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Overall Theme: Exploring the Global Market of Chocolate

Rationale: We want to create a website for entrepreneurs and potential investors insteres in the chocolate industry. In our website we want to provide basic competitive information about key aspects of the industry:

1. The best countries to source raw materials
2. Get to know the most important global manufacturers and what type of beans they use in their manufacturing process
3. Establish if there's a correlation between the origin of the bean and the quality of the final product
4. Which markets are more specialized in manufacturing chocolate
5. Explore the relationship between the "purity" of the chocolate and the quality of the final product

Ideas of data visualizations for the chocolate rating data (highlighted by topic):

- Correlation between the bean vs. the overall rating
- Where are the best cocoa beans grown?
- Which countries produce the highest-rated bars?
- What's the relationship between cocoa solids percentage and rating?
- What is the best manufacturing country based on rating?
- Average rating by country per year? (we need to check data availability)
- Best Manufacturers based on average rating
- We could compare a few companies over the years and their ratings
- Most popular cocoa beans over time
- Particular year-top 5 company locations

Overall Diagram of the Page:

Page	Content	Technical Notes
Index	Show a summary of the content included in the webpage. We can show a preview of some of the graphics that will be on each section with a description of the content.	Html

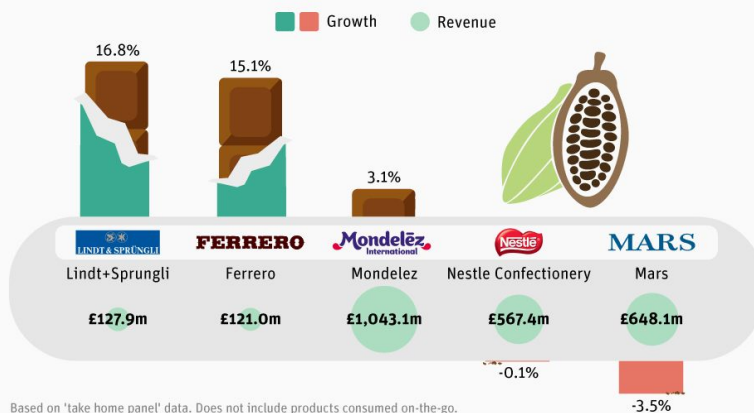|	The images will be a link to visit each section.	
Global Market	• Where are the best cocoa beans grown? • Which countries produce the highest-rated bars? • What is the best manufacturing country based on rating? • Average rating by country per year? (we need to check data availability)	Plotly leaflet
Global Manufacturers	• Best Manufacturers based on average rating • We could compare a few companies over the years and their ratings Particular year-top 5 company locations	D3/plotly
Sourcing Cocoa	• Correlation between the bean vs. the overall rating • What's the relationship between cocoa solids percentage and rating? • Most popular cocoa beans over time	Flask and sql alchemy

Dataset Chosen: https://www.kaggle.com/rtatman/chocolate-bar-ratings

Repository: https://github.com/kborig89/Project2-Team5

Inspiring Visualization:

Top five confectionery manufacturers
UK sales 52w/e 24 April 2016

Growth   Revenue

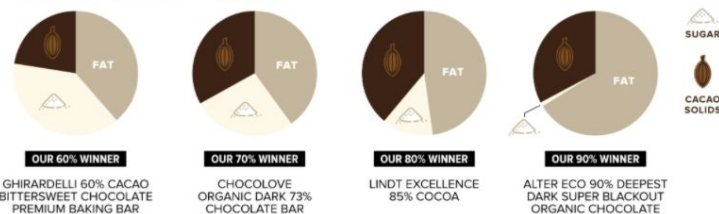|	Lindt+Sprungli	Ferrero	Mondelez	Nestle Confectionery	Mars
Growth	16.8%	15.1%	3.1%	-0.1%	-3.5%
Revenue	£127.9m	£121.0m	£1,043.1m	£567.4m	£648.1m

Based on 'take home panel' data. Does not include products consumed on-the-go.

@StatistaCharts   Source: Kantar Worldpanel   Excluding private label

KANTAR WORLDPANEL   The Grocer   statista

What Exactly Is Dark Chocolate?

"Dark chocolate" is a term with no legal definition. The U.S. Food and Drug Administration (FDA) defines "bittersweet or semisweet chocolates" (terms often used to refer to dark chocolate) as containing at least 35 percent cacao, and milk chocolate as containing 10 percent cacao. But, you ask, what does cacao (pronounced kuh-KOW) percentage even mean? Plainly put, it is the percent of ingredients in a chocolate bar that comes from cacao beans. In a 90-percent-cacao bar, 90 percent of that bar is derived from cacao beans (which includes both cocoa solids and cocoa butter), and 10 percent is other ingredients (such as sugar, vanilla, salt, and so on. However, bars with the same cacao percent won't necessarily taste the same, as they could have different ratios of cocoa solids to cocoa butter.

