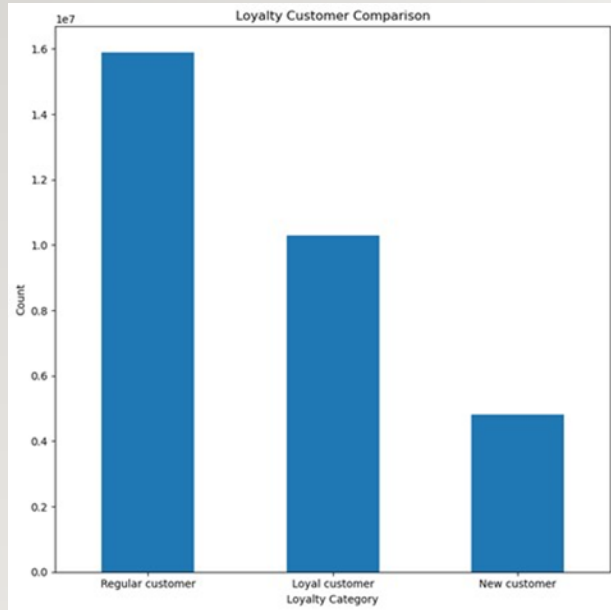
1.) The grey boxes in the first row of the population flow represent the original data sets as they were when you downloaded them. In the Total fields you need to add the count of the rows when you imported the data set into Jupyter.

Data manipulation process

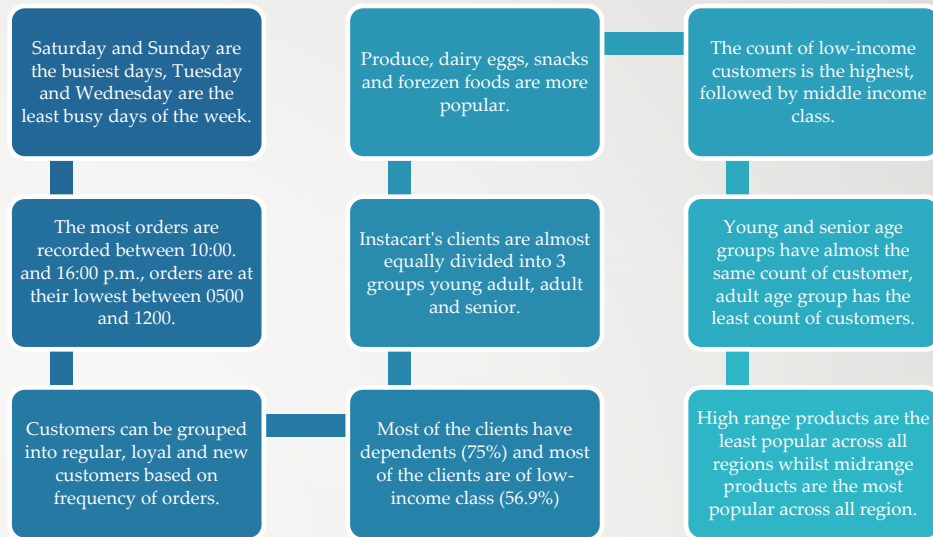




Key insights based on project questions



Key insights



Recommendations

- Instacart's sales team must consider promotions that are meant to scale-up orders on the low days and hours of the day.
- To maintain the high sales, Instacart can consider building customer loyalty program, monitor inventory levels continuously, expand distribution channels, enhance product presentation, maintain high product quality and stay up to date with market trends on consumer preferences.
- Rewarding regular customers is likely to maintain their ordering frequency into the future but incentives for loyal and new customer can be considered to grow the count of regular customers.
- To attract sales from low-income customers, rewarding them is likely to maintain their ordering frequency.
- The marketing strategy must equally consider all regions and product departments that are popular across the region
- Marketing strategy should prioritize the needs for customers with dependents in order to maximize sales from this group of customers.
- Instacart might consider promoting low and medium range products if they are to maximise sales.





