Import & Export statistics of United States

CS 560 Final Project Proposal

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https://github.com/zwang190/CS560_final_project

Background and Motivation

As the globalization evolved, each commodity and product, which are being used by customers in daily basis, are not monotonically produced or assembled in one country or region. Countries and regions are conducting international business and trades in an increasingly frequent manner, generating revenues and obtaining the goods and services benefiting domestic markets by doing export and import with various partners within the world-wide range.

My motivation came from my previous experience. When I was undergraduate, my major was business administration with concentrating in international business. Also, during my internship, I worked in Dubai, United Arab Emirates for a company which was doing vegetables and fruits import and export.

Project Objectives

The goal of this project is to illustrate current economic situation to audiences by visualizing international trades among United States and other parters in this world as the trading activities will directly reflect the current status of economy. Also, the world was hit by Covid last year and people's lives have been impacted significantly. In this case, the designer intend to display damage caused by Covid by visualizing comparisons of data collected before and during covid, segmenting the data into several categories, including but not limited to steel, fuel, food products and textiles.

Data

Data will mainly come from United States Census Bureau and World Integrated Trade Solution, which are credible and free website with large mount of trading data available. The link will be attached as following:

https://www.census.gov/foreign-trade/index.html

https://wits.worldbank.org/CountryProfile/en/

Data Processing

Data from those two sources are well organized. Certain of the data is in CSV format, which can be directly used. Some of them are in Excel format, which needs some parsing work, such as using Python scripts to implement the extraction.

Visualization Design:

Design will be attached at the end of the report.

Must-Have Features:

A. Page 1 - Cover page with a US flag , title and etc..

B. Page 2 - Several map graphs exhibiting total U.S foreign trade with world in U.S. dollars in different years.

C. Page 3 - Historical data with regarding with balance of payments.

- Three bar charts with qualitative color scale.

- Exhibit three variables, including total balance, import and export respectively in different years.

D. Page 4 - Import and Export information based on metropolitan areas.

- Several map graphs exhibiting import and export statistic information for each metropolitan area

- Plan to include year 2019 and 2020

E. Page 5 - Import and export information based on states.

- Several map graphs exhibiting import and export statistic information for each state.

- Plan to include year 2019 and 2020

F. Page 6 - U.S. foreign trade in goods with world (monthly)
- Have four multi-line graphs to display U.S. foreign trade in goods with world month by month.
- Each graph represents one year.
- Plan to include from year 2017 to year 2020

G. Page 7 - Details
- Four pie charts indicating percentage of goods, such as fuel, minerals, steel and others et..
- Include four years from 2017 to 2021.

Optional Features:
- Interactive functions with users.
- Add tariff information if applicable.
- Add more graphs, such as information regarding with certain specific commodities.

Project Schedule:

April 7th	Revised Proposal
April 12nd	Alpha Release
April 26th	Beta Release
May 8th	MVP for Presentation
May 15th	Final report
May 19th	Final deliverables

Page 1 — Cover Page

Import & Export of United States
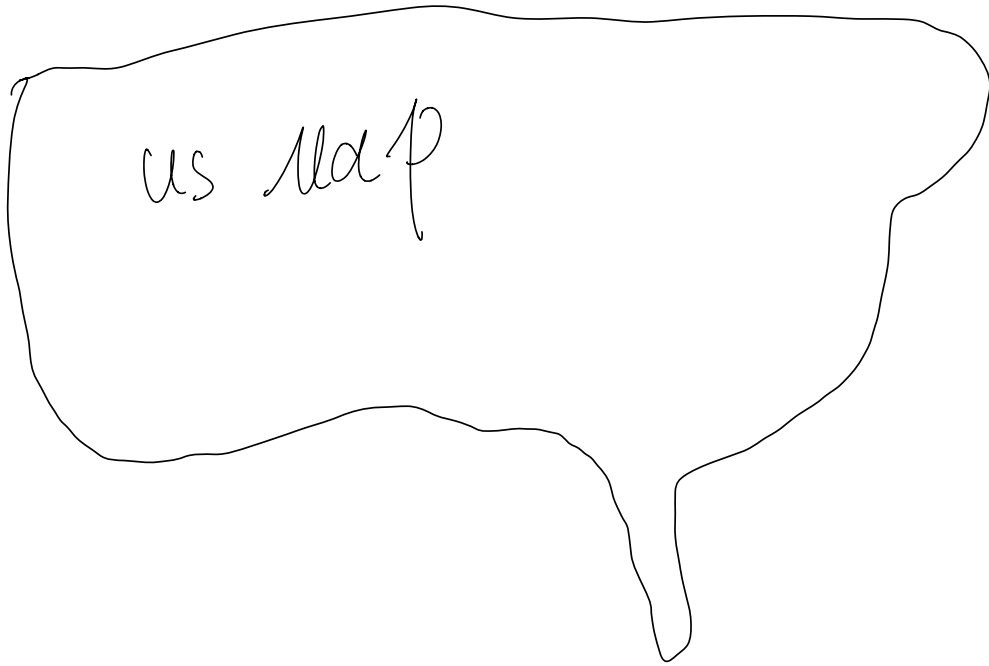
US Map

page 2 - general information (The whole US)

