

An abstract graphic featuring a network of orange lines forming a hexagonal grid. Various icons are placed within this grid: a large blue dollar sign at the top left, a circular arrow icon in the upper center, a hand with a red concentric circle icon below it, a blue padlock icon in the lower left, and a credit card icon with a dollar sign in the center. The background is a light gray with a subtle grid pattern.

MARIANA OLIVEIRA

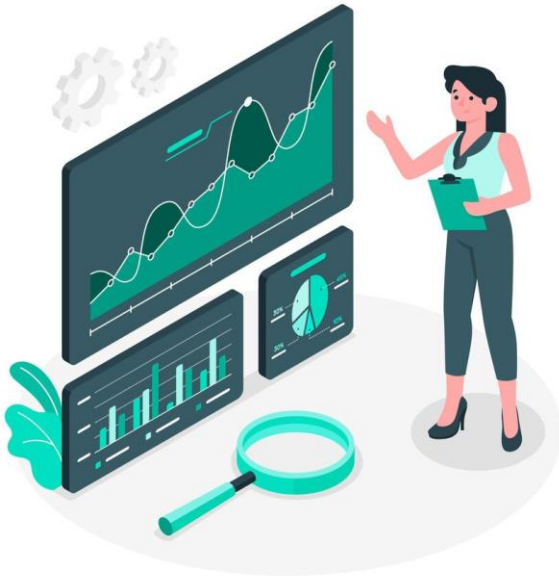
METALLURGICAL AND MATERIALS ENGINEER

DATA ANALYTICS SPECIALIST

An abstract graphic featuring a network of orange lines forming a hexagonal grid. Various icons are placed within this grid: a blue hexagon with a white key icon, a black line graph with an upward arrow, a bar chart with four bars of increasing height, and a teal balance scale icon. The background is a light gray with a subtle grid pattern.

12%

SHOWCASED PROJECTS



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- 1 Analyzing global video game sales
- 2 Preparing for flu season in the U.S.A.
- 3 Business questions for an online video rental company
- 4 Marketing strategy for an online grocery store
- 5 Brazil: Shades of green

STRUCTURE OF THE PROJECTS PRESENTATION

The project presentation will have the following structure:

Introduction to the project and key questions to be analyzed.

Project Brief



Short overview of the performed data analysis and key results.

Data Analysis



Main findings of the data analysis and further discussion.

Conclusions





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ANALYZING GLOBAL VIDEO GAME SALES

PROJECT I

PROJECT BRIEF

ANALYZING GLOBAL VIDEO GAME SALES

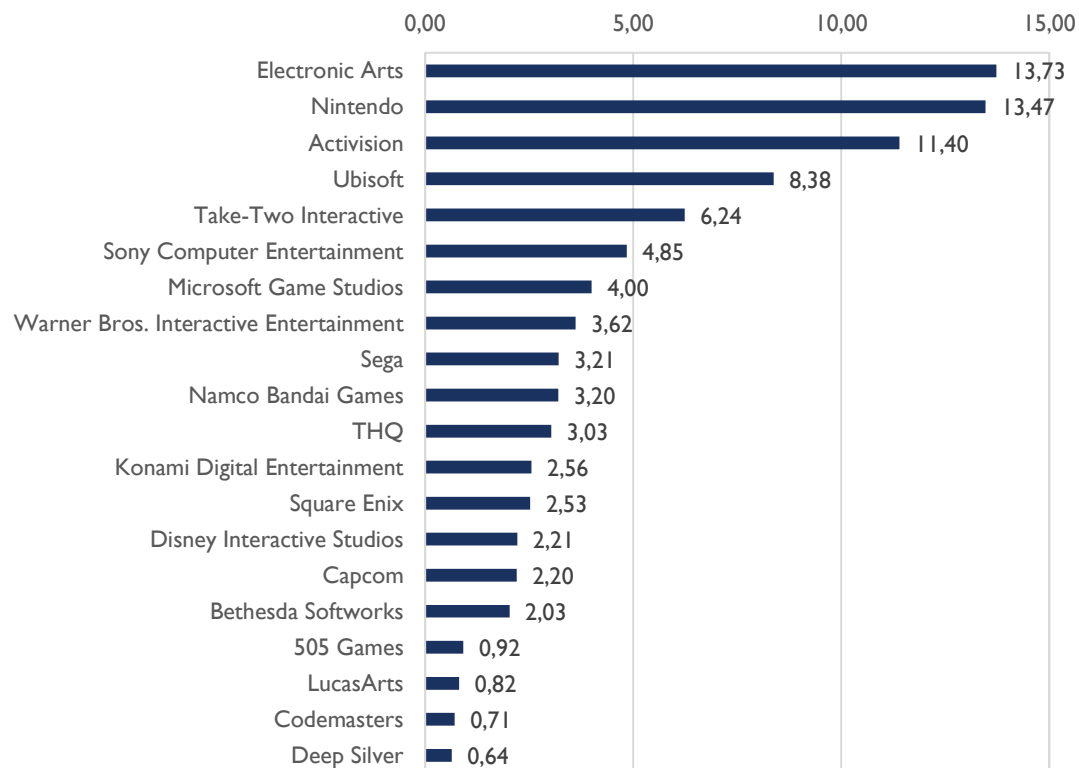
- GameCo is a new video game company, that wants to consider data analysis for the development of new games.
- Goal: Plan the marketing budget distribution to maximize return on investment.
- Questions to answer:
 - How is the distribution of sales between regions over time?
 - How is the interest in different genres?
 - How are the main competitors in certain markets doing?

- Dataset was provided by CareerFoundry, sourced at the website <https://www.vgchartz.com/>
 - Format: Excel
- Tools used for Analysis:
 - MS Excel
- Deliverables:
 - Excel file
 - PowerPoint Presentation
 - Short summary as PDF file