Pig E. Bank Project



Project scoping

- Overview

- Pig E. Bank is a bank providing exceptional financial services a global customers but has been losing clients.

- Objectives

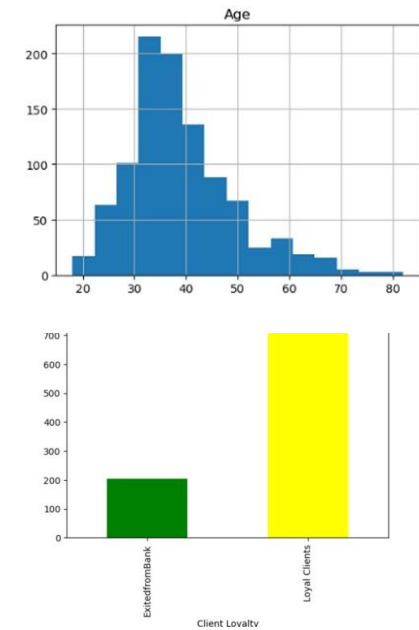
- The aim of this project was to perform an in-depth analysis of customer satisfaction. The analysis seeks to identify the factors that leads to customers leaving the bank including their characteristics. This enables the bank to design strategies for customer retention.

- Skills horned

- Do predictive analysis
- Produce a decision tree to guide decision making.
- Edify the making of decisions by the bank

Key insights

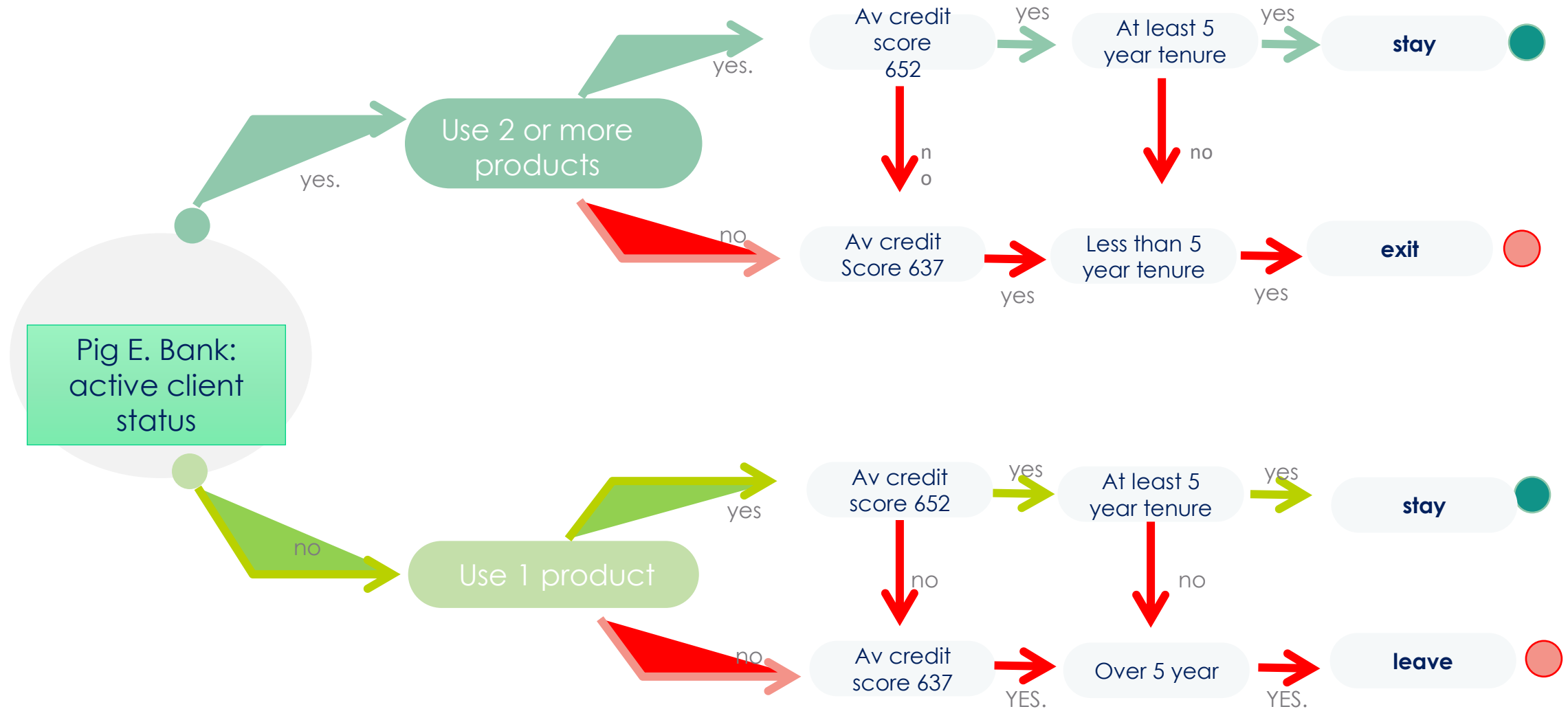
- More women left the bank compared to men
- Client that left the bank had one product, average age of 45, and a tenure of 5 approximately 5 years.
- Clients that stayed have a tenure of 5 years, 657 credit score, and 38 years average age.
- The clients that stayed had at least 2 products, \$93 000 average balance, and \$98 000 average salary.
- 787 clients stayed





