Iowa Liquor Sales

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Questions

1. What times of the year have liquor sales been the highest?
2. Are there hotspots in the state where liquor sales have been higher than the average?
3. Are there preferred liquor types in the state of Iowa?
4. Is there a surprising/unexpected time of year when liquor sales have gone up?
5. Are there purchase trends during holidays and college football season?
6. Are there any alcohol types that are frequently bought together?

Data Preparation Work

- Data Reduction
  - Original dataset has over 19 million records from 2012 to 2020.

  - Removed the attributes that were unnecessary to answering questions
  - Deleted rows

- Data Transformation

  - Recategorized the Category Name attribute

Tools Used

- Project Management
  - **Zoom** and **Discord** for project planning and communication
  - **Github** for project repository
  - **Google Drive** to organize project artifacts

- Data Processing
  - **Excel** and **Google Sheets** for cleaning and processing data
 - **Python** within JupyterLab for data analysis and graphing

Applied Techniques

- Collected means and sums
- Visualization
- Pattern Tracking
- Frequent items analysis

Knowledge Gained

- *Question 1:* Highest Total Sales Month for Each Year:
  - 2012: October $4,022,641.40
  - 2013: October $3,794,459.91
  - 2014: December $3,689,630.75
  - 2015: June $3,244,972.19

- *Question 2:* Highest Total Sales by County:
  - Polk: $1,644,572.52
  - Linn: $677,367.99
  - Scott: $613,344.93
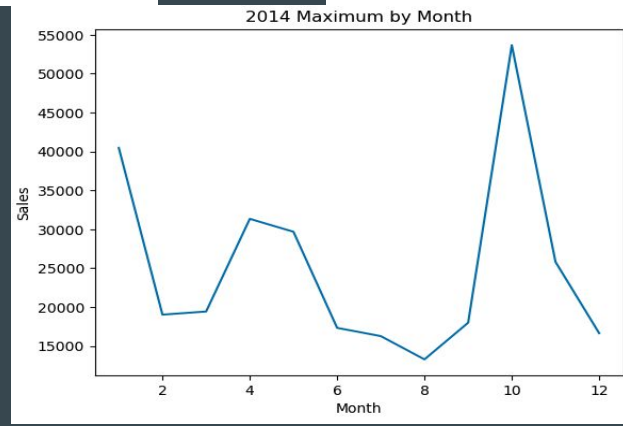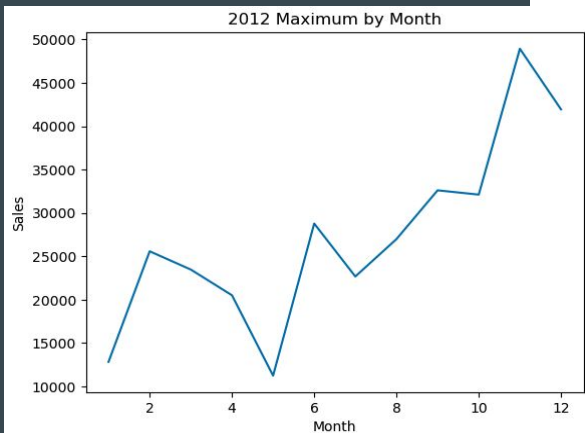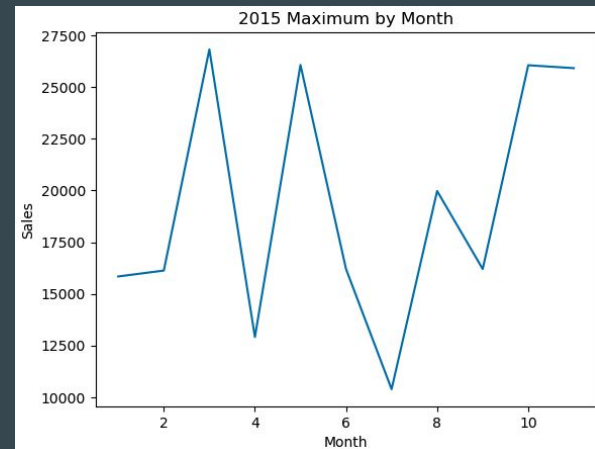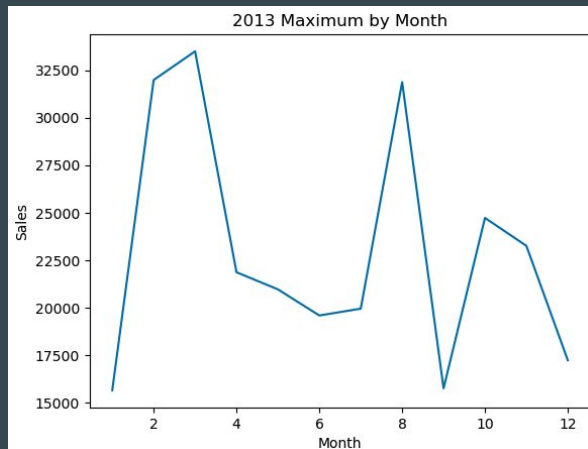 - Black Hawk: $518,243.04
  - Johnson: $453,390.35
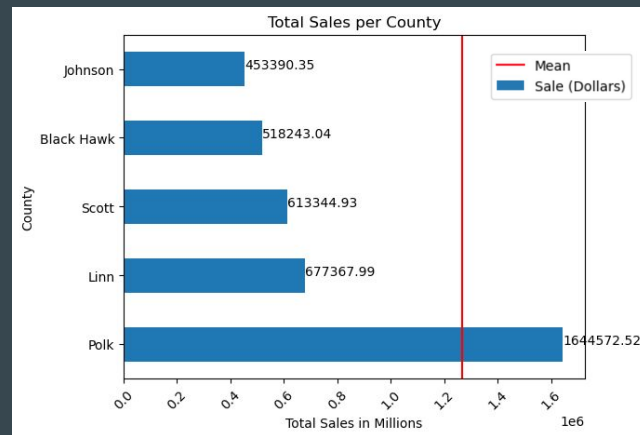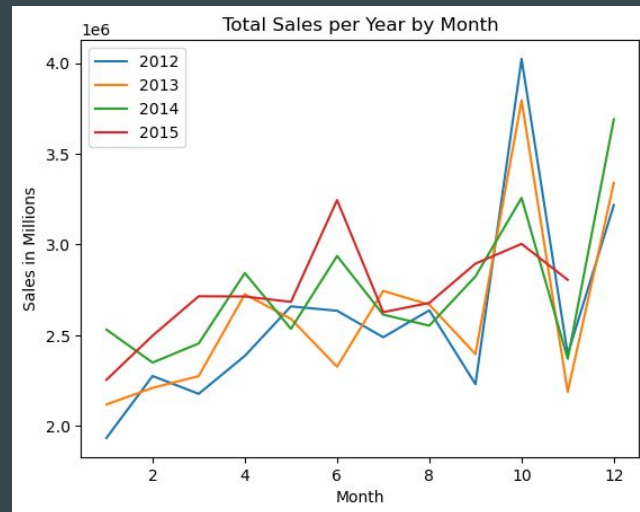
Knowledge Gained Continued

