



Domain

What Must Be Done Using Analysis?

- The outcome of this level design process is a detailed understanding about the real needs of the target user.
- The methods typically include interviews, observations, and careful research about target users.

Scenario

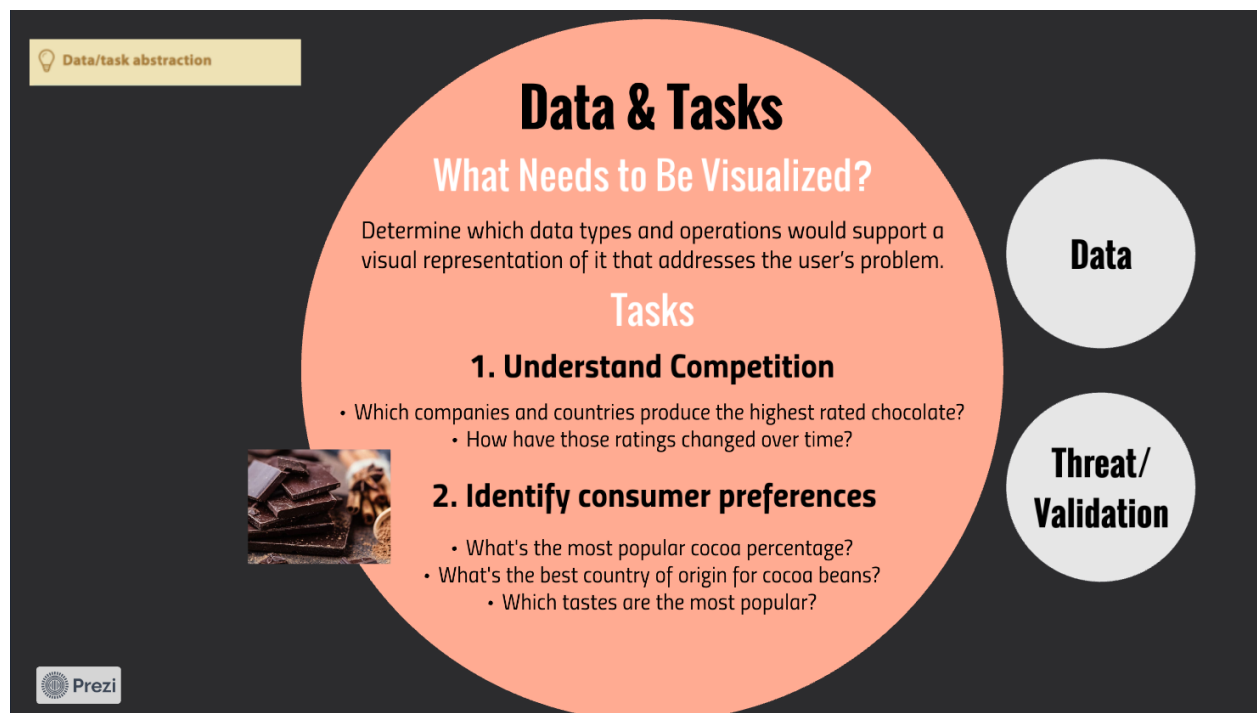
A chocolate company is seeking a competitive advantage in the market and is curious about which cocoa percentage is the most popular.

User Needs

Learn about competition and consumer preferences.

Threat/Validation

Prezi



Data

Description of data types

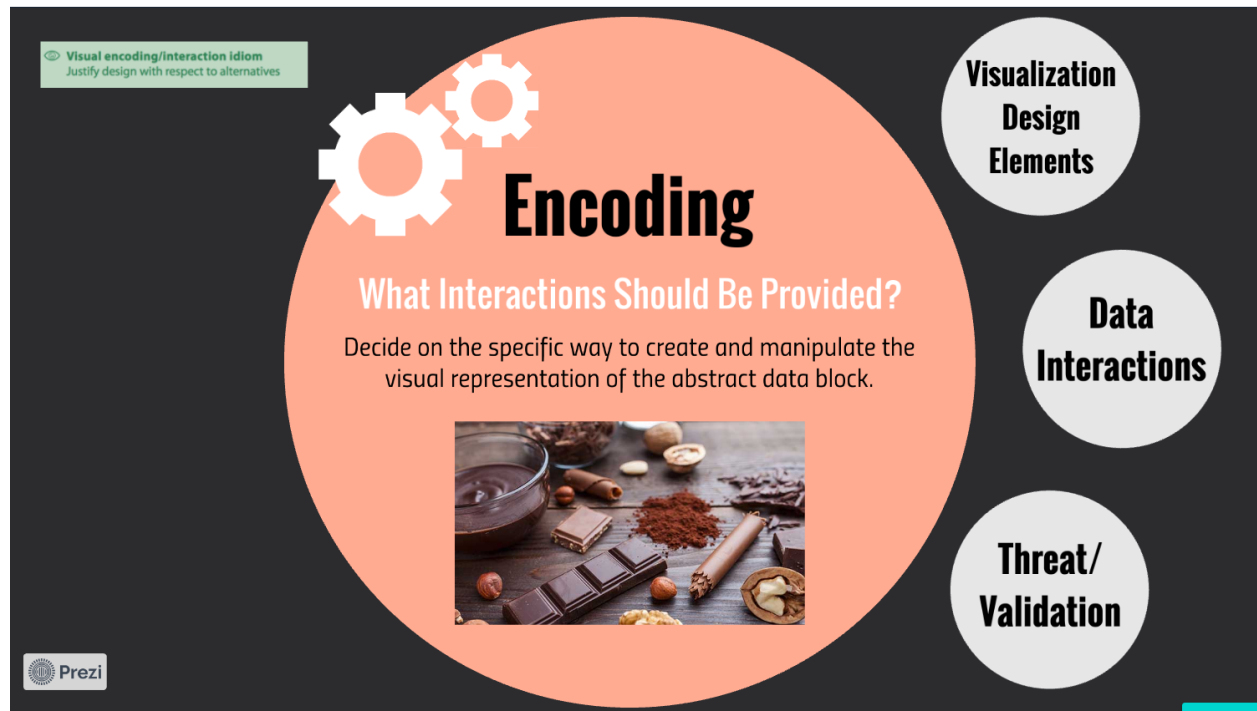
- **Ratings** for chocolate from 2006 to 2020
- **Company Location** (66 distinct values)
- **Country of Bean Origin** (62 distinct values)
 - **% of Cocoa** (ranges from 42-100)
 - **# of Ingredients** (ranges from 1-6)
- **Boolean indicators** for whether or not the Chocolate contains Cocoa Butter, Vanilla, Lecithin, Salt, Sugar, and/or other Sweetener without Sugar
 - **Descriptions of Taste**



