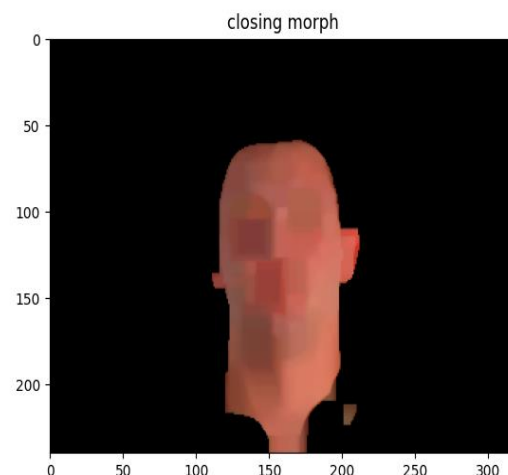
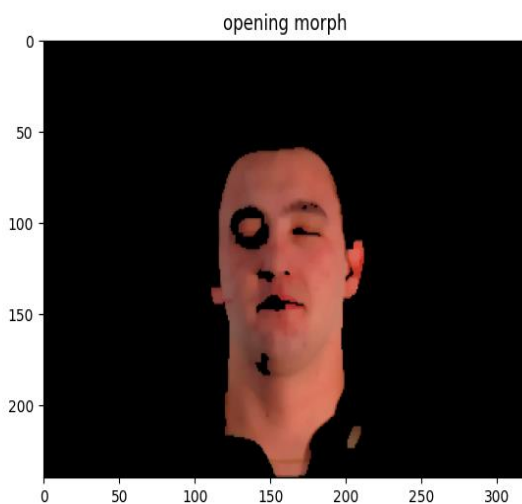
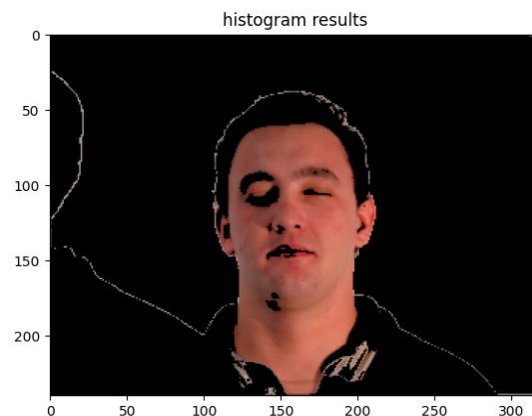
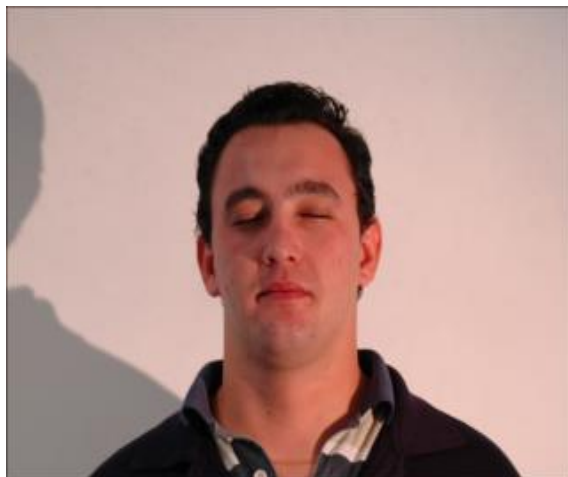


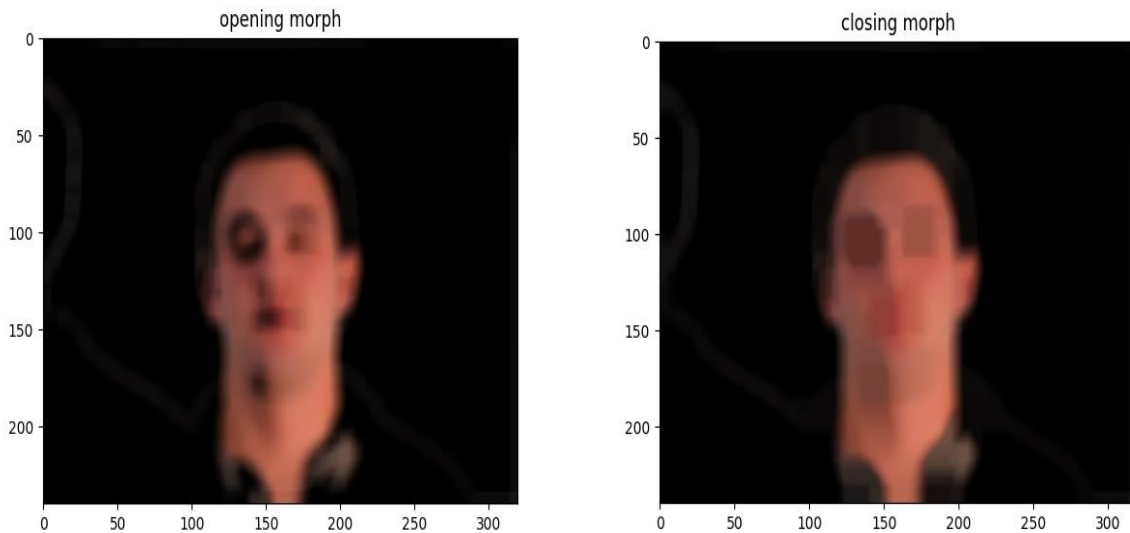
Assignment 4: Morphology on Skin Detection

For this project we will first generally accept the methods utilized in project 3 to isolate the skin sample from the 'dark-face' image. That is we use and RGB detection then histogram to filter to get our working sample for the main body of work. The code could've been imported but to save on file requirements I simply copied the working code into the new .py file. In addition, for my own testing I ported over one of the filter methods from our filtering program. The main morphology is executed by a helper function that takes in the sample photo and cycles through 'OpenCV's open and close morph tools. As for observations I remained impressed by the number of different techniques available to us to manipulate images. With no additional source material or comparison, we can still do quite a lot with just the sample provided. The first figures are the main demonstration, I noted in the demo in video lectures the utilization of two unique structures for the open and close operations. Namely The sizes. For our Open morph a small 5x5 array is utilized. This is intentional as we don't want to expand the boundaries of the source image to extremely. Then when closing we utilize a much larger 15X15 array. This is to truly identify the skin region ignoring any little imperfections. This drastic affect can be seen in the figures!



Note the small changes after the original open morph vs how drastically the close morph alters.

Out of interest for further applying and combining techniques I utilized a simple filter on the original histogram results. Then put that sample through the same morphology (open->close) to see what results we would yield.



The results were interesting, when filtered, the image space of the background and noise now were not removed by the opening morph, the size of the noise has expanded canceling the effect of the morph. Additionally, when finally pushed through the close we see many irrelevant features remain on the face and background. If I were to apply a noise canceling filter and attempt again, I may yield different results. Overall though an enjoyable tool one I hope