# CSCI 431: Project Checkpoint 1

# Conclusion

In checkpoint 1 for the Project, we were able to isolate and count the number of cards in the image. This was done using morphology. We created structuring elements with specific shape and size and used that to isolate the cards on the black cloth background. Through this assignment we were able to learn and build up on our knowledge of morphology and using it to recognize objects in an image.

On the black background in the images, there were some crud and to remove those, we used a Gaussian filter on the image to remove those noise. We had to also remove black specs on the white card that was showing up after the use of imbinarize and this was done using closing and another structuring element.

One of the issues we came across was the presence of parts of table behind the black cloth. To remove this, we iterated over all the regions and determined the region that has the largest size. Using the region number, we simply ignored that region and consider only the regions that have the cards in them. Although, this method is functional where the different table regions are connected, this does not work where the regions are divided.

# Results

Graphical user interface, application

Description automatically generated

The figure above shows the subplot with the top part being the image divided into regions and the bottom image being a single card at a time with a cyan outline around the card

Text

Description automatically generated with medium confidence

Console output displaying the number of cards after each image.