

American Crops Information Data Visualization

Project Proposal

Basic Info

Project Title: American Crops information

Link: <https://github.com/danielwwong/DataVisFinal>

Team:

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Background and Motivation

We planned to design a data visualization project based on the data provided by United States Department of Agriculture Economic Research Service (USDA ERS). They provide detailed statistics on feed grains including corn, sorghum and barley information.

By analyzing these information, the audience of our data visualization shall discover the trend of price, supply and disappearance. Also, they would get a perspective of the import and export situation of a certain time. It would affirmatively help them to make a plan of planting grains.

Project Objectives

The audience of our data visualization is the people who are related to feed grains planting industry.

We aim to provide the data chars as follows:

1. Three types of feed grains' prices in three different charts divided by different states.
2. The national supply, disappearance, import and export charts of corn.
3. The national supply, disappearance, import and export charts of sorghum.
4. The national supply, disappearance, import and export charts of barley.

We aim to design these data visualizations to help the people in this industry get a better and more straightforward perception of the current and past status in feed grains, and thus produce a better plan for growing grains in the future.

Data

We will use the data from USDA ERS to construct and implement our data visualizations. They would release new data each month to the public.

One can find the data in <https://www.ers.usda.gov/data-products/feed-grains-database/feed-grains-yearbook-tables.aspx>

Data Processing

During the discussion of our project proposal, we decided to use these following tables for our data source:

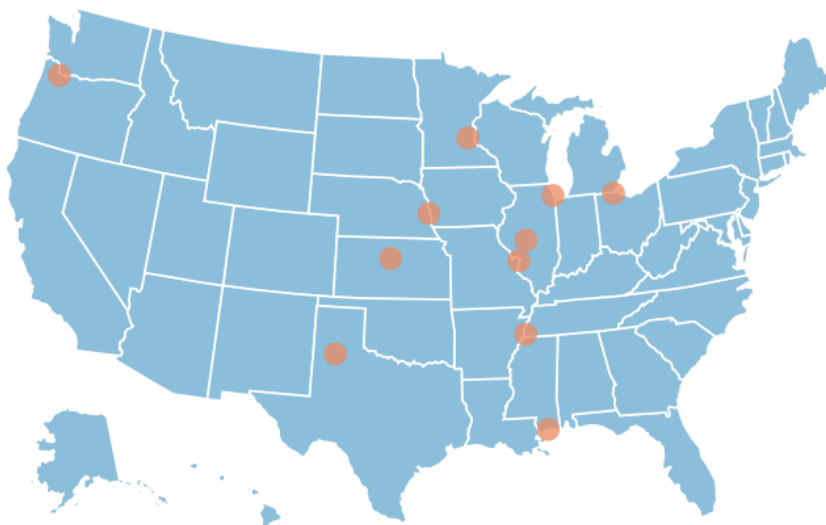
Table Number	Feed Grain Type	Information Type
Table 4	Corn	Supply, Disappearance
Table 5	Sorghum	Supply, Disappearance
Table 6	Barley	Supply, Disappearance
Table 12	Corn	Price
Table 13	Sorghum	Price

Table 14	Barley	Price
Table 18	Corn, Sorghum	Export
Table 19	Barley	Export
Table 20	Corn, Sorghum	Import
Table 21	Barley	Import