Decision Tree

Pig E. Bank's decision tree based on information assembled from the analysis



Recommendations

Design products that meet women's needs as they age

Re-model credit scoring algorithm to increase the credit score of more clients whilst limiting unnecessary risk.

Introduce more products and services to cater for the changing needs of clients.

Constantly run customer satisfaction surveys to enable better service delivery.



Global Superstore Analysis Project



Overview

- Global Superstore sells an assortment of products across the world. It wants to understand how different markets perform wrt sales and profit.

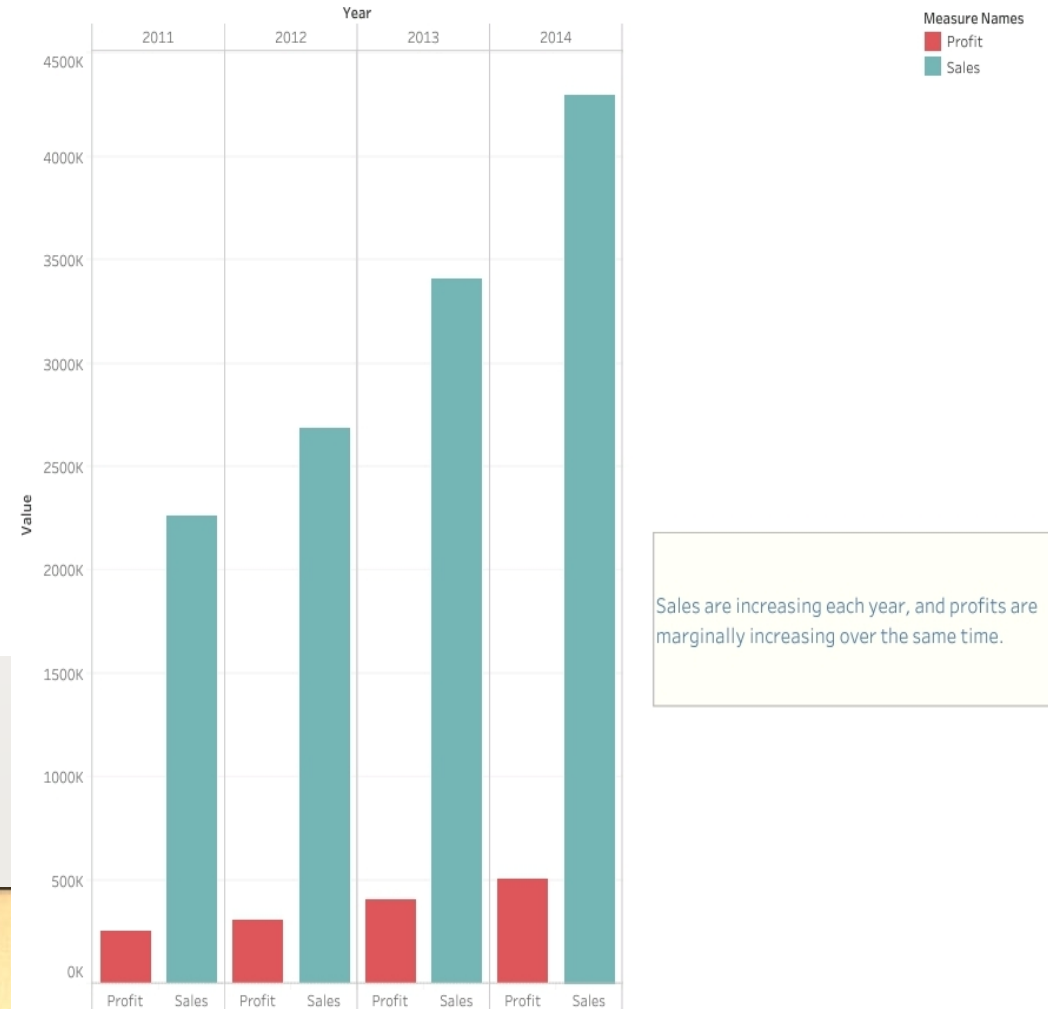
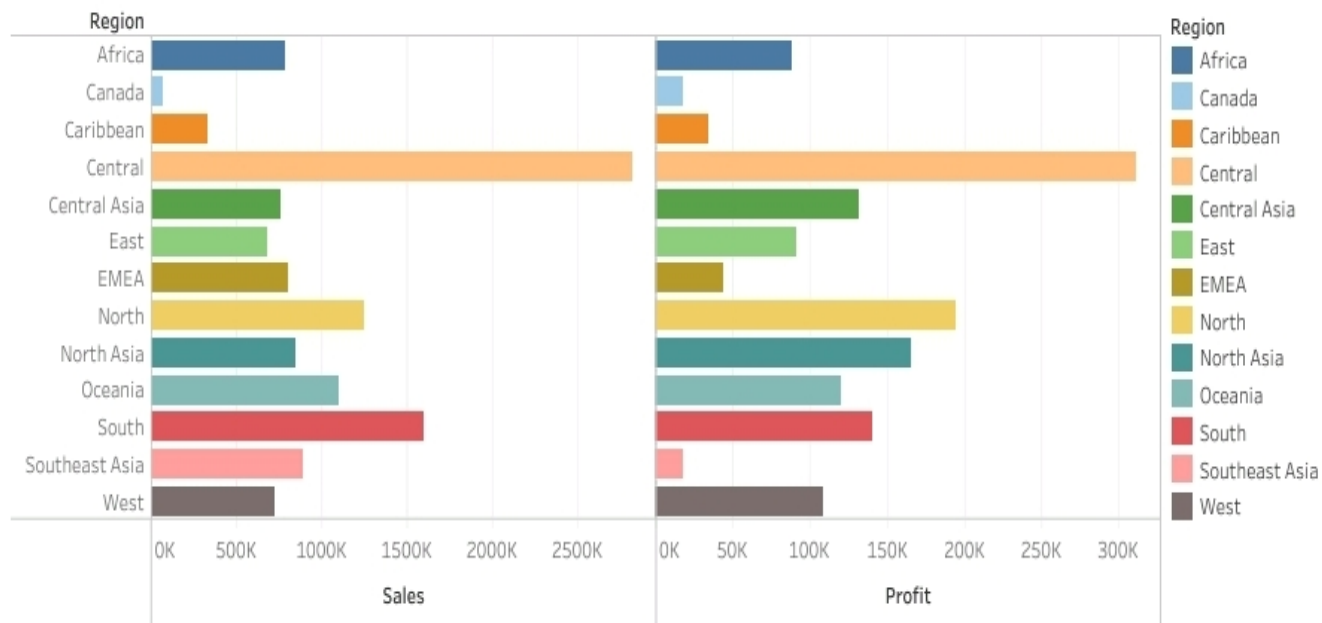
Objectives