- ● *Question 3:* Preferred Liquor Types in Iowa Between 2012-2015
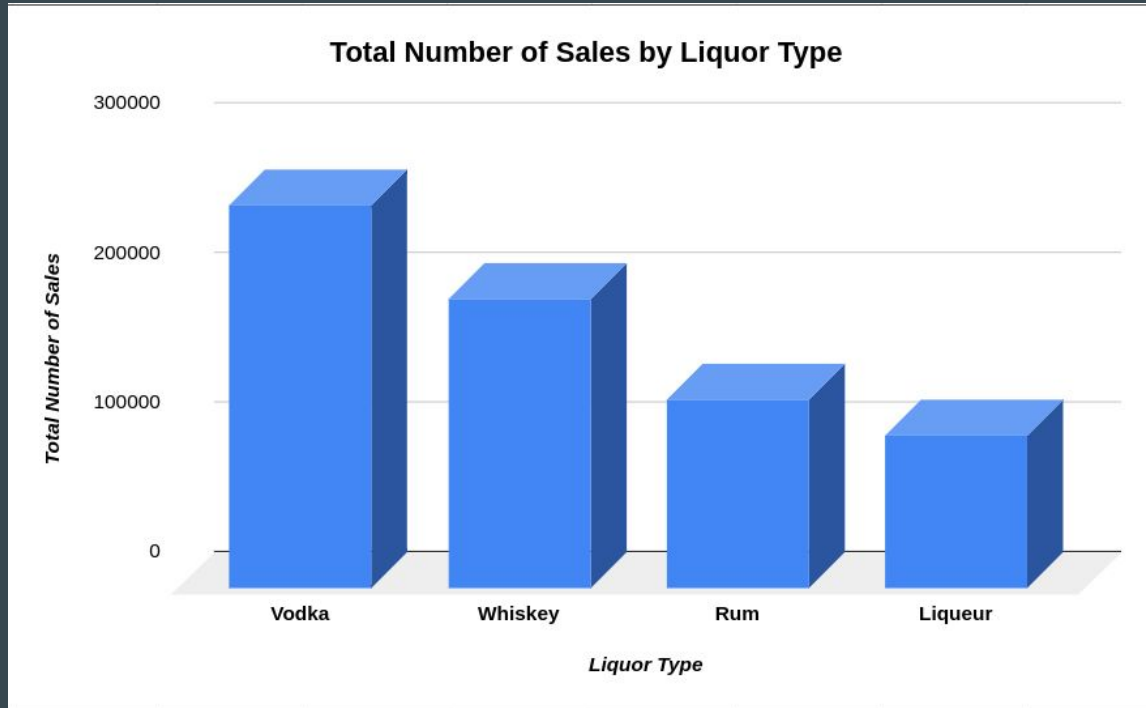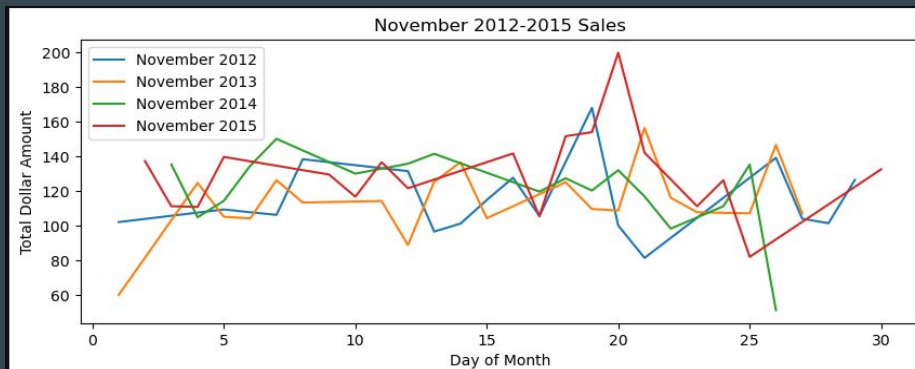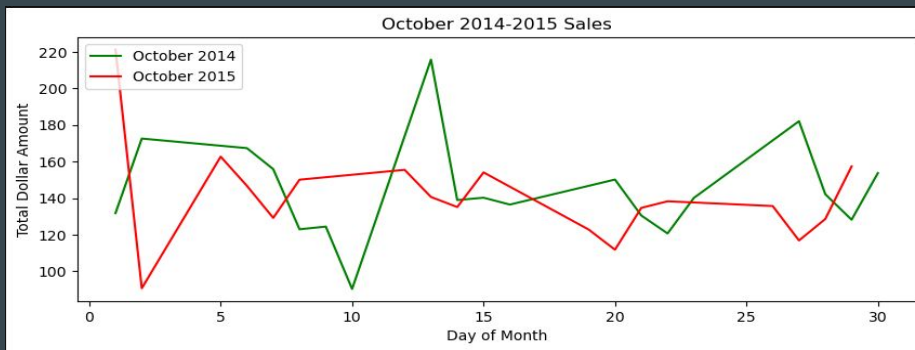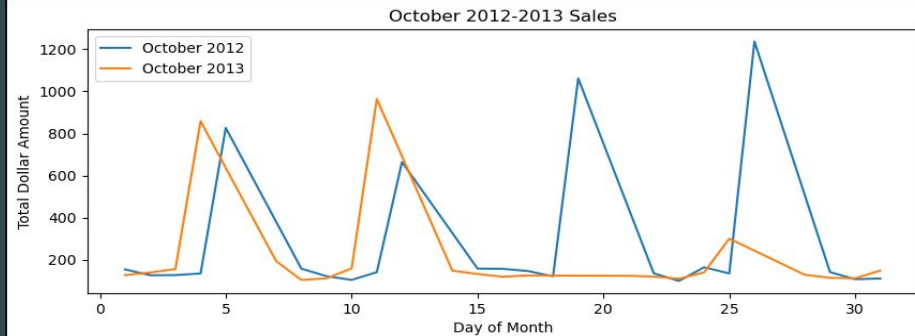
Knowledge Gained Continued

- *Question 4:* Unexpected Time of Year With Higher Sales

Knowledge Gained Continued

- *Question 5:* Notable Purchase Trends During Holidays
  - Halloween
  - Thanksgiving

Knowledge Gained Continued

- *Question 6:* Liquors Frequently Bought Together

Pairings	Count	Support	Conf	Lift
Whiskey→Vodka	44	0.521	0.743	1.017
Vodka→Whiskey	44	0.521	0.712	1.017
Rum→Vodka	25	0.465	0.807	1.047
Vodka→Rum	25	0.465	0.602	1.047
Rum→Whiskey	21	0.446	0.764	1.049

How can that knowledge be applied?

- Knowledge gained can be used to influence marketing strategies, such as:
    - **Bundling** popular liquor with unpopular liquor

    - **Discounting** bundled liquor with mixers and adding a recipe

    - **Review** and **implement** marketing strategies of more successful times and geographical areas