Threat/Validation

Threat: Bad data/operation abstraction


Validation: Test product on target users, collect anecdotal evidence of utility. Have a member of the target user community try the tool. Verify it solves for outlined problems.



Data Interactions

Decide on the specific way to create and manipulate the visual representation of the abstract data block. Each distinct possible way is called an idiom.

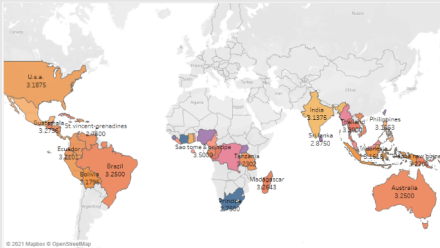
All the various idioms will comprise the final dashboard.



- Geographic Analysis
- Time Series Analysis
- Cocoa % Comparison
- Taste Description
- Company Ranking

Geographic Analysis

Average rating by country of bean origin



Country	Average Rating
USA	3.3375
Colombia	3.2500
Guatemala	3.2500
Brazil	3.2500
Peru	3.2500
Indonesia	3.2500
India	3.2500
China	3.2500
Japan	3.2500
South Korea	3.2500
France	3.2500
Germany	3.2500
Italy	3.2500
Spain	3.2500
UK	3.2500
Australia	3.2500

By Company Location

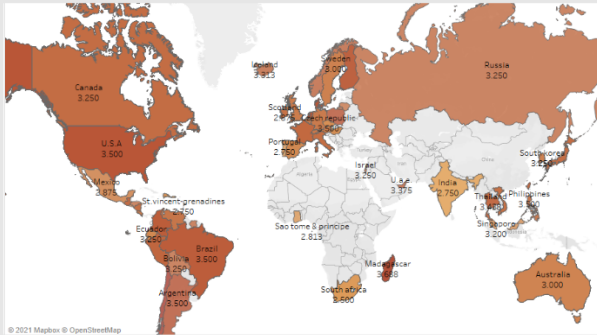
DSBA 5122 Visual Analytics

Visual Design Contest

Group 1

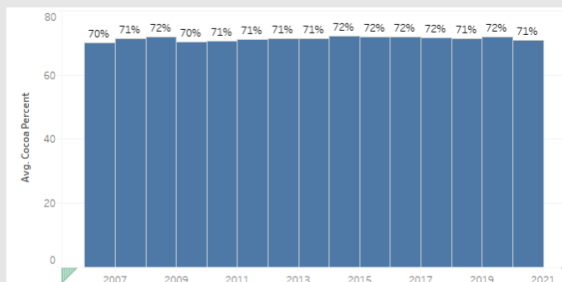
Catherine Safrit, Shashank Appidi, Carsten Lingemann, Taylor Ferguson