- Do an in-depth analysis of Global Superstore's sales and profit by year, by region, by country, by quantity and by product category.

Skills developed

- Use visualization skills in python and tableau
- Proffer recommendations for the growth in sales and profit for Global Superstore

Sales & Profit by Region and Year

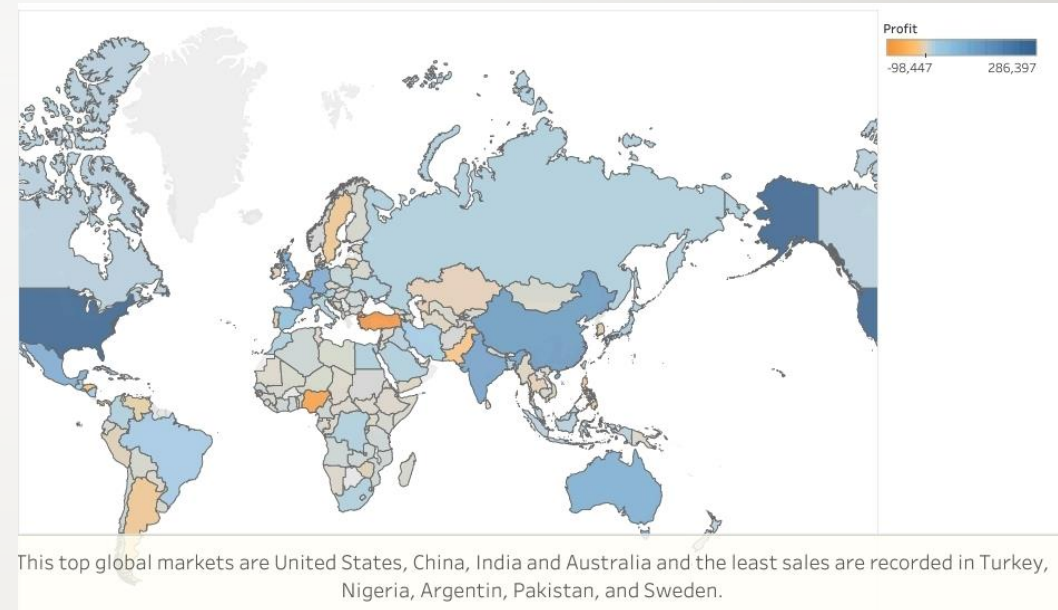


Sales are increasing each year, and profits are marginally increasing over the same time.