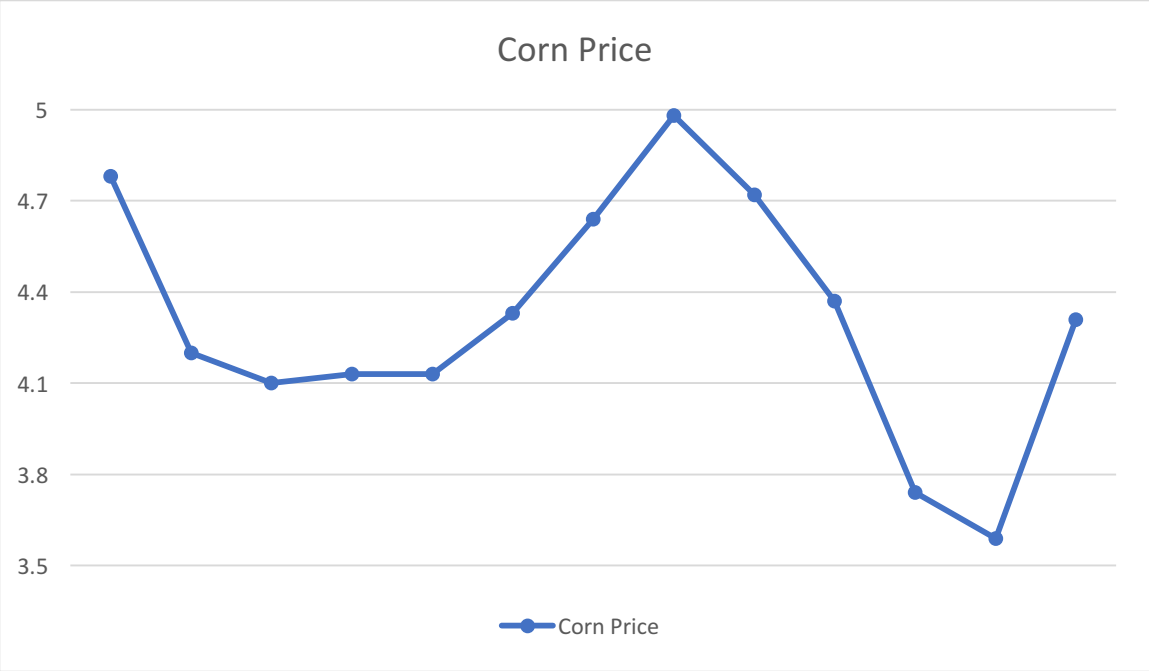
Since the original source file has 35 tables and some redundant data we will not use in this project. We will simply extract the data we will use to generate a new file.

Visualization Design

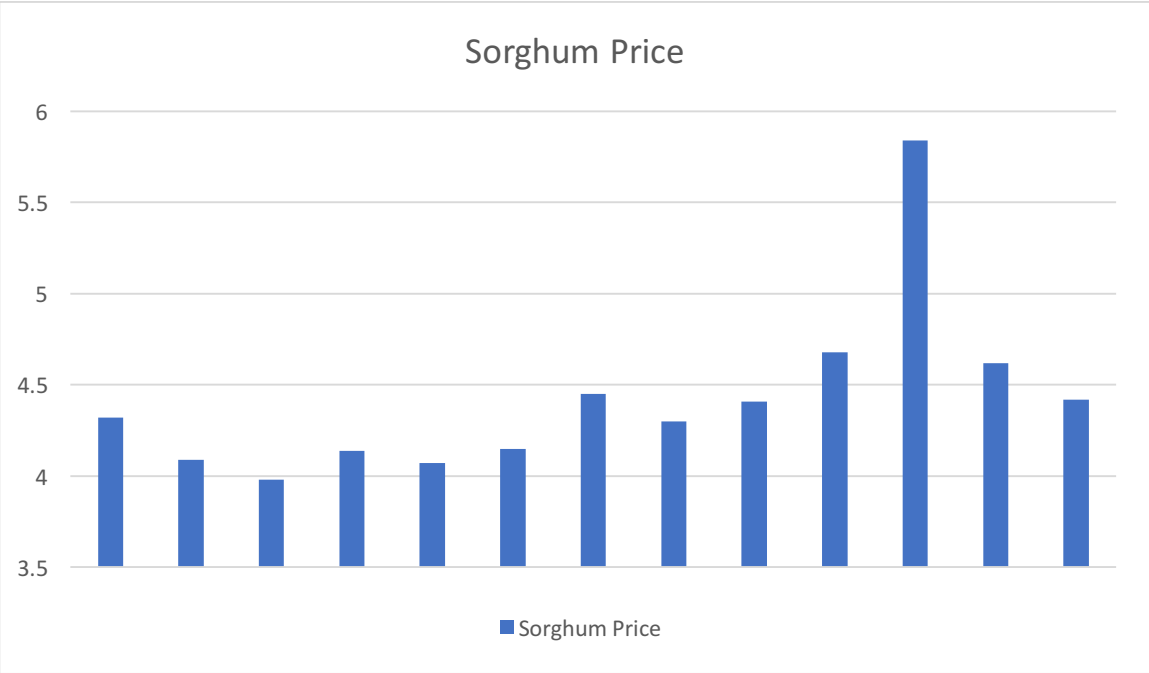
We will demonstrate the city using the American map. The points in the map indicates a city.