us map
> total import in US dollars
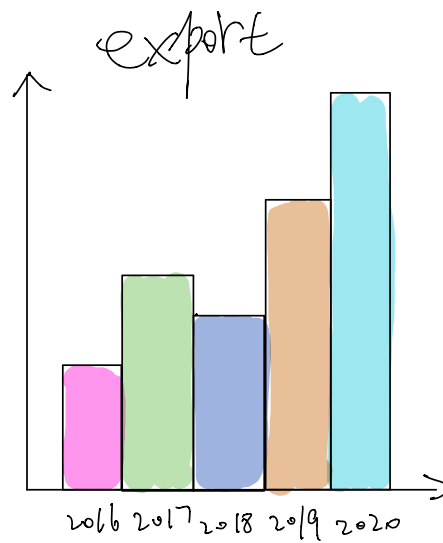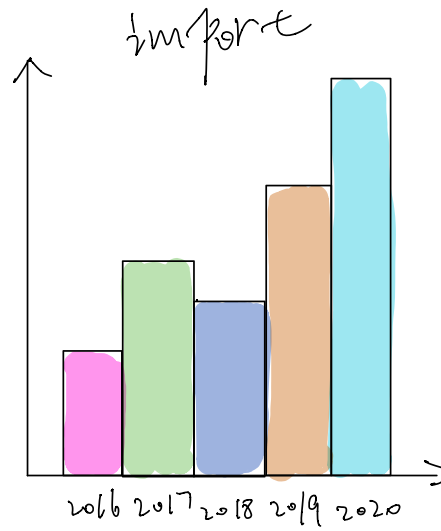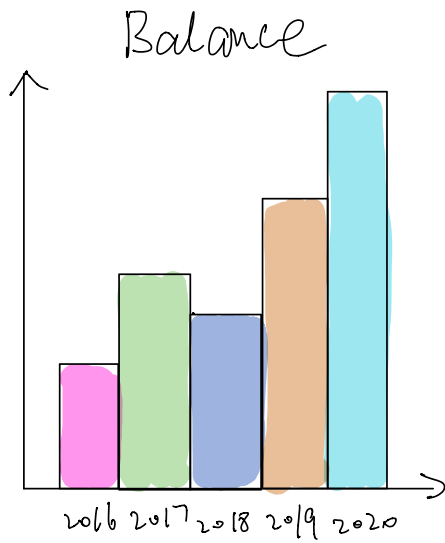> total export in US dollars

— In 2020

us map
> total import in US dollars
> total export in US dollars

— In 2019
(or other year)

page 3 — Historical data regarding with Balance of Payments

Balance

2016 2017 2018 2019 2020

Import

2016 2017 2018 2019 2020

export

2016 2017 2018 2019 2020

Page 4 — statistic by metropolitan data

us map

import (by metropolitan area)
export (by metropolitan area)

← In 2020

us map

import (by metropolitan area)
export (by metropolitan area)