SUGAR

CACAO SOLIDS

OUR 60% WINNER
GHIRARDELLI 60% CACAO BITTERSWEET CHOCOLATE PREMIUM BAKING BAR

OUR 70% WINNER
CHOCOLOVE ORGANIC DARK 73% CHOCOLATE BAR

OUR 80% WINNER
LINDT EXCELLENCE 85% COCOA

OUR 90% WINNER
ALTER ECO 90% DEEPEST DARK SUPER BLACKOUT ORGANIC CHOCOLATE

Flavors of Cacao Rating System:

- 5= Elite (Transcending beyond the ordinary limits)
- 4= Premium (Superior flavor development, character and style)
- 3= Satisfactory(3.0) to praiseworthy(3.75) (well made with special qualities)
- 2= Disappointing (Passable but contains at least one significant flaw)
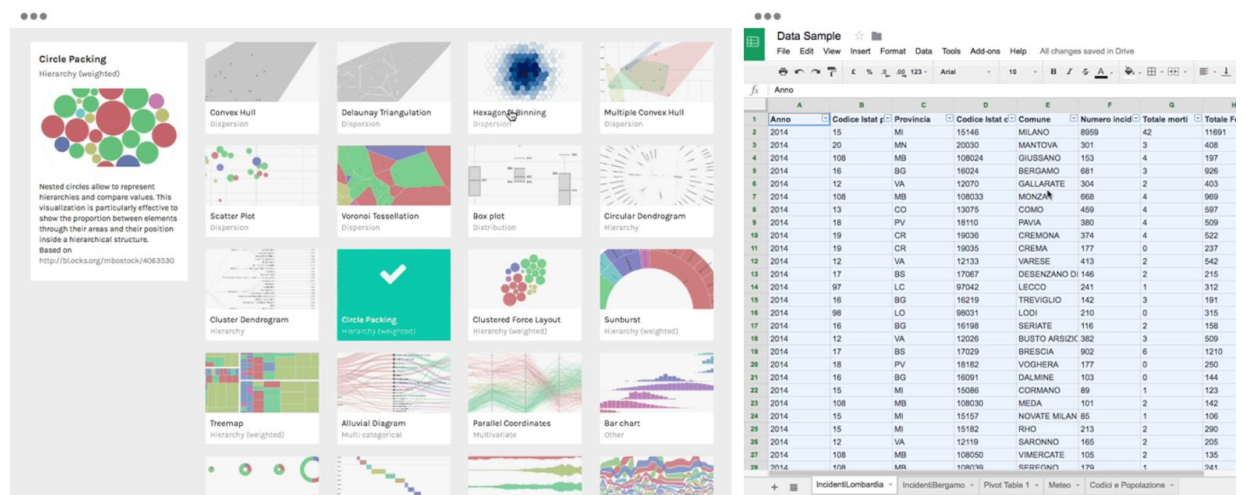- 1= Unpleasant (mostly unpalatable)

Dashboard

1. Heat map of country of origin
2. HeatMap for the ratings
3. Moving scater (like ploty homework)
4. Pie chart visualization & Bar graphs
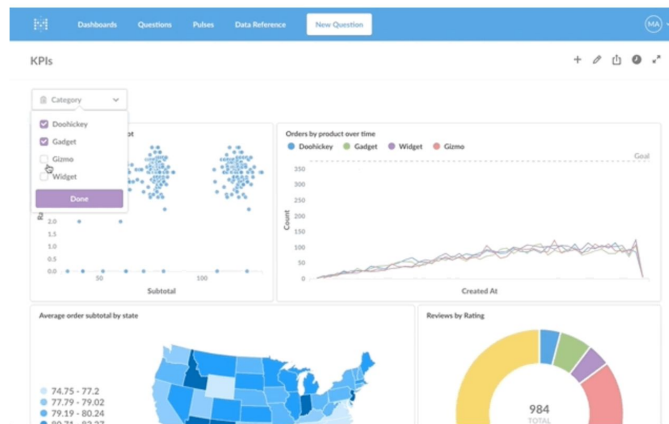
sqlAlchemy & flask & sqlite

Additional JS Library
(https://blog.bitsrc.io/11-javascript-charts-and-data-visualization-libraries-for-2018-f01a283a5727)

Raw

Metabase
   11. Metabase

HTML
CSS
Pandas/Jupyter Notebook
   1. Data Cleaning
   2.

Flask & SQL (sqllite)
Like belly button example and use json and app route to return the home page and data
Make a session
Return jsonify
Return index
Route/ market & metadate route

D3, Plotly or Leaflet
Market - d3/Raw
   1. Heatmap
   2. Graph of countries producing rating by year
   3.
Manufacture- Leaflet
   1. Heatmap
   2. Line graph of avg rating over years per company
   3.
Sourcing- d3/raw
   1. Plotly circles
   2. Gauge of avg rating

3. Bubble by country that show the bean use(count the beans)

Metabase/Raw(js lib not covered)

Presentation