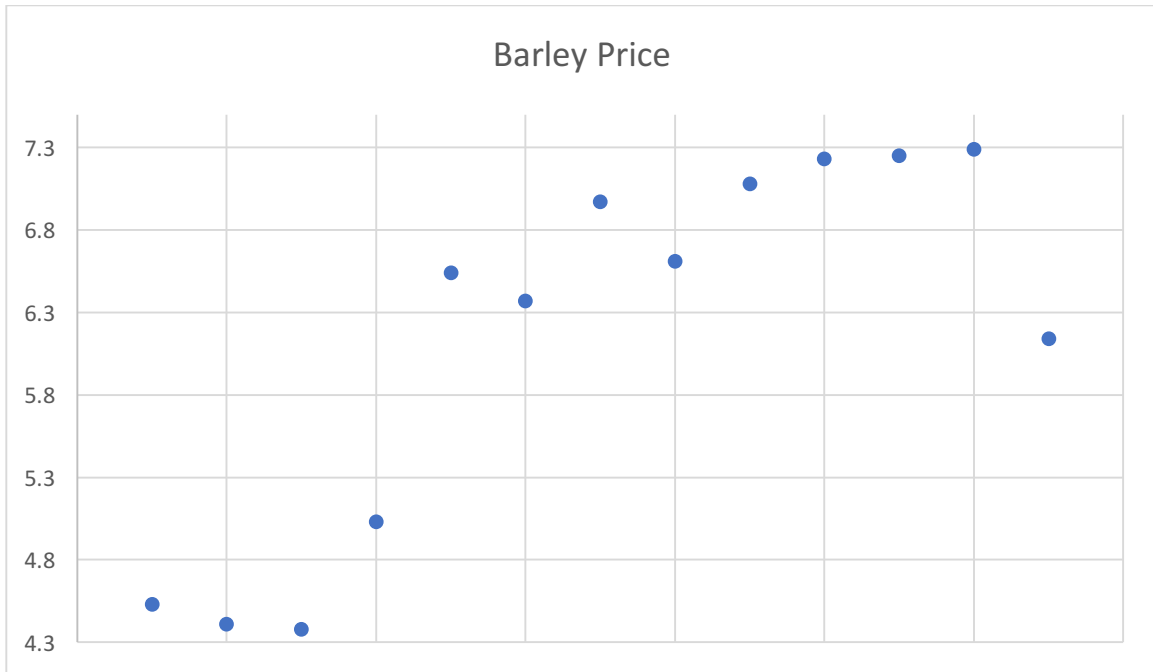
We will demonstrate the feed grain price in three different charts as follows.