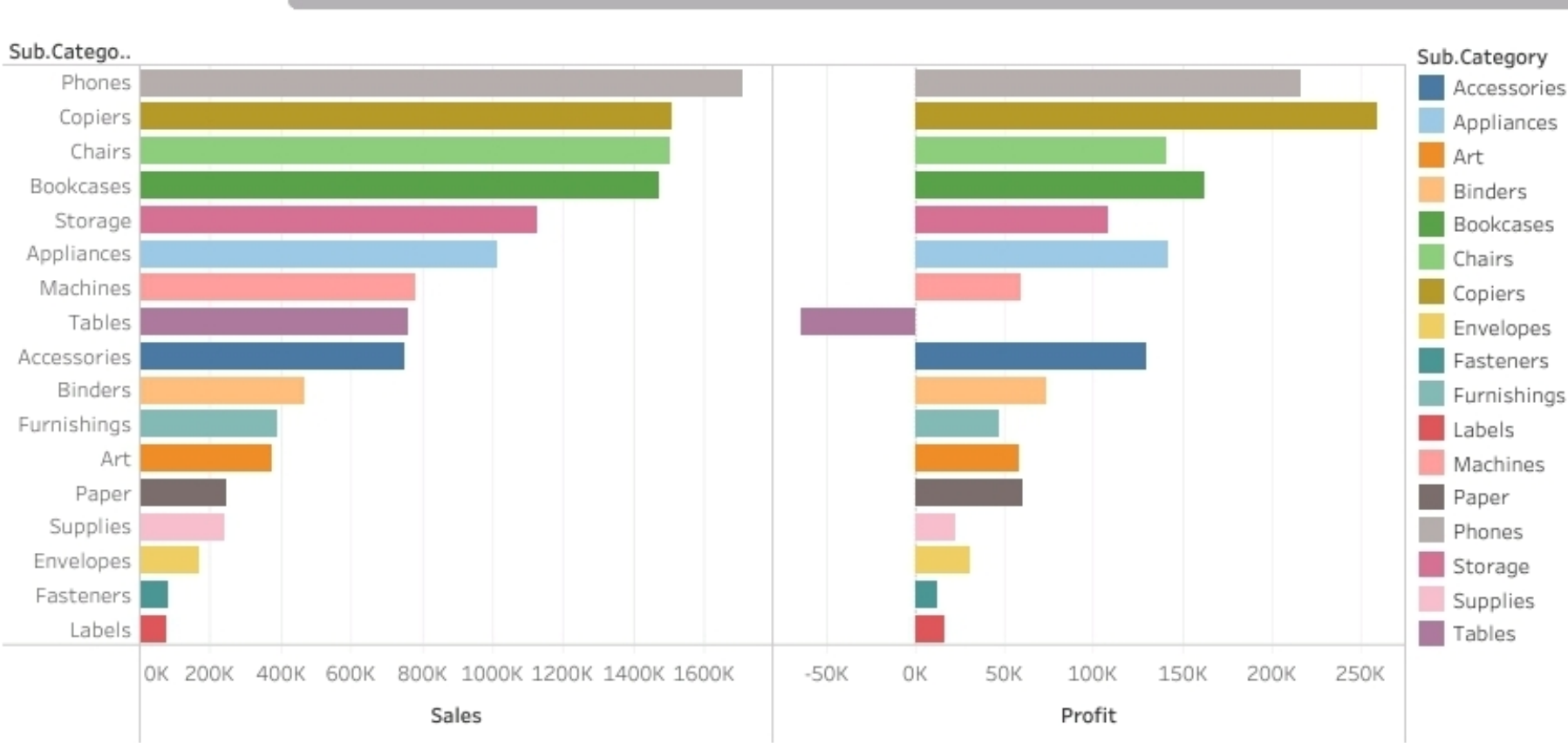
- Top markets by sales and profits are central, North, North Asia, South and Central Asia.
- Sales are increasing each but profit is increasing marginally across time

Profit by country

- Global Superstore's markets are the United States, China, India, and Australia and the least sales are recorded in Turkey, Nigeria, Argentina, Pakistan, and Sweden.



Sales and Profit by Product Sub-categories



- The highest sales are recorded for sub-categories: bookcases, chairs, & copiers.
- Subcategories contributing the highest profits are copiers, bookcases, chairs, and appliances

Recommendations



Project links

- <https://github.com/nncntb9/Achievement-3-SQL-Project>
- [nncntb9/Achievement-4-Python-Project: SQL exercises at CareerFoundry \(github.com\)](#)
- [Profile - innocent.bayai | Tableau Public](#)
- [Global Superstore Project - IB | Tableau Public](#)