

Project 2 Proposal

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Github Repo:

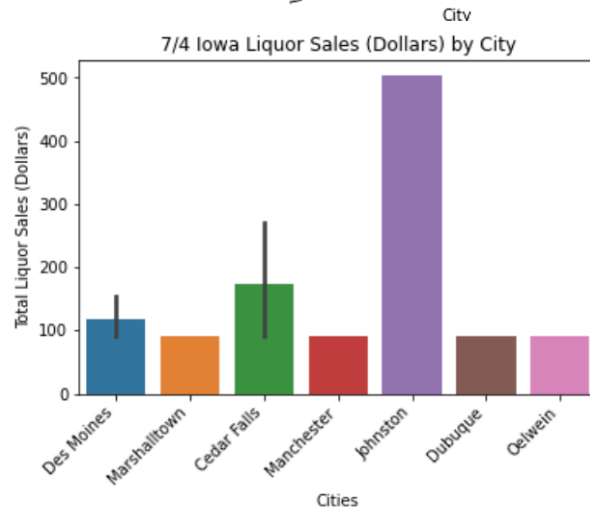
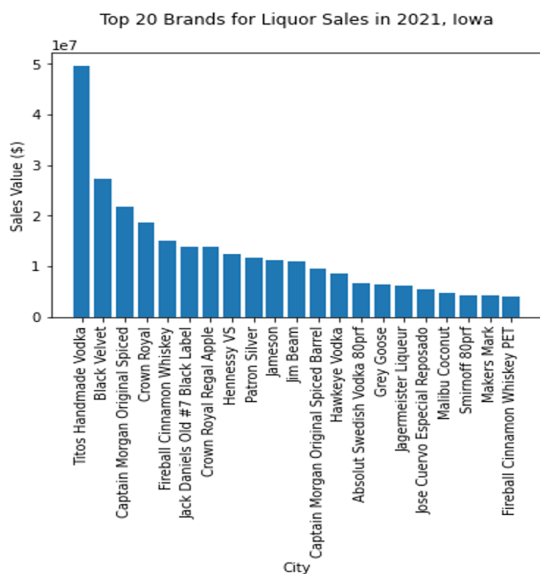
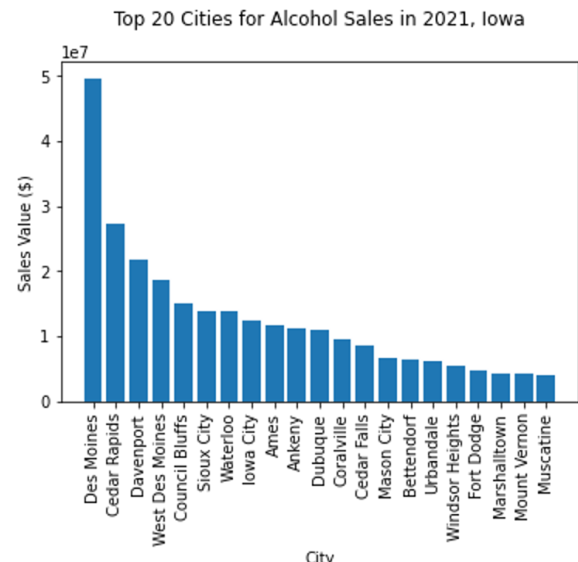
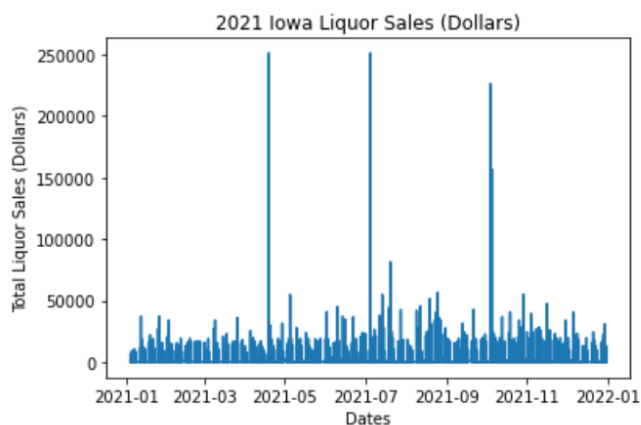
https://github.com/UC-Berkeley-I-School/Project2_Moinzadeh_Ratsimbazafy_Varner

Data to analyze: We intend to analyze “Iowa Liquor Sales” data from the Iowa Department of Commerce. These data contain daily wholesale liquor sales to grocery stores, liquor stores, convenience stores, etc. from the state of Iowa. We have chosen to analyze transactions in 2021, a subset of the entire database, for convenience (2.6M in 2021 alone).

- Link to 2021 data:
<https://drive.google.com/file/d/1FmhlMA6rGmKcSLUefp-7G2l2Q14OW5hj/view?usp=sharing>
- Link to complete database (convenient to browse):
<https://data.iowa.gov/Sales-Distribution/Iowa-Liquor-Sales/m3tr-qhgy>
Filtered By Query: “in between 12/31/2020 - 12/31/2021”

Initial Plots, Figures and Tables:

Relationships Under Preliminary Examination:



Data Dictionary:

Category Name	Data Type	Description
Date	Datetime	Date of Order
Store Number	Categorical	Unique Store ID
Store Location	Geospatial	Store Location (Geographic Coordinates)
Sale (Dollars)	Numeric	Total cost of liquor order
Vendor Name	Categorical	Vendor name of the company for the brand of liquor ordered
Category Name	Categorical	Category of the liquor ordered

Complete data descriptions:

<https://data.iowa.gov/Sales-Distribution/Iowa-Liquor-Sales/m3tr-qhgy>

Variables of Interest and Anticipated Insights:

- Product attributes (“Category”, “Category Name”, “Item Description”, “Pack”, and “Bottles Sold”), which will be used to analyze product trends over time and by geography.
- Store information (“Store Number”, “Store Name”, “City”, “Zip Code”, “County”), which will be used to analyze geographic differences in liquor sales. We will look at which city(s) and store(s) have the highest sales in both dollars as well as by volume.
- Bottle costs (“State Bottle Cost”, “State Bottle Retail”, “Sale (Dollars)”), which will be used to analyze average costs to retailers and profits to the state of Iowa. What liquor is the most profitable per liter (to the state of Iowa)?

Final Report Outline:

- Introduction, motivation and audience: Assume the role of consultants who are advising retailers about how to best sell their product (liquor only). What are the best strategies to improve liquor sales and maximize profits?
- Data: “Iowa Liquor Sales” dataset published by the Iowa Department of Commerce. Daily wholesale liquor sales to grocery stores, liquor stores, convenience stores, etc. from the state of Iowa, and likewise track product specifications (2.6M observations and 24 attributes in 2021).
- Insights: What geographic and temporal trends did we find? Which products are the most profitable (assuming margins to retailers are the same as margins to end customers)? Which retailers had the most sales in 2021?
- Product recommendations: How can retailers use these insights to improve their profitability and improve their sales?