corn price in line chart

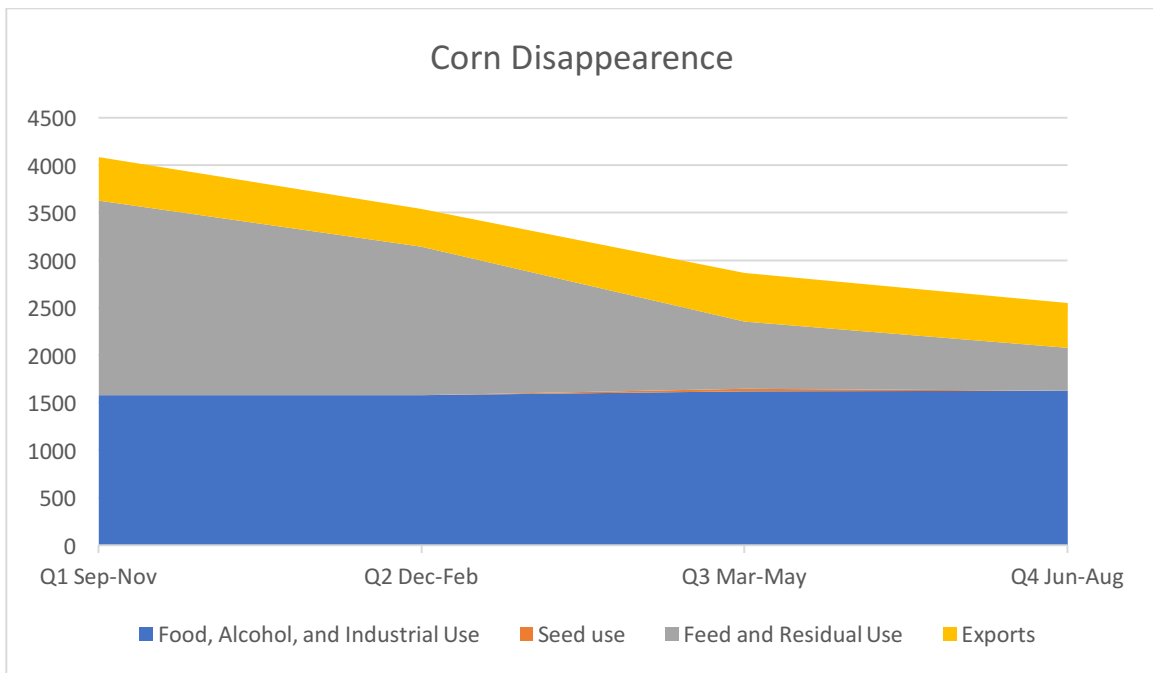


sorghum price in bar chart



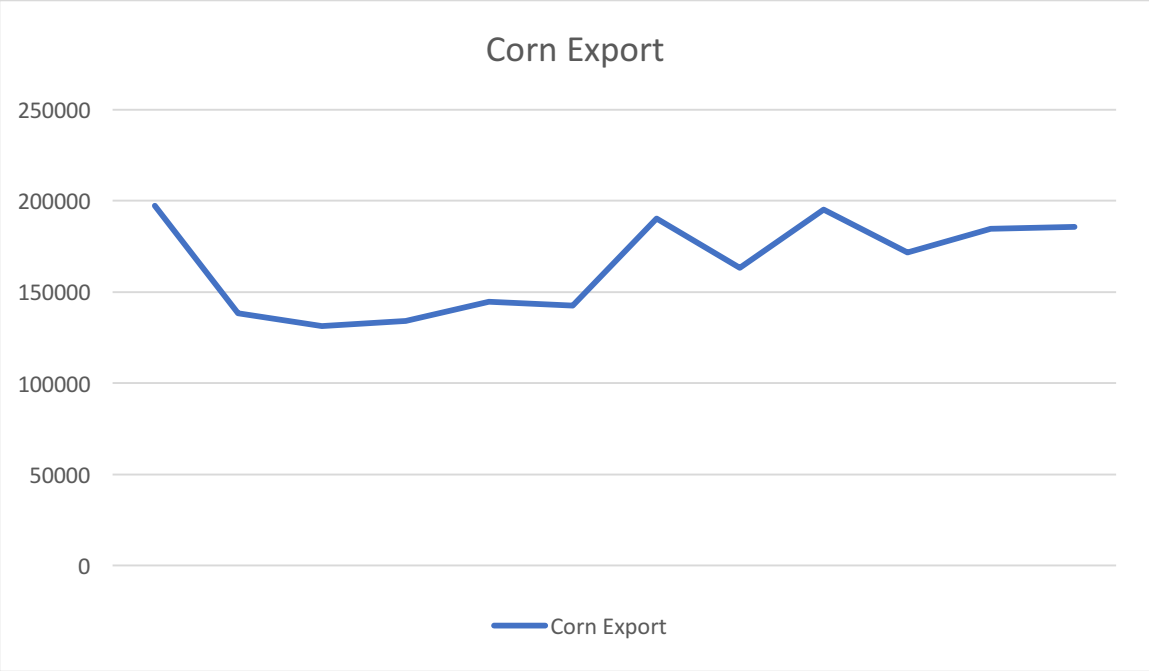
barley price in scatter plot

