Presentation

Worldwide Food / Feed Consume Analysis

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CS 360/560: Data Visualization Final Project

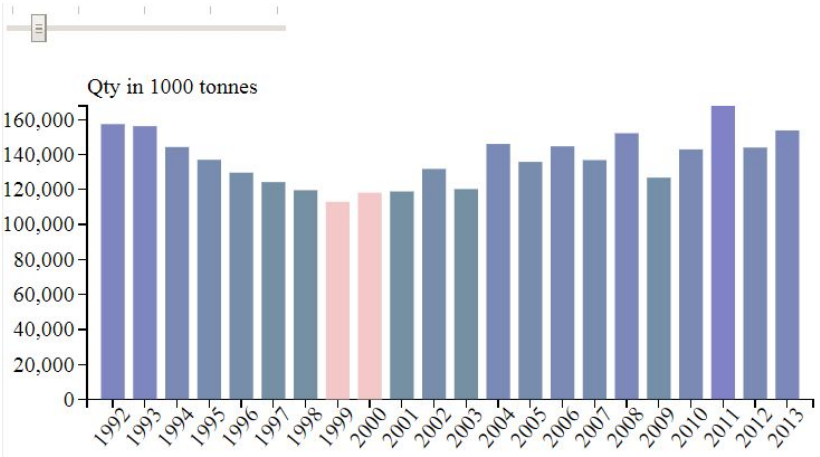
Background and Motivation

Background: Our world population is expected to grow from 7.3 billion today to 9.7 billion in the year 2050. Finding solutions for feeding the growing world population has become a hot topic for food and agriculture organizations, entrepreneurs and philanthropists.

Motivation: These solutions range from changing the way we grow our food to changing the way we eat. To make things harder, the world's climate is changing and it is both affecting and affected by the way we grow our food – agriculture. We want to have a deep insight on our worldwide food production - focusing on a comparison between food produced for human consumption and feed produced for animals.

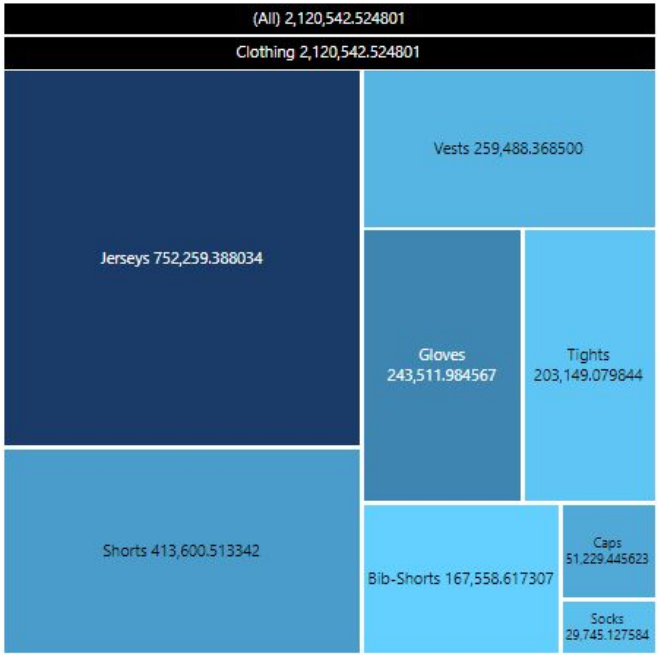
General Technical Review of Vis 1

- Add the mouseover event for displaying the label and value in opacity level of 0.8
- Use the web element of “input” to indicate the threshold that we would like to set to filter on the bars
- Define the change event for the web element of “input” to implement the filter out of bars based on the threshold we set
- Implement the transition effect on the appearance and disappearance of bars



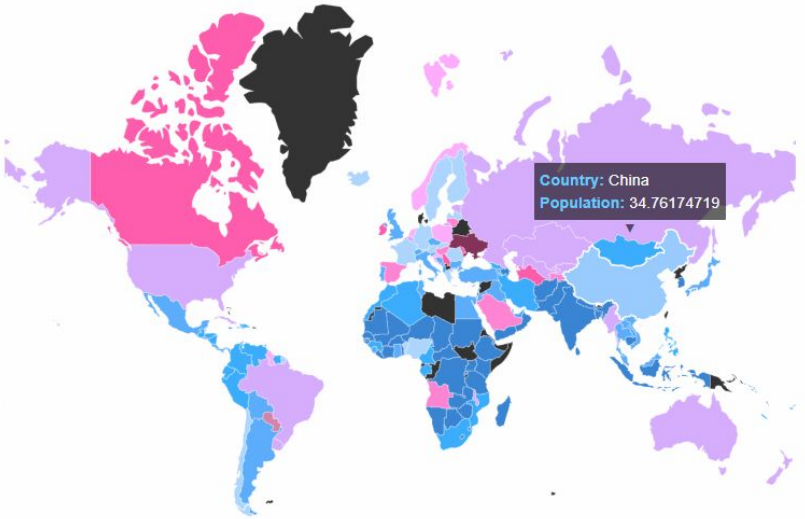
General Technical Review of Vis 2 (Treemap)

- Displayed a large amount of hierarchical data using nested rectangles of varying size and color. The total area of a treemap reflects the sum of its parts, which consist of inner rectangles or nodes.
- Prepared a metric set beforehand, convert dataset to hierarchy structure. For example, create a new metric set by dragging two measures (Feed amount and Country) and a hierarchy/dimension to the canvas.