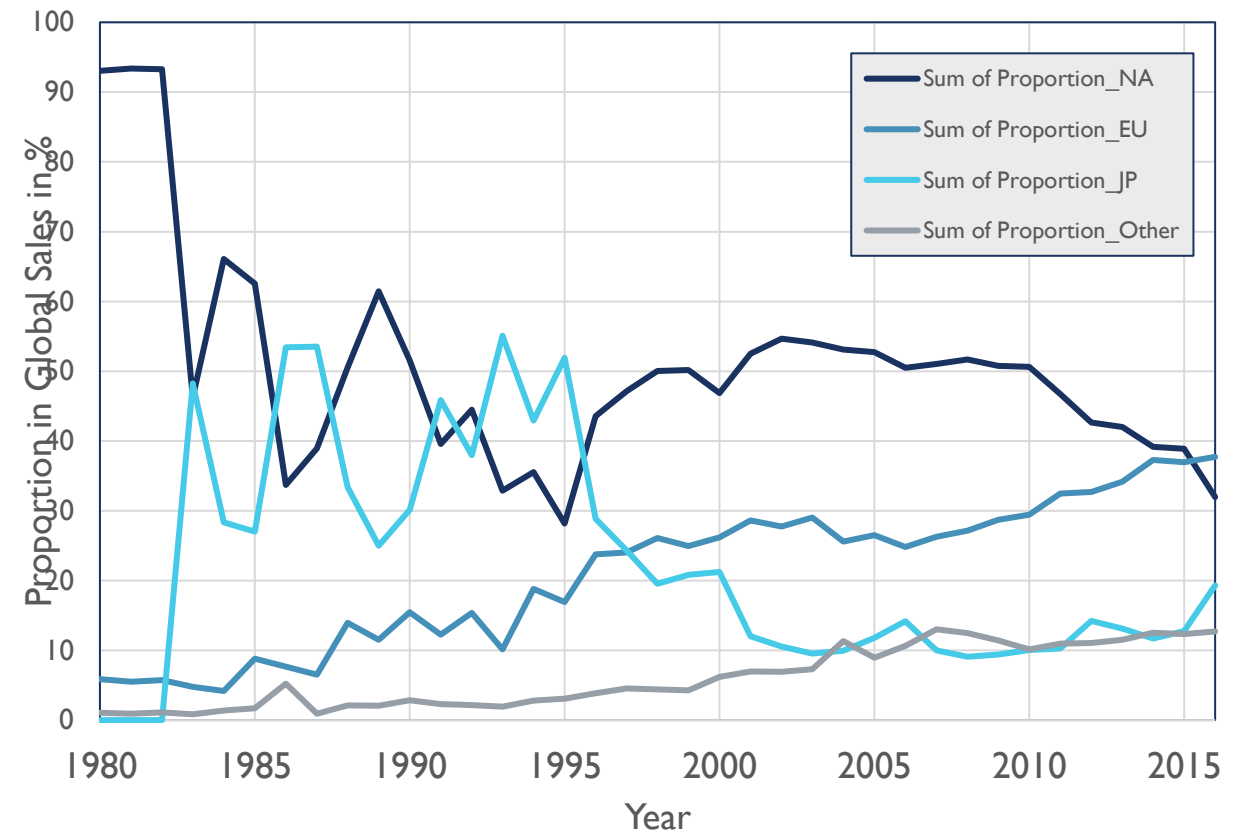
DATA ANALYSIS

ANALYZING GLOBAL VIDEO GAME SALES

Market share of the 20 Top Companies



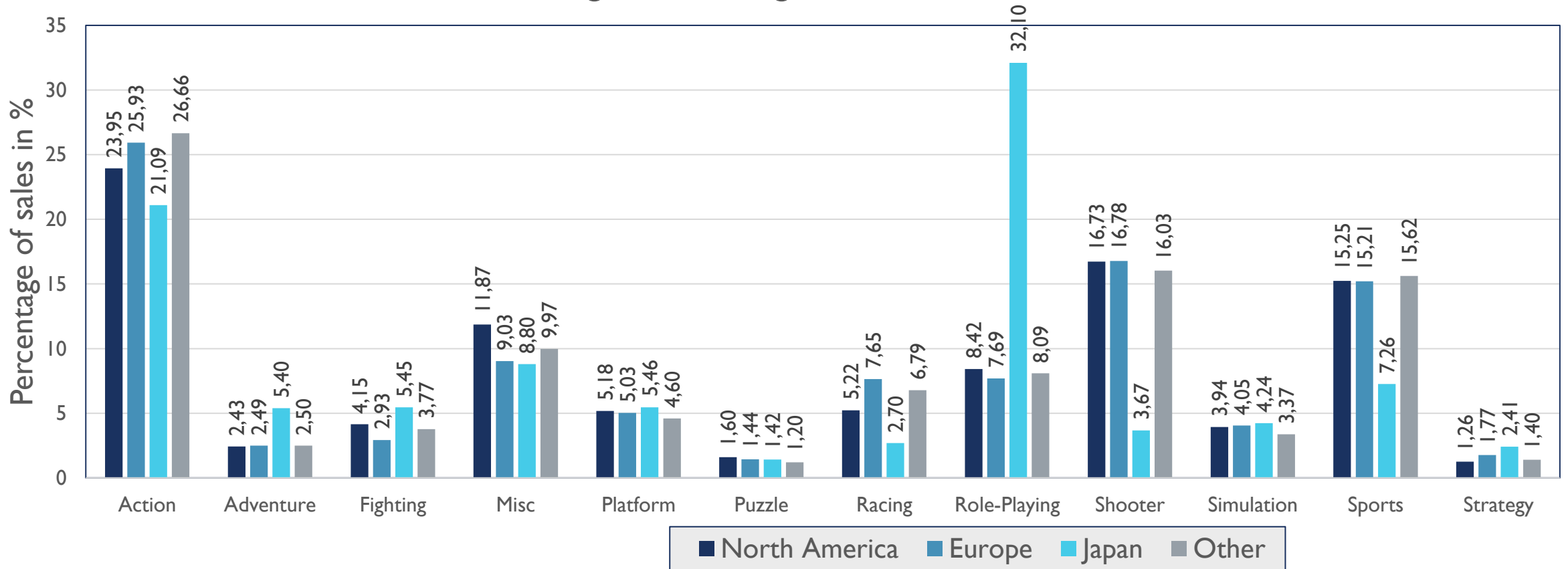
Proportion of Sales - Evolution over time



DATA ANALYSIS

ANALYZING GLOBAL VIDEO GAME SALES

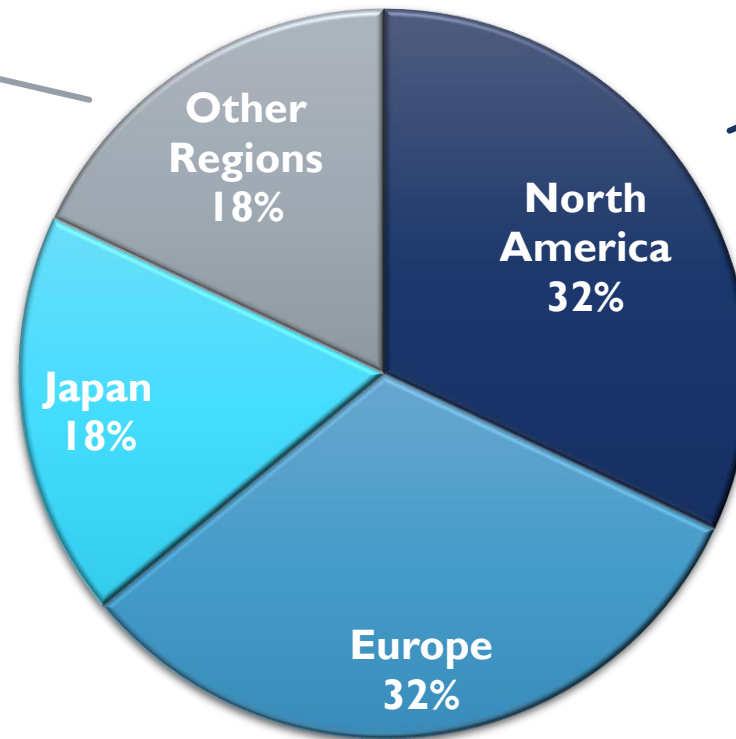
Percentage of total regional sales since 2008



CONCLUSIONS

ANALYZING GLOBAL VIDEO GAME SALES

Budget Distribution



High potential in the future, since it includes China and India

Has the historical highest gross sales. Only one to have more than 200 Mio. units sold

Not only historically important, but also home of Nintendo and Sony, top market players

Strongest market in 2016. If keeps tendency, will continue to grow



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PREPARING FOR FLU SEASON IN THE U.S.A.

PROJECT 2

PROJECT BRIEF

PREPARING FOR FLU SEASON IN THE U.S.A.