We will demonstrate supply and disappearance information in stream charts.



corn disappearance in stream chart

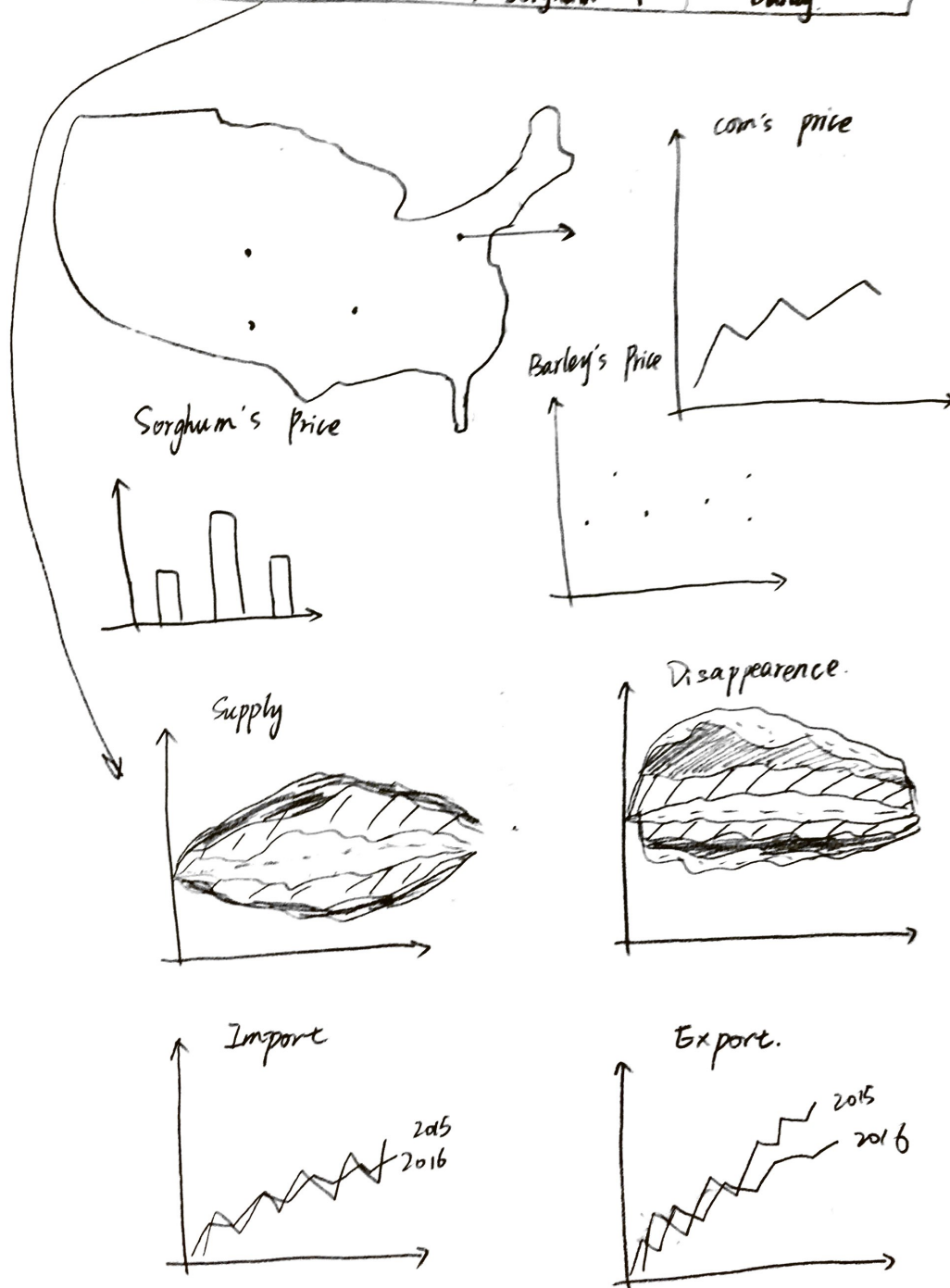
We will demonstrate export and import information in line charts.