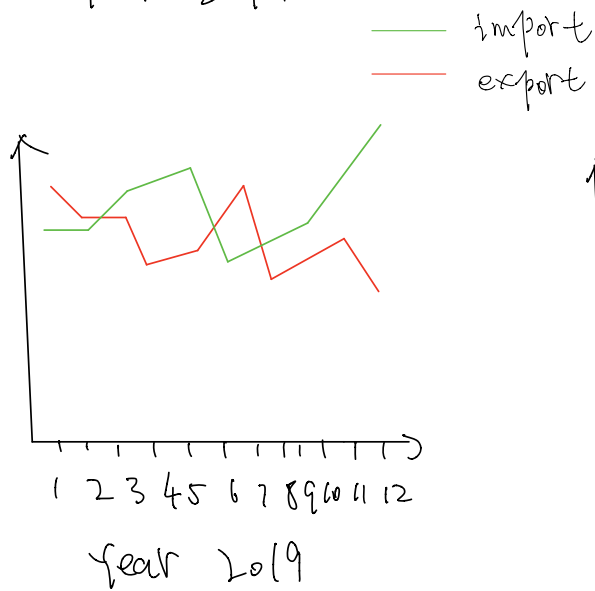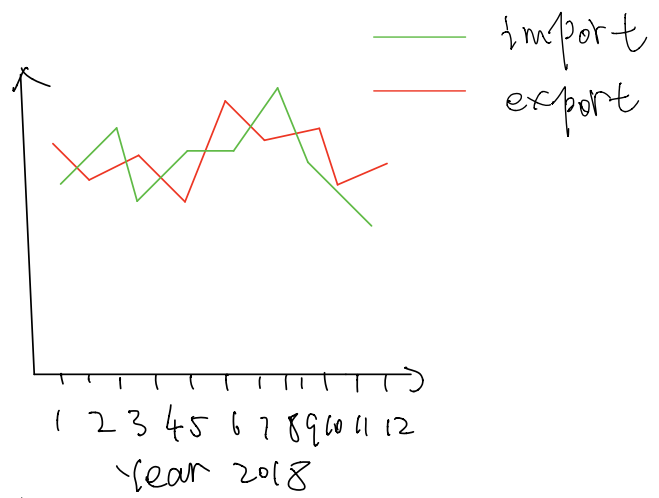← In 2019
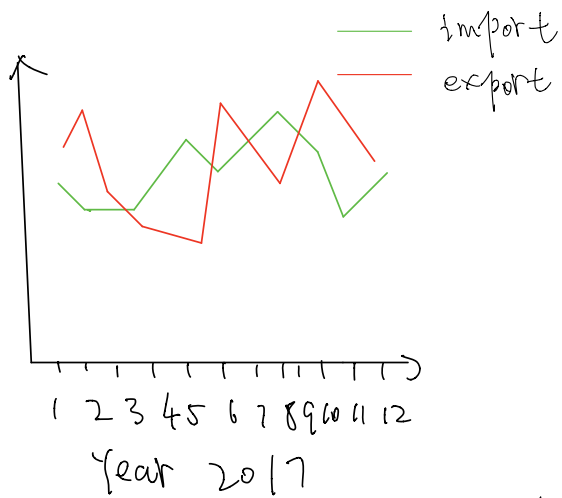(or other year)

page 5 — state level information

us map

exhibit the
data by
states

import (based on state)

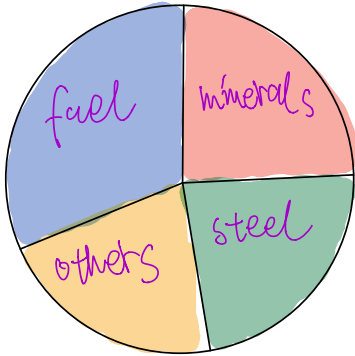export (based on state)

us map

exhibit the
data by
states

import (based on state)

export (based on state)
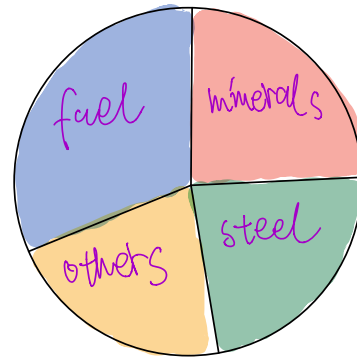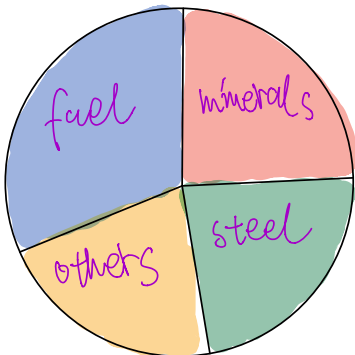
page 6 — U.S trade in goods with world (monthly)

Year 2017

Year 2018

Year 2019

Year 2020
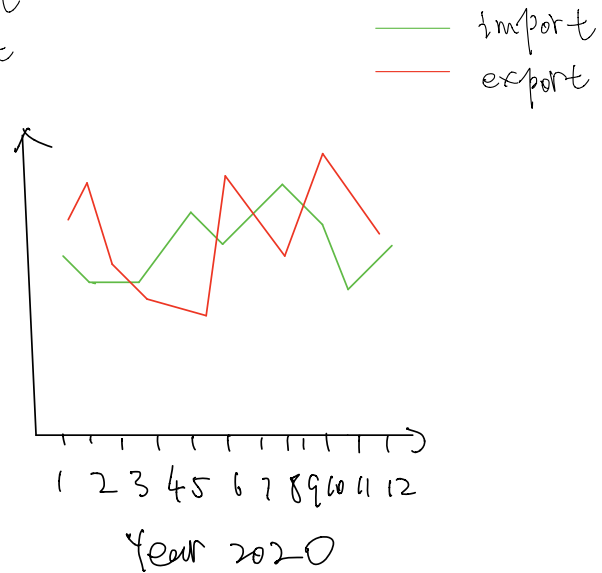
Page 7 - detail of Categories

in 2018

in 2019

in 2020

in 2021