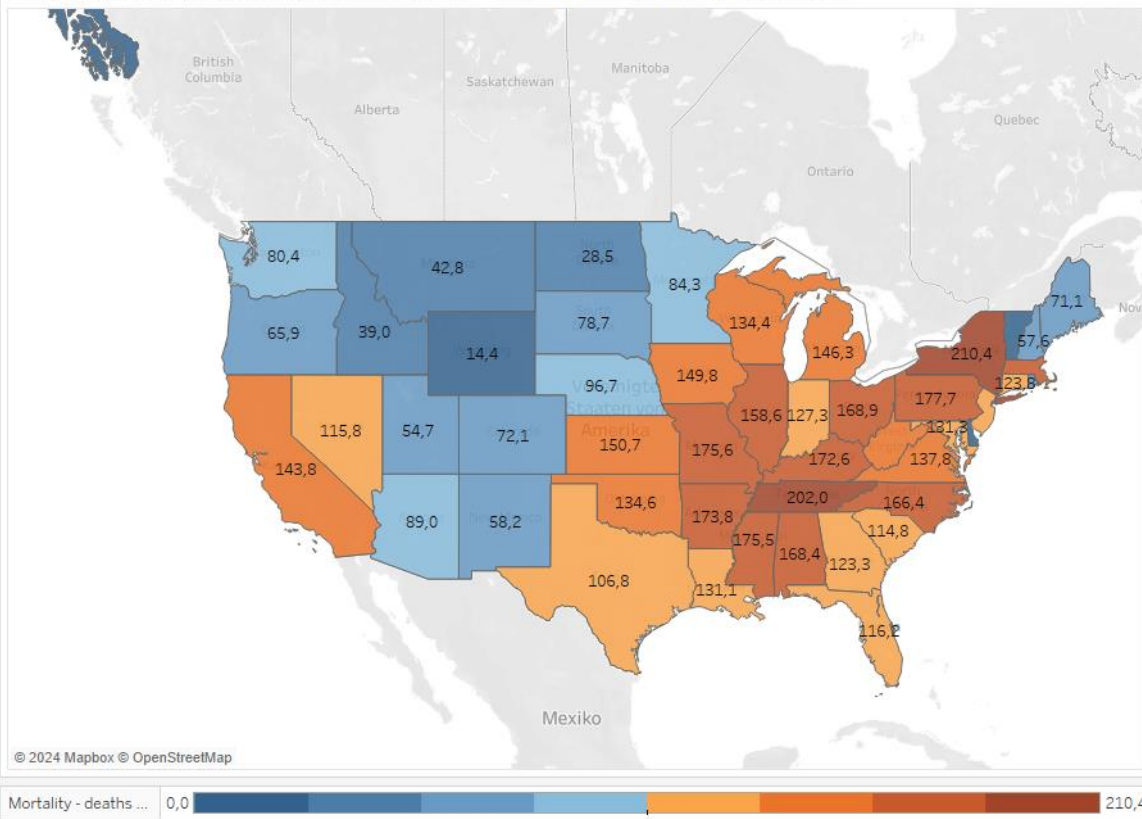
- The influenza season in the United States overburdens the medical system and causes around 45.000 deaths yearly. A medical staffing agency will provide temporarily extra personal to help.
- Goal: Plan the distribution of additional medical staff during flu season.
- Questions to answer:
 - Where are the critical states?
 - Who have higher risk?
 - Are states with older population more risky?

- Dataset was provided by CareerFoundry, sourced at the CDC and US Census Bureau
 - Format: Excel
- Tools used for Analysis:
 - MS Excel
 - Tableau
- Deliverables:
 - Tableau storyboard:
https://public.tableau.com/app/profile/mariana.oliveira3613/ viz/Final_Flu/Story1

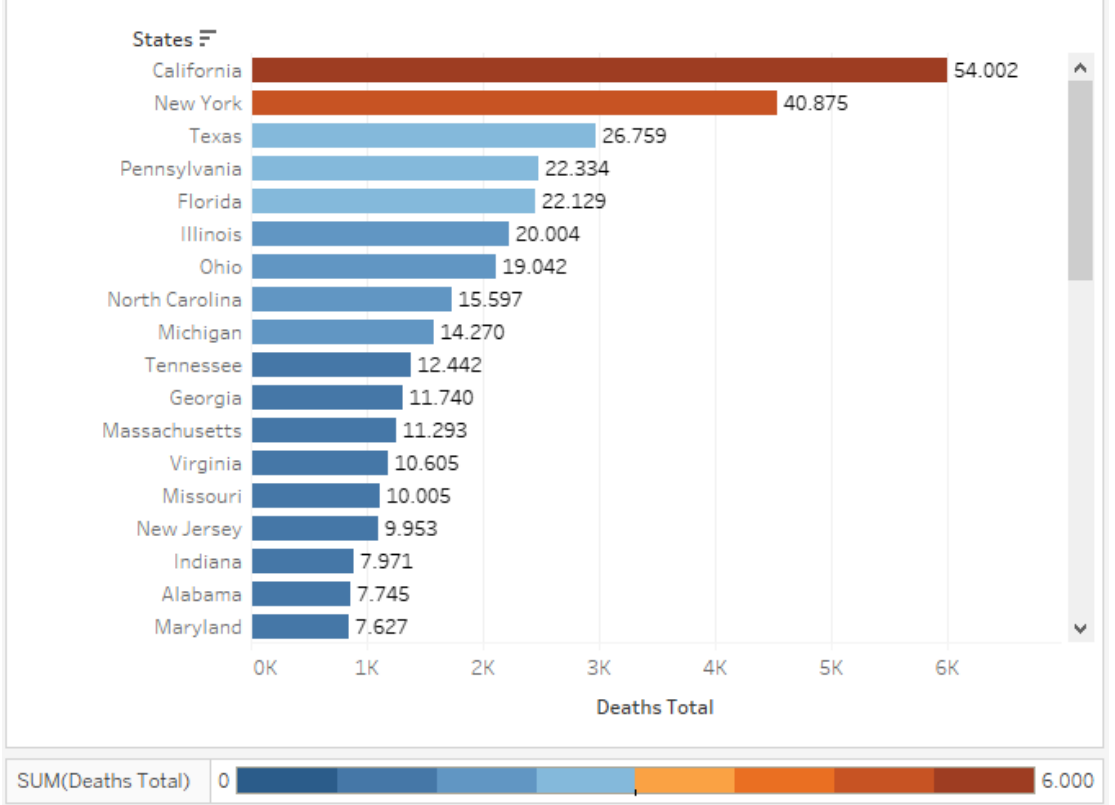
DATA ANALYSIS

PREPARING FOR FLU SEASON IN THE U.S.A.

Geographical distribution of mortality - deaths per 100.000 habitants



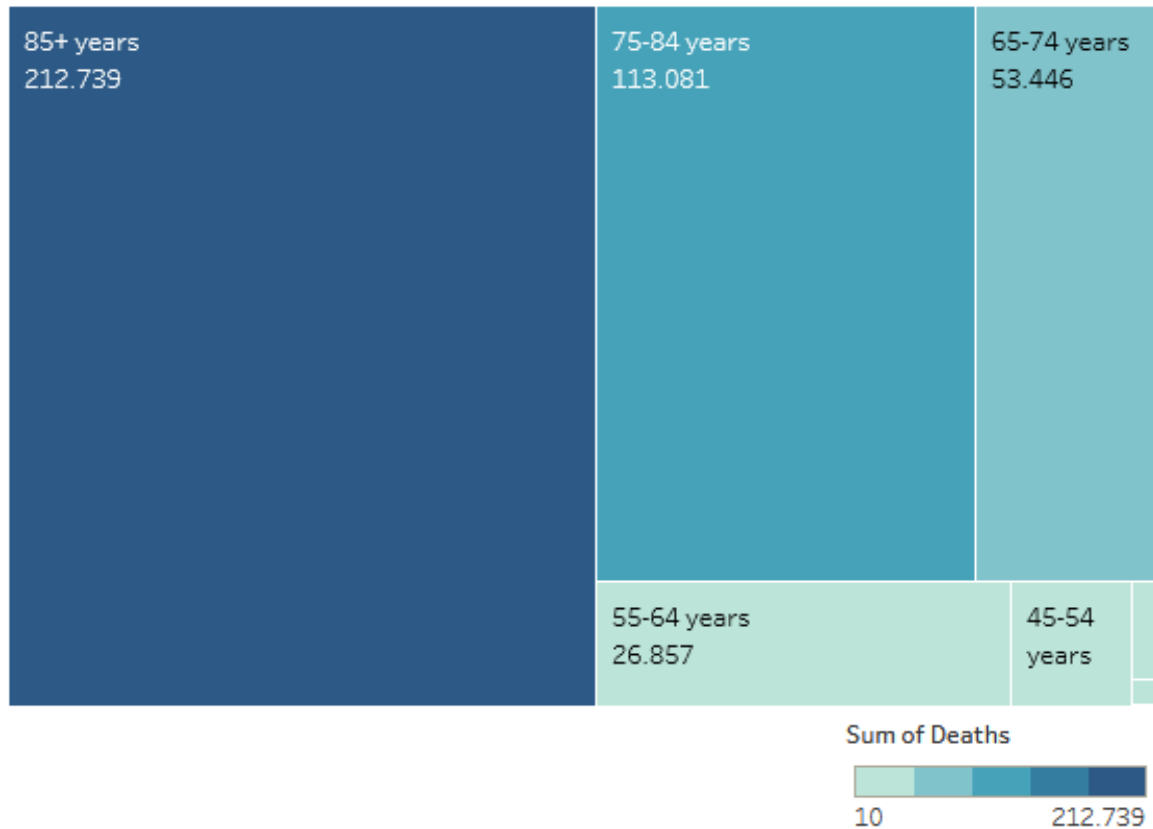
Ranked total deaths between 2009 and 2017