Average Rating by Company Location

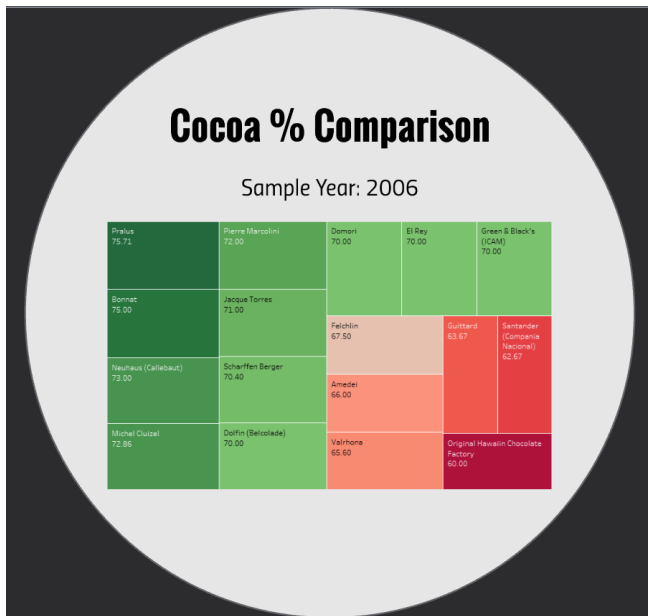
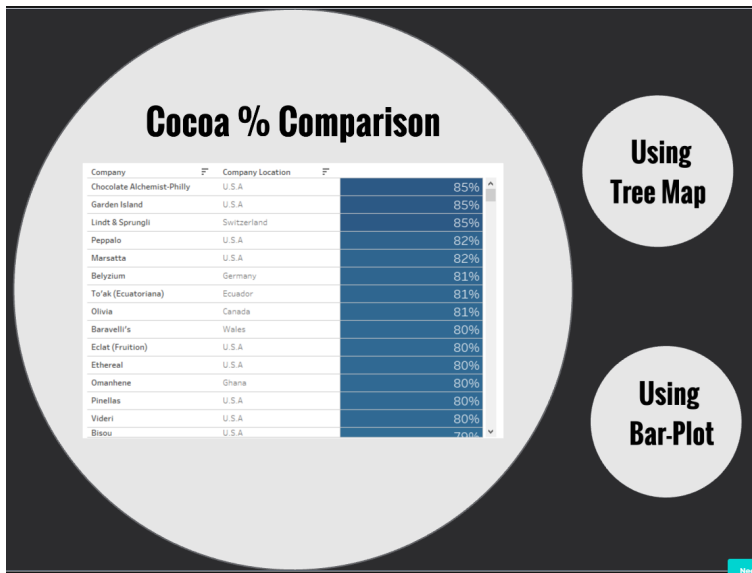


Time Series Analysis

Average cocoa percent used by companies (2006-2021)



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Visual Design Contest
Group 1
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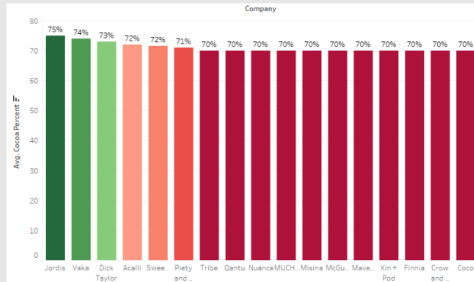
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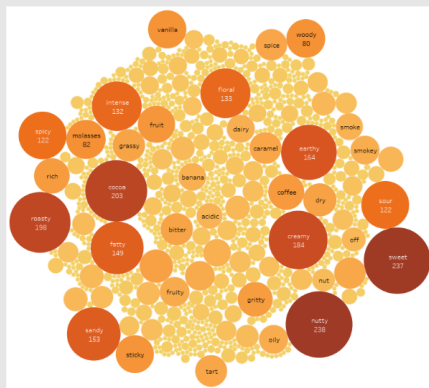
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Cocoa % Comparison

Sample Year: 2020

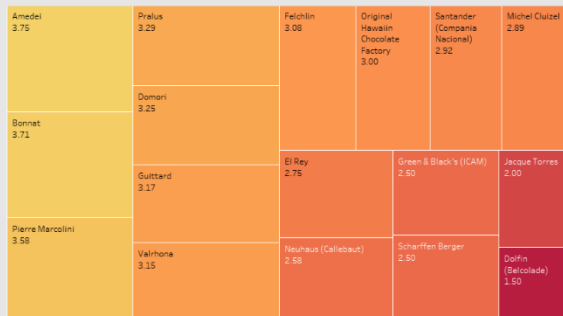


Taste Description



Company Rating


Sample Year: 2006



Threat/Validation

Threat: The selected visualizations, elements and comparisons are not effective at communicating the desired abstraction to the person using the system.

Validation: Carefully justify the design with respect to known perceptual and cognitive principles.

**Algorithm**
Measure system time/memory
Analyze computational complexity

Algorithms

How to Visualize Design?

Create a system through which the designer can efficiently handle the visual encoding and interaction idioms.


Geographic Analysis
Compute average rating by filtering for location of company/bean origin

Time Series Analysis
Filter data by year of review to compute average cocoa percent over time


Taste Description
Aggregate taste descriptors; size as a preattentive feature

Cocoa % Comparison
Filter by company name, location, and avg cocoa percentage

Company Ranking
Average chocolate bar rating by company



**Threat/
Validation**



Threat/Validation

Threat: Slow algorithm. Interface is suboptimal in terms of loading times. Algorithm is incorrect and doesn't load data interactions or encoding properly.

Validation: Maximize for simplicity in design. Minimize abstractions for speed when possible. Check for correctness in coding.

Dashboard

Bringing it all together