General Technical Review of Vis 3

- Preprocessing Data set and generate the ratio of Feed for livestock over Food for human, stored the ratio data into world_population.tsv
- Collect the world map geometry coordinates data into world_countries.json
- Join .tsv and .json with country id to visualize the ratio level in color onto world map

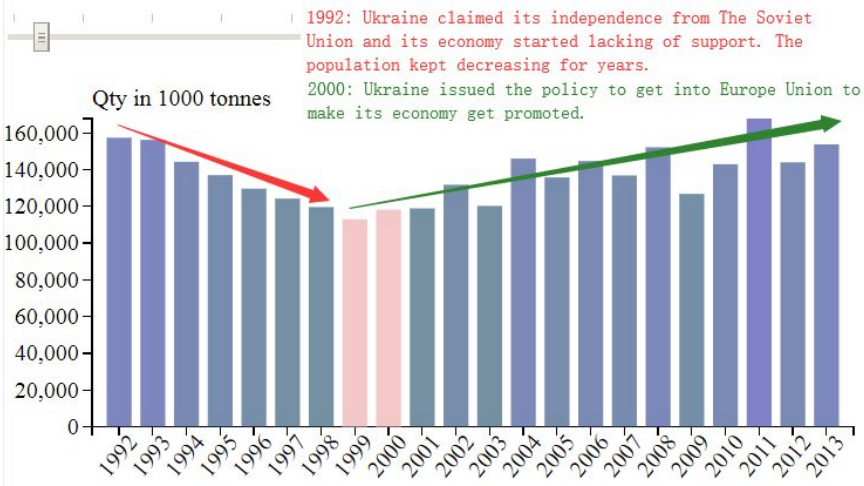


Best Part of Our Project - Geomap of Vis 3

- At the beginning we were trying to use the coordinates recorded in source of feed and food data downloaded from Kaggle, however we found that coordinates only indicated the capital city of each country
- We initially tried to show up the comparison amount ratio of feed and food by pie chart or sized cycles but it usually does not make any much difference from the audience's perspective (some neighbour countries' ratio are very closer to each other hence it's hard to tell).

Insight we gained from Vis 1

Ukraine’s economy touches the ceiling after it derived from The Soviet Union and its political environment was not stable since then. Its population kept decreasing for many years hence the food of consuming makes a vivid explanation of what was happening.



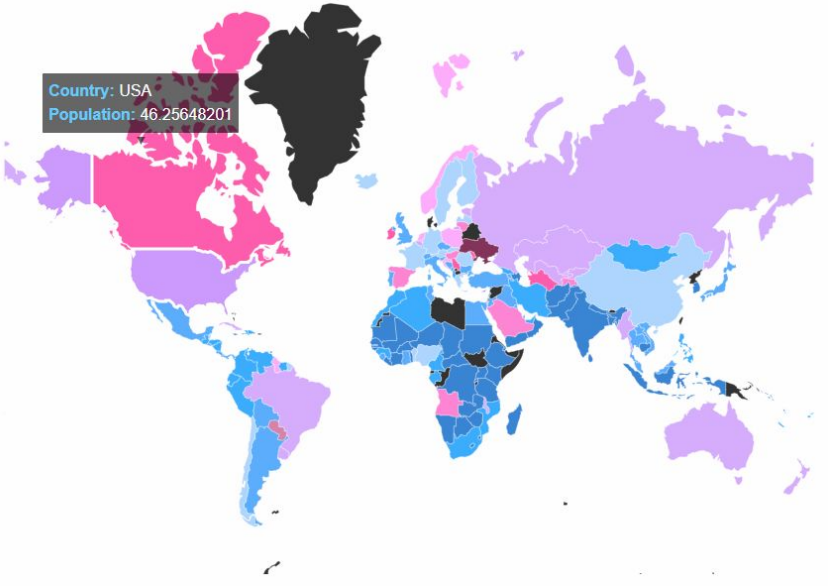
Insight we gained from Vis 2

From two treemap(Feed treemap and Food treemap) we got, we can clearly see the amount comparison from the area of rectangle. The comparison can be affected by its religion and economic growth of a country.

For example, China is the No.1 among two maps. India definitely has much more Food amount than Feed, since India called a vegetarian country with less meat consumption etc.

Insight we gained from Vis 3

From the geomap of ratio of Food and Feed, generally, we cannot say that the developed country has higher ratio, since this indicator can be affected by people eating diet, religion, population, animal agriculture, economic growth etc. Based on these factors, we should move forward and conduct the next analysis.



Demo and Website

- Visualization 1 - Trend of Food Consumed
- Visualization 2 - Food and Feed Available among all Countries
- Visualization 3 - Worldwide Feed and Food Ratio Comparison

Important Conclusion

In our current world the global population is continually increasing hence the argument that producing feed for livestock conflicts with feeding hungry people is likely to continue for some years. It is clear that we need to improve our strategies to balance the by-product feeds to improve the efficiency of mitigating the environmental and economic impact of animal agriculture. The challenge thus remains to foster social acceptability and understanding of the industry’s contributions, thus advancing the industry to fulfilling the three pillars of sustainability.

Future Work

In order to have a deeper insight on our worldwide food and feed production, we need to:

- Collect more related data from people eating diet, religion, population, economic growth from different country, we can do more analysis towards the ratio of feed to food.
- Compute the correlation between ratio and other factors, and visualize them use Heatmap.