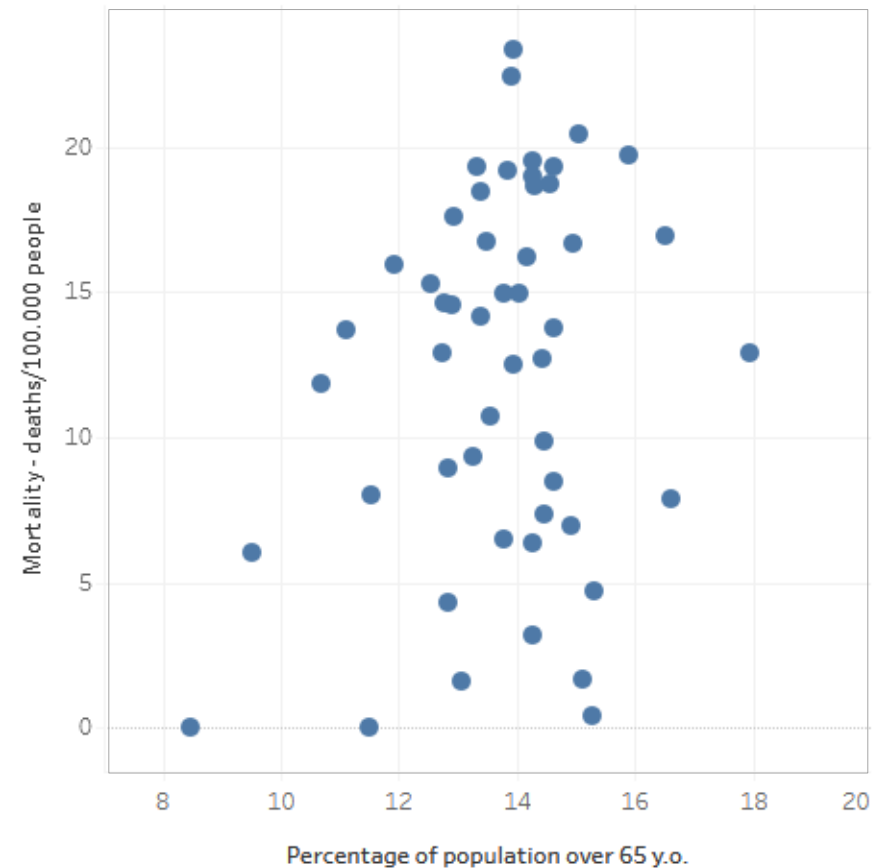
DATA ANALYSIS

PREPARING FOR FLU SEASON IN THE U.S.A.

Choropleth - Deaths since 2012



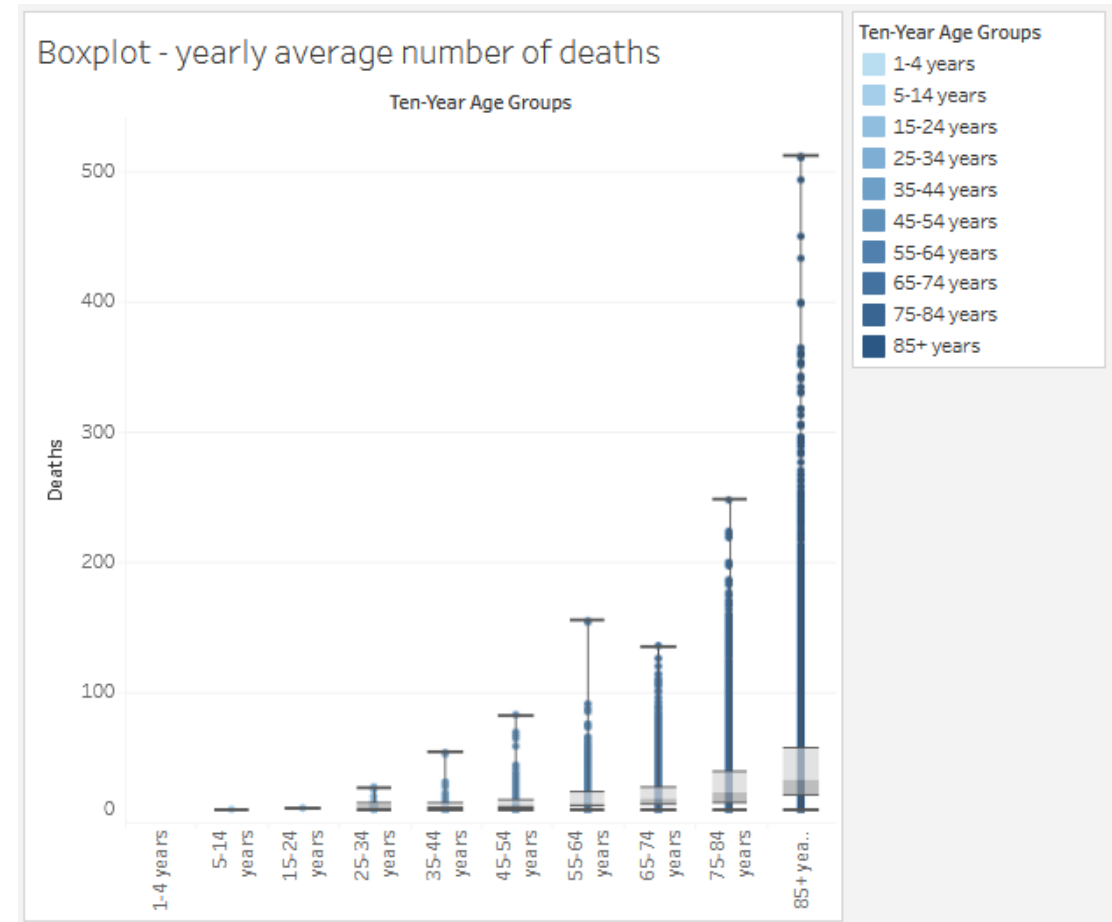
Percentage of population over 65 vs. Mortality



CONCLUSIONS

PREPARING FOR FLU SEASON IN THE U.S.A.

- Highest death toll are in California, New York, Texas, Pennsylvania and Florida.
- The older population represents the large majority of total deaths.
- Planning with more staff specialized in geriatrics would give a better targeted inforcement to the hospitals and clinics.
- The percentage of population older than 65y.o. does not help predict if a state is more critical, there is no correlation between them.