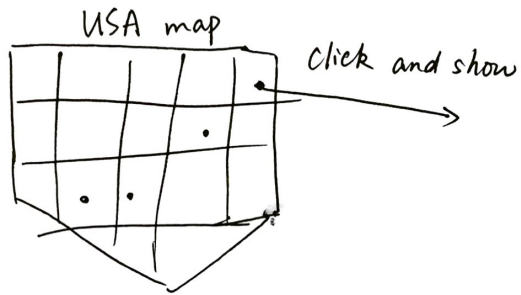
corn export in line chart

Below are our sketches of our website.

America Crops Information



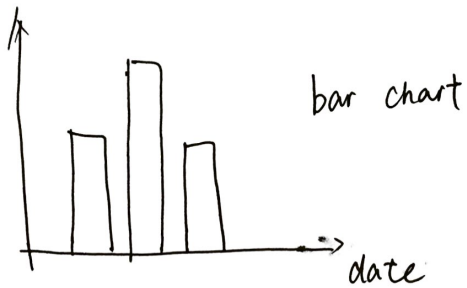
- main crops market



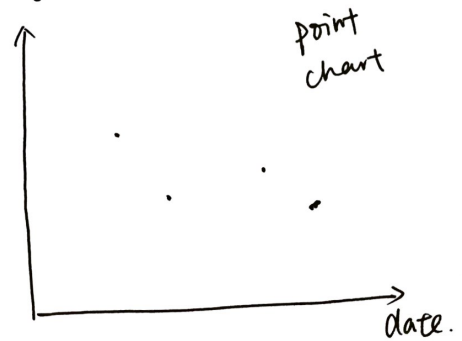
Corn's cash price



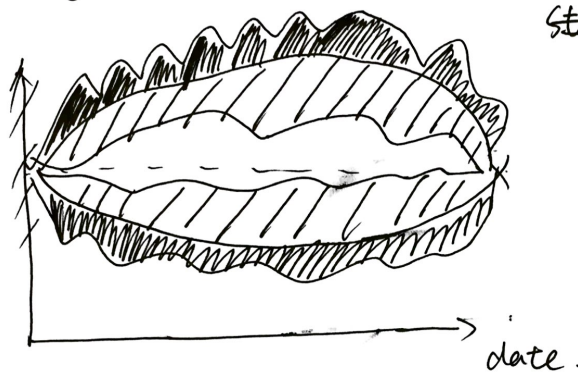
Sorghum's price



Barley's price



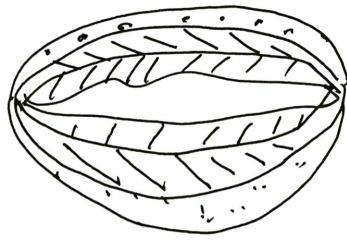
Supply Stream Chart.



