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Final Project idea was approved by **Caitlyn Allen.**

For my final project I decided to do something like Lab 10. It was my favorite Lab and the one that I found most useful to me now and in the future. Cattle auctions have moved from in person to online now with the advancement of technology. My family and neighbors, to friends here in Lincoln, have been a part of online auctions whether it be for livestock, agricultural equipment, and land. The auctions that I interact with online the most are livestock auctions. Not just to buy but to see how much my family's livestock goes for during the bids. In the future I plan on with my Agricultural Engineering degree designing farming equipment and creating fertilizer for organic farming, but most importantly I want to be able to sell my own cattle through my own website. When my family or neighbors sells their cattle through other livestock markets you lose quite a bit of money because technically, they are selling your cattle for you. So, finding a way to sell my families livestock online and not have to lose any money was the goal behind me into designing code like lab 10.

Similar like lab10 I was going for a popup window. I wanted my code to display pushbuttons with certain dollar amounts bidders could add onto their current bid display text box and once they have added the amount that they thought was sufficient, they could purchase a Hereford or Angus. As bidders buy, I made on the left side of my popup window text boxes that display the number of livestock that we have available for them to still purchase. While my coding is more of a controlled auction/market I still wanted to have text messages after they had successfully bought something like “Winner of Hereford/Angus” or if they did not bid enough money needed to purchase a Hereford or Angus, they will be informed by a text message that reads “Bid Lost”. Even when they lose a bid, they can add more money into their current bid and then can try and purchase again. If their current bid has an amount larger than what is asked for the leftover amount of money stays into their current bid in case they still want to purchase more. In all auctions that I have been to in person and online, they require you to print a receipt or ask for one because when dealing with livestock many times you are working with large amounts of money and if any livestock gets mixed up or you are not written down as the winner of the bid, you have your receipt to back up your buy and confirm your buy.

I was really hoping to add a countdown timer onto the popup window because many auctions are usually timed for each round and then my code would have seemed more like an actual auction. I wanted to use the timer function but sadly could not find much information on it. The idea was that once the code has ran, they have a one-minute count down timer displaying and during that one minute they can buy as much as they want and after that one minute the popup window would close.

Because my code was like lab10 it was easy to make but confusing when changing certain variables and when making my printing the receipt push button. What was easy was the adding of images. Hopefully one day my auction website can include instead live videos of the livestock we are selling because videos are so much better than just an image, so you really get the 360 look on what you are buying.

The idea for the project is something that I will use in the future because I do want to sell livestock for my family and think it could become a bigger family-owned business where we can help neighbors and other people around Nebraska sell their livestock.

What I enjoyed learning about the most in the course were GUIs. It is much more fun to write code and then get an actual graphical user interface from it. I will be

using GUIs for my idea to start an online livestock market and to help organic farmers and regular farmers to plant efficiently. I also had an idea to create a soil efficient to plant approval interface where customers would put in information about their soil and it would work like a pH soil tester, and if their soil were in good conditions, they would be given the go ahead to start planting. I will keep this idea in mind as well and know that interaction with Matlab will continue after this course. Thanks!