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BUSINESS QUESTIONS FOR AN ONLINE VIDEO RENTAL COMPANY

PROJECT 3

PROJECT BRIEF

BUSINESS QUESTIONS FOR AN ONLINE VIDEO RENTAL COMPANY

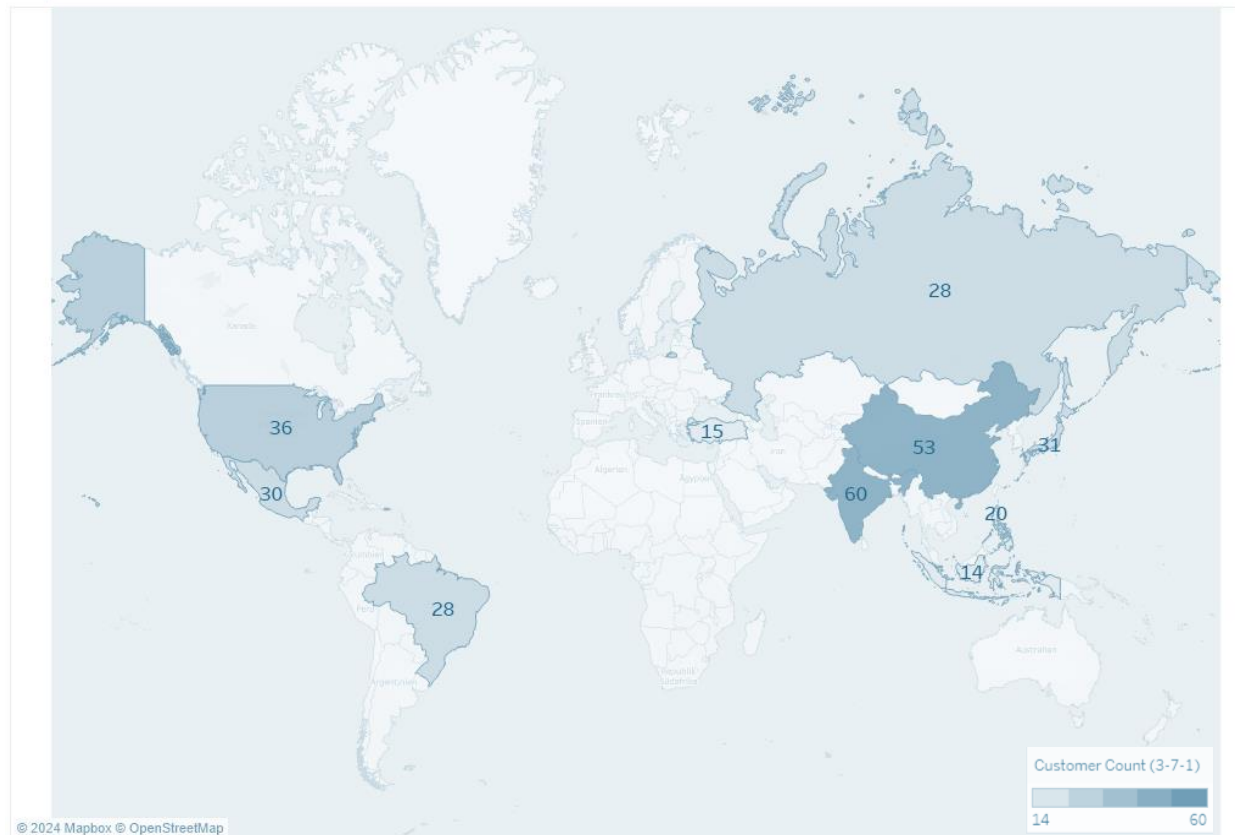
- Rockbuster Stealth LLC is a movie rental company that is transitioning from local shops to offer also online video rental service.
- Goal: Help with the launch strategy for the new online video service.
- Questions to answer (selected):
 - Which countries have the largest number of customers?
 - Calculate key metrics about film rental.
 - What is the revenue of the best customers?

- Dataset was provided by CareerFoundry
 - Format: Excel, DAT
- Tools used for Analysis:
 - PostgreSQL
 - DbVisualizer
 - MS Excel
 - Tableau
- Deliverables:
 - Data Dictionary
 - PowerPoint presentation
 - Excel file

DATA ANALYSIS

BUSINESS QUESTIONS FOR AN ONLINE VIDEO RENTAL COMPANY

Top 10 Best Customers



Country	Customers
India	60
China	53
United States	36
Japan	31
Mexico	30
Brazil	28
Russian Federation	28
Philippines	20
Turkey	15
Indonesia	14

DATA ANALYSIS

BUSINESS QUESTIONS FOR AN ONLINE VIDEO RENTAL COMPANY

Key Metrics of Film Rental

Characteristic	Minimum	Avg	Max
Release Year	2006	2006	2006
Rental Duration (in days)	3	4,99	7
Rental Rate	0,99	2,98	4,99
Length of the film (in minutes)	46	115,27	185
Replacement Cost (in dollars)	9,99	19,98	29,99

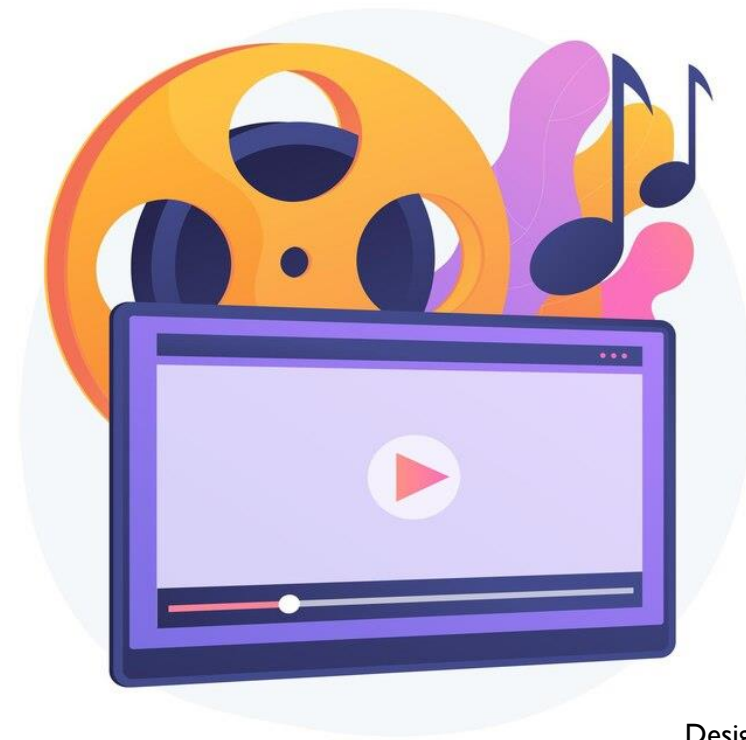
Top 5 Best Customers

Eleanor Hunt 21.155	Casey Mena 13.068	Sara Perry 12.870
Clara Shaw 18.960	Leslie Seward 12.372	

CONCLUSIONS

BUSINESS QUESTIONS FOR AN ONLINE VIDEO RENTAL COMPANY

- For this project I learned how to use PostgreSQL as well writing scripting for calling and joining dataset. With these new competences I was able to complete following tasks:
 - The top countries were identified, as well the top cities within these countries were identified.
 - The key metrics about film rental at Rockbuster were calculated and summarized.
 - The five best customers were also identified.



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MARKETING STRATEGY FOR AN ONLINE GROCERY STORE

PROJECT 4

PROJECT BRIEF

MARKETING STRATEGY FOR AN ONLINE GROCERY STORE

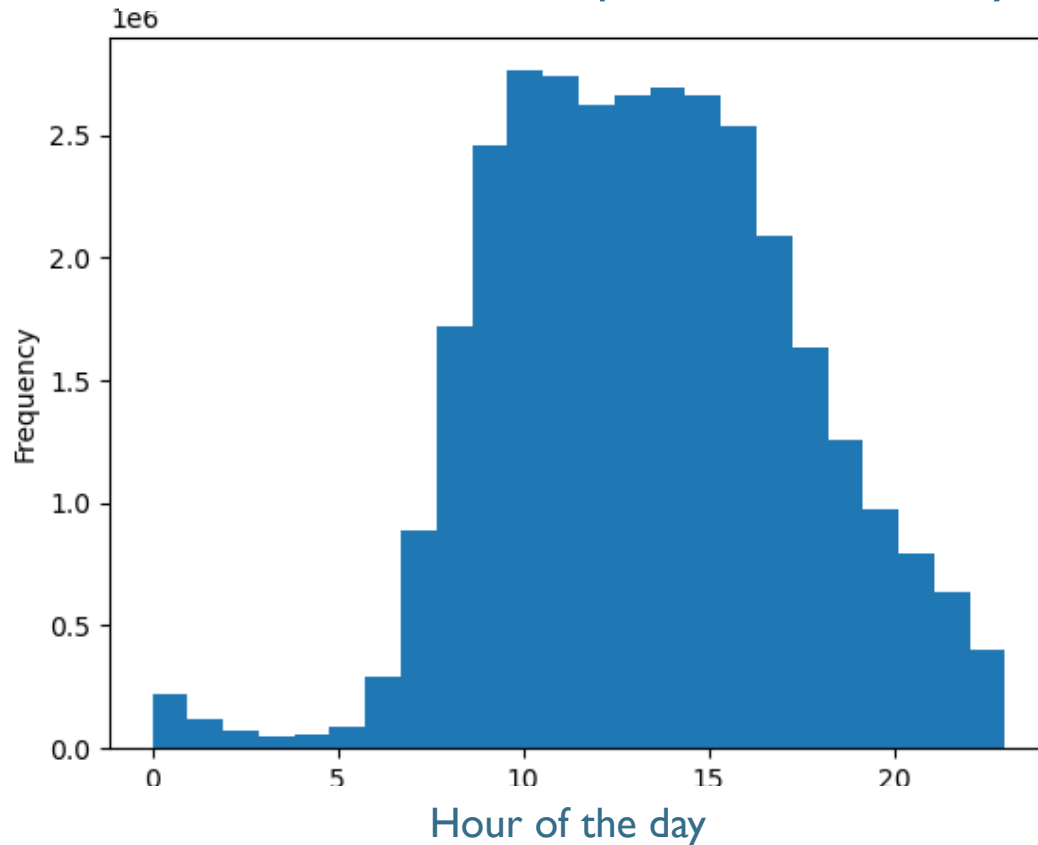
- Instacart is an online grocery store that operates through app. To improve the marketing strategy, they want to understand better their sales patterns.
- Goal: Develop a targeted marketing strategy using a better segmentation of the customers' behavior.
- Questions to answer (selected):
 - What days of the week and hours of the day are busiest?
 - Which departments have the highest frequency of product orders?
 - What's the distribution among users in regards to their brand loyalty?

