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Summary Report for Project 2

For this project, the goal is to create a mascot using different imaging processing techniques. The minimum requirements stated that it must at least include pseudocoloring and the use of one filter and one image effect. Since a mascot is used to represent the community as a whole and usually in the form of an animal, a pair of tiger seems suitable for this purpose because they can represent unity, courage, and strength. The main process for creating the final image includes the use of a mirroring effect to make the tigers face each other, an oil painting effect to make the tigers look less realistic, and pseudocoloring to limit the color of the mascot to only shades of black and gold.

To start off, the image selected is in an RGB format, so it must be converted to grayscale first before imaging effects can be applied. Looking at the original image, it is clear that it is not in the proper position, so a 90-degree counterclockwise rotation was used to adjust the position. As for the method, bicubic interpolation was used for the rotation process to take into account all the pixels and ensure that the resulting image is smooth with no noticeable pixelation. Since the tiger needs to be close to each other during the mirroring process, an additional cropping process was added to remove the extra space on the right side of the rotated image. Once completed, the image was flipped and saved in a new variable. The cropped and the flipped images were then joined together to create a mirror image.

From chapter 16, most of the effects either pixelate or distort the image greatly. The only one that seems to work best for this case is the oil painting filter. By applying this, the image looks less sharp and less realistic which is more fit for the concept of mascot. The code for this filter is from the book, however, the block size used in the function was changed to produce the desired result. After that, the last step is to perform pseudocoloring and the hue angle used is 53. This value was divided by 360 and plugged into the 32x3 HSV map. By using the imtool function, the intensity at the different pixels of the image can be seen and map to appropriate levels in the map. Next, the map was converted to RGB and the image was converted from grayscale to indexed. The final result is a combination of the indexed image with an RGB map and this was exported using the imwrite function into a png image.