~~Stream~~

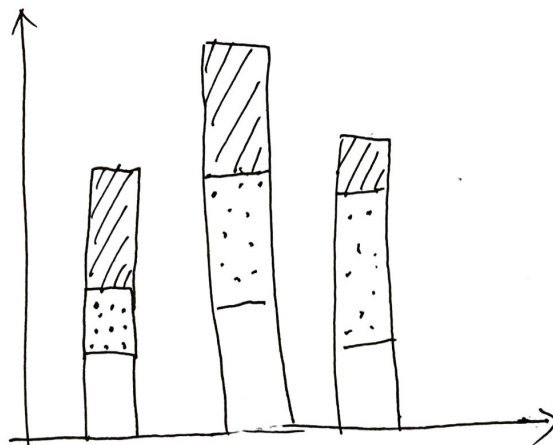
- Beginning stocks
- production
- import

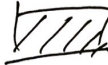


Disappearance Stream Chart.



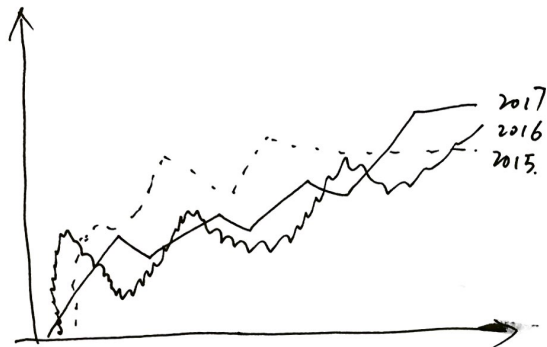
-  food, alcohol use
-  feed use.
-  residual.
-  exports.

Supply stream chart

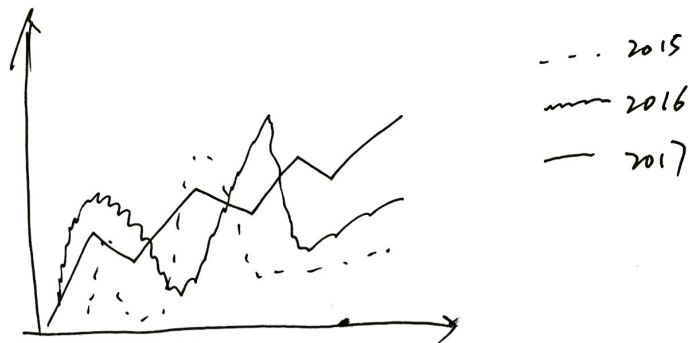


-  Beginning stocks
-  production
-  Import

Import line chart



Export Line Chart



Must Have Features

1. Map Overview: Use JOSN file to create the USA map, and add path for it. Some points of the main food markets are mapped on to the map according to the coordinates. When viewers mouse over the point, the corresponding corn, sorghum and barley information about that state would appear on the map.
2. Choice Bar: Top of the website is the choice bar, which should include “Map”, “Corn”, “Sorghum” and “Barley”. When viewers click on the bar, the website would jump to the corresponding area. Also, when viewers drop down to “Corn”, “Sorghum” or “Barley” information, the choice bar would change accordingly.
3. Stream Chart: Since supply and disappearance are separately meaning the sum of beginning stocks, production and import, the sum of food, alcohol use, feed use, residual and exports, it is reasonable to show the aggregate data by stream chart.
4. Import and Export Line Chart: Still, when showing different feed grains’ import and export volume, we would plot the data by line chart.
5. Bar Chart, Plot Chart and Line Chart: These three charts are meant to represent details about states’ corn, sorghum and barley separately.

Option Features

1. Since some data in the original data source are missing, we will preprocess them before using the data to draw data visualizations.
2. We will make the charts connected and interactive with each other.
3. Since it may be difficult to read the values from stream charts, we will show the detailed information of the stream charts when hovering the mouse on then.
4. The charts or maps would be straightforward to show information.

5. Stacked Bar Chart: We may use stacked bar chart to show the supply and disappearance variant in place of stream chart.

Project Schedule

Time	Task
02/15/2017	Project Proposal
02/18/2017	Modify with Feedback
02/22/2017	Design and Analysis
02/23/2017	Prototype Presentation
02/26/2017	Finish All Visualizations
02/28/2017	Finish the Video
03/02/2017	Polish and Final Submission