- Dataset was provided by CareerFoundry, sourced at www.instacart.com/datasets/grocery-shopping-2017
 - Format: CSV
- Tools used for Analysis:
 - Jupyter Notebook
 - MS Excel
- Deliverables:
 - Excel file

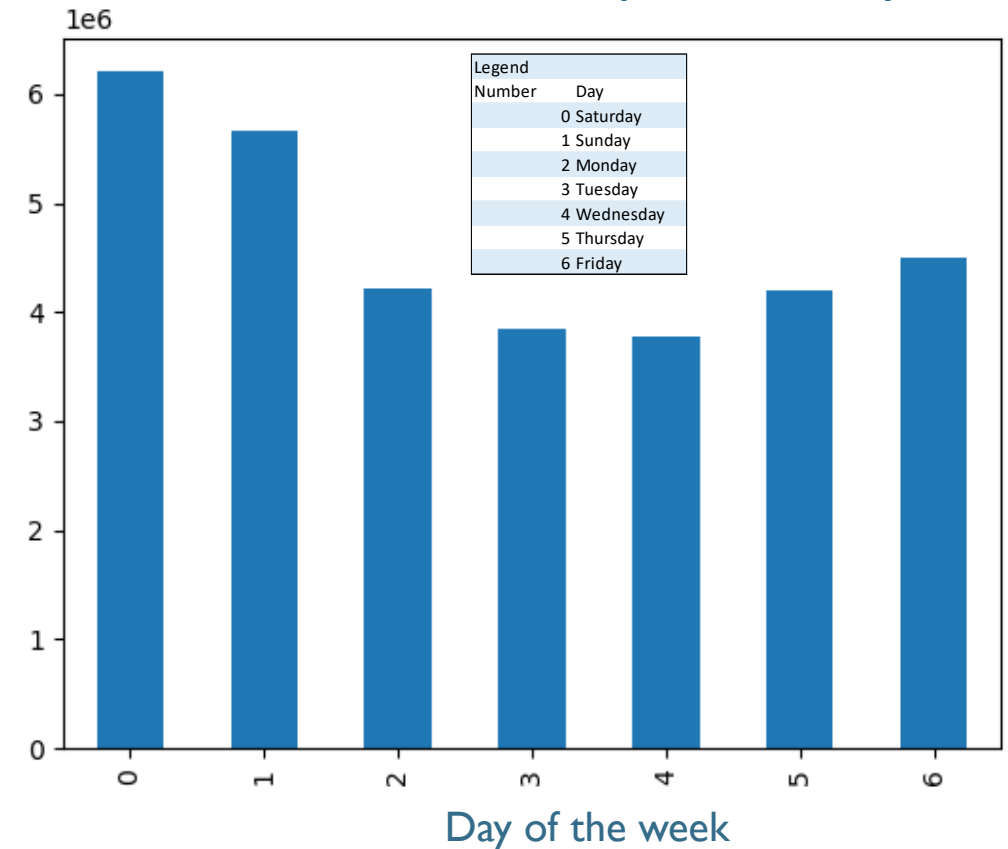
DATA ANALYSIS

MARKETING STRATEGY FOR AN ONLINE GROCERY STORE

Numbers of orders per hour of the day



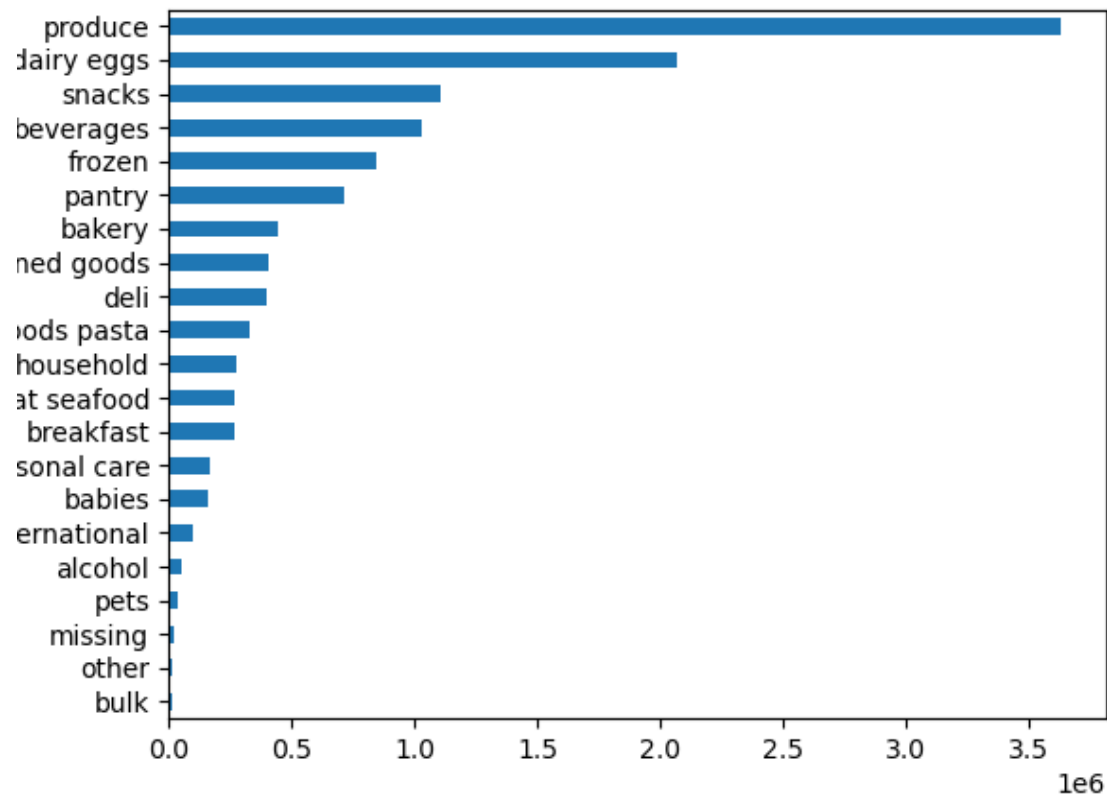
Numbers of orders per week day



DATA ANALYSIS

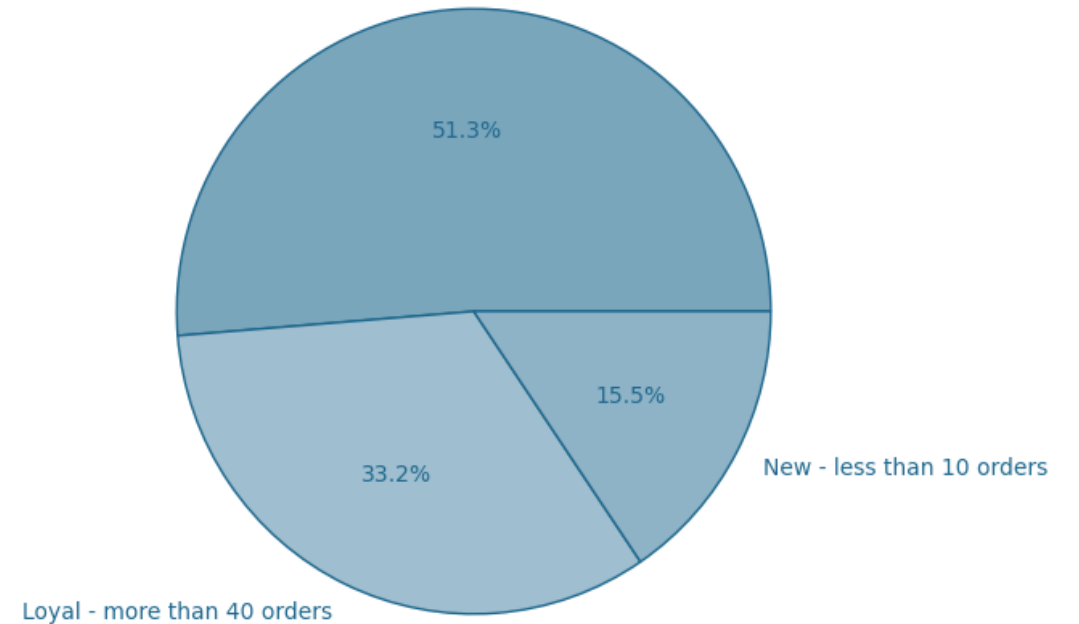
MARKETING STRATEGY FOR AN ONLINE GROCERY STORE

Which departments have the highest frequency of product orders?



Distribution of Customers by Loyalty Status

Regular - between 10 and 40 orders



CONCLUSIONS

MARKETING STRATEGY FOR AN ONLINE GROCERY STORE

- This project involved my data cleaning, wrangling steps, as well deriving new variables to answers the questions of the BI team.
- Some suggestions for a better targeted marketing include:
 - Wednesday and Tuesday are the days where we can boost sales. Scheduling ads at just before 8:00 or after 18:00, when people have time to check the ads?
 - Increase advertisement on the lowest ranking (higher potential to increase sales): Bulk, Pets, International, Baby products and Personal care
