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CS 448B
Barley Yield Data Write-Up

Crop yield is the most relevant and important piece of information. The data was collected in 1931 and 1932 -- right in the middle of the Great Depression -- so crop yield is even more critical during the time period. As I compared the difference in crop yield between the two years, I found that every site had an average decrease in crop yield across each type of barley, except for the site in Morris. This is significant because ideally if the farmers or government potentially interpreting the data could see that Morris thrived during the difficult time, then viewers might be able to examine the different farming practices in Morris and teach other farmers to be as successful.

To display the trend in crop yield for each site, I averaged each site's crop yield across all barley varieties in 1931 and then in 1932 and found the difference. I placed the average above the dot that represents the site's location in Minnesota along with the site name below. The dot is also the same color as the site's bar chart. To emphasize the success in Morris's crop yield, I bolded its positive yield and also added a plus sign.

Since yield and the change in yield between years was the most important information, yield is displayed on the y-axis of each bar chart. The yield is quantitative, and position works well for displaying quantitative data. On the x-axis, I placed the strain of barley. This is nominal data which position still encodes well. I considered using shapes or more colors to encode the strains of barley, but decided that it was unnecessary and that it might detract from seeing the overall trend in yield for each site. For each strain, there was a yield for 1931 and a yield for 1932. Since we are interested in the difference between the yield in each year, I placed the two yields next to each other. However, I used a dark value and light value of the hue for that site to encode 1931 or 1932, which are ordinal pieces of data. I used position on the mini map of Minnesota to encode extra data I added -- where in Minnesota the site's city is. The extra information about where these sites are relative to one another, especially with the average difference in yield across barley varieties for the site, helps viewers understand possible relationships between sites. For instance, it seems like sites on the west side of the state underwent more drastic changes from 1931 to 1932. I used color to encode which dot on the map corresponds to which bar graph -- and therefore the site. Color works well because site is nominal.

Because the visualization groups the yield according to sites and not strain of barley, it may be overlooking important trends underlining which strain is the most successful. Also, there is a significant range in yield, from about 15 bushels/acre to about 65 bushels/acre., The bar charts lose accuracy in the yield data because of this range and the individual yields are not labeled. Finally, the points representing the site location on the map of Minnesota are not exact, which could also cause confusion.

I used Google Sheets to create the bar charts and Google Drawing to layout the bar charts and overlay the map of Minnesota.

Barley Yield in Minnesota in Years 1931 and 1932

