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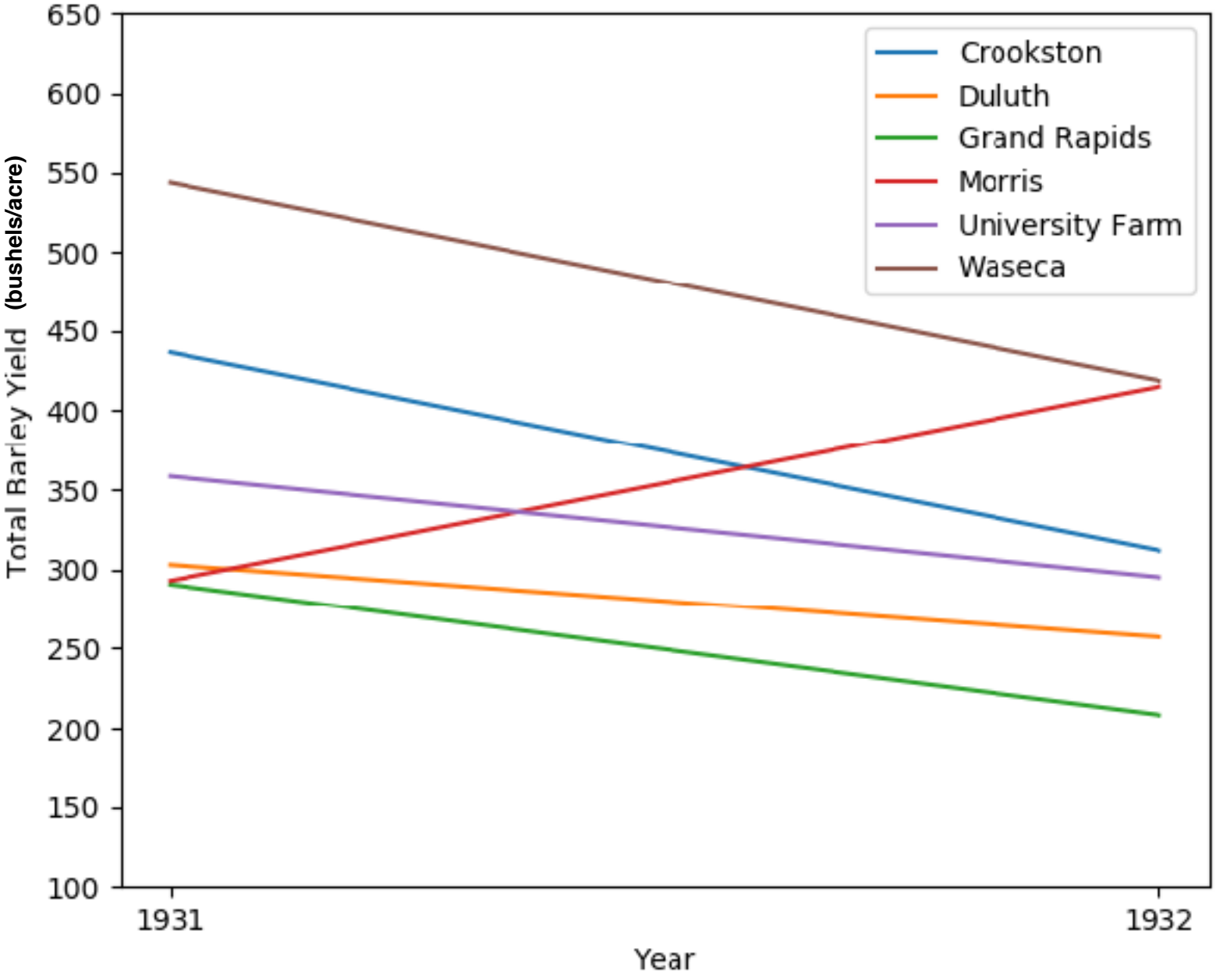
CS 448B

The Comparative Barley Output of Six Minnesota Cities from 1931 to 1932



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In my visualization I attempt to highlight the story of barley production in different cities in Minnesota from 1931 to 1932. While my visualization does not tell this entire story, it does prompt more inquiry by showing that while the five cities of Crookston, Duluth, Grand Rapids, University Farms, and Waseca, all experienced declines in their barley production, Morris experienced an increase in their total number of barley produced by approximately 150 bushels/acre. Why? I tried to find weather and precipitation data for all of these cities in 1931 and 1932, but it was only available for two of them, so this was not helpful for explaining why Morris might have had an increase in production compared to all the other cities. Other explanations could be soil conditions in Morris, government subsidies, or population growth, providing a larger workforce. The visualization tells a small part of this story.

The visualization obscures the details of the different types of barley that were a part of overall barley production. This visualization might lead one to believe these cities produced only one type of barley, which is not the case. I was able to create a visualization with individual lines for each barley variety in each county, but the graph became a mess of lines. You could still see the Morris barley lines increasing with the rest decreasing, but this was not clearly visible, so I opted for this uncluttered visualization the conveys the same idea, that Morris was the only city in this data to experience an increase in barley production.

I used discrete colors to indicate the nominal information of which line pertains to which city. I used location (or x and y coordinates) to indicate the year and total amount of bushels/acre of barley produced in a given city. I scaled the plot to have a y-axis between 100 and 650 to emphasize the slope of the lines, and emphasize how Morris cuts across the slope of all the other city lines, contrasting their decline with Morris' incline. I opted to use lines, rather than a bar chart, for example, to emphasize this slope, or change, in barley production from 1931 to 1932. A bar chart would have placed more emphasis on the specific amounts of barley produced rather than changes in the amount of barley produced over time.

To produce this plot, I used matplotlib's pyplot and pandas. I used pandas to read in the csv as a dataframe, and then to find the yields of each site in a given year. I summed these yields for each year for each site, and plotted them, as you see above.