 - Maybe a loyalty bonus program to make often purchases more interesting



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BRAZIL: SHADES OF GREEN

PROJECT 5

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PROJECT BRIEF

BRAZIL: SHADES OF GREEN

- Brazil has a bad reputation for its well known problems with deforestation. But is Brazil after all that bad on environmental matters?
- Goal: Answer different questions as a data analyst.
- Questions to answer (selected):
 - How are the CO2 emissions per capita in Brazil compared to the rest of the world?
 - How is the forest coverage in Brazil and other countries
 - What is the share of renewable energy worldwide?
- I chose to use a selection of different countries spread worldwide to ease the comparisons, instead of all countries.

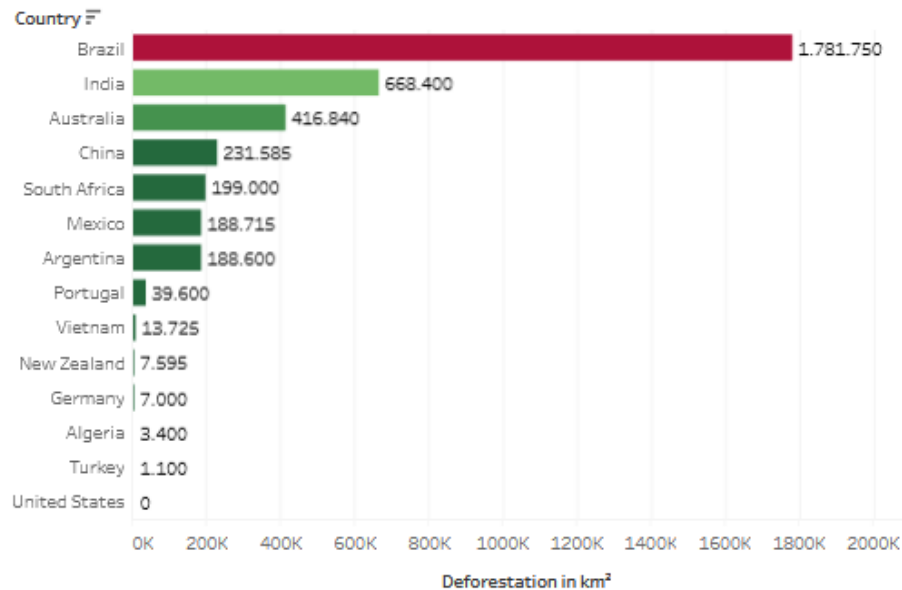
- Dataset was sourced at Our World in Data
 - Format: CSV
- Tools used for Analysis:
 - Excel
 - Jupyter - Python
- Deliverables:
 - Tableau
 - <https://public.tableau.com/app/profile/mariana.oliveira3613/viz/Brazil-ShadesofGreen/Story1#1>

DATA ANALYSIS

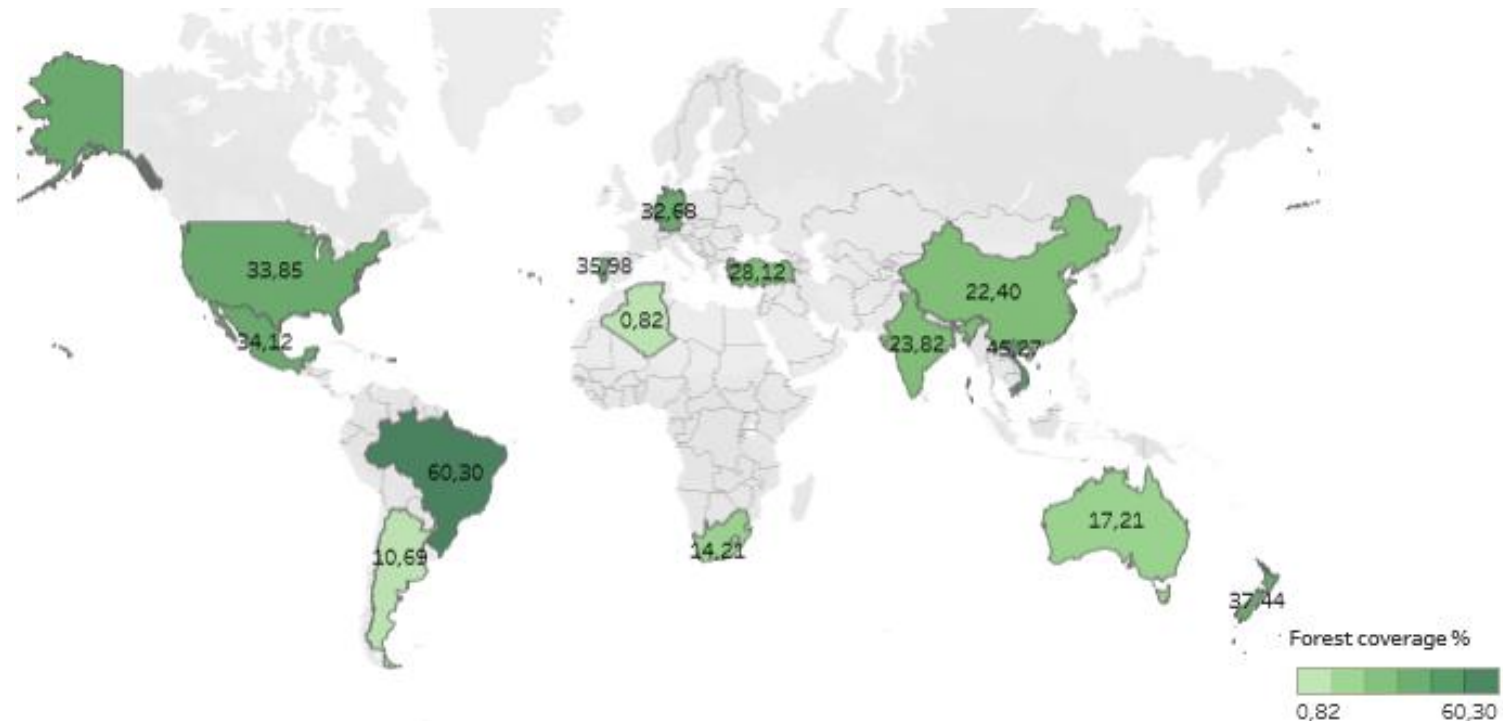
BRAZIL: SHADES OF GREEN

On the one hand, Brazil accounts heavily to the deforestation worldwide, having by far the greatest area

Deforestation area - average between 2010 and 2020



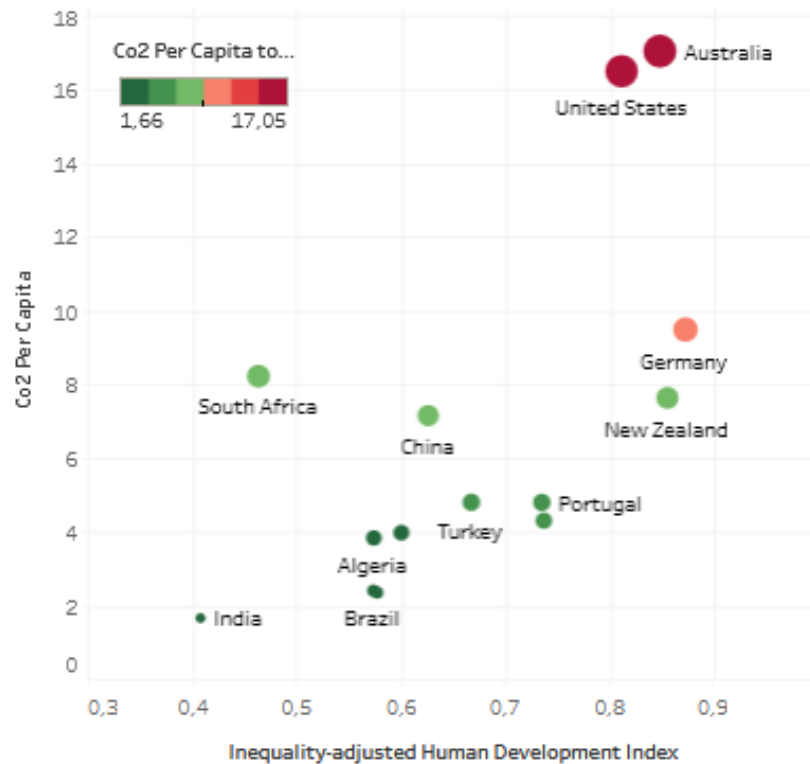
On the other hand, Brazil has also proportionally a high forest coverage, and about 44% of Brazilian forest is intact natural forest.



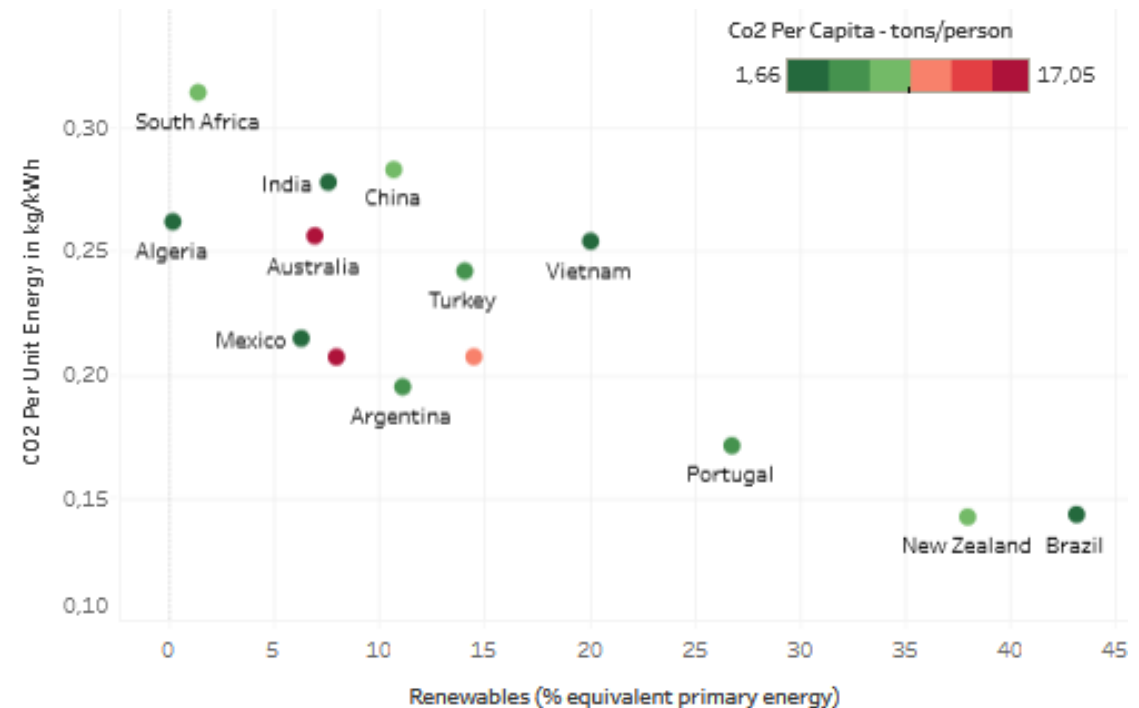
DATA ANALYSIS

BRAZIL: SHADES OF GREEN

Brazil has an overall low CO2 emissions, but also a low human development index



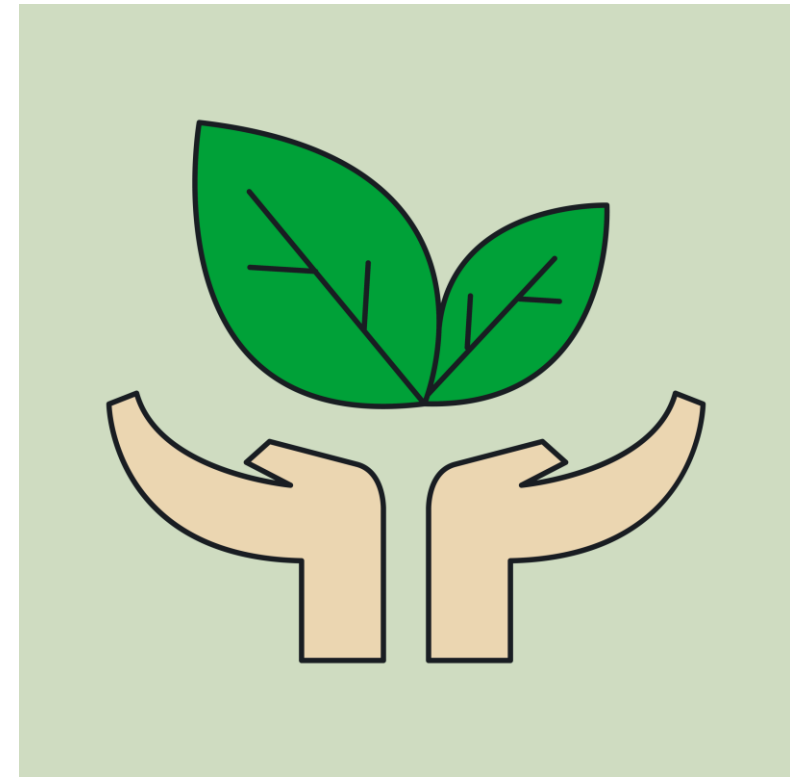
One very unknown fact is that Brazil heavily uses renewables energy sources, specially hydropower. This is also due to the fact that Brazil have very poor coal sources, which forced the investments on renewable energy much before other countries.



CONCLUSIONS

BRAZIL: SHADES OF GREEN

- Brazil has indeed a concerning high impact on global deforestation. This is an issue that must be addressed to reduce CO2 emissions and preserve biodiversity.
- However, Brazil have overall good records on environmental parameters such
 - High forest coverage, with high proportion of natural forest coverage
 - Relatively low CO2 emissions per capita
 - High share of renewable energy sources



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Thank you for your attention!

I would love to discuss further ideas and challenges – reach me out:

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<https://github.com/mvgdeoliveira>

<https://public.tableau.com/app/profile/mariana.oliveira3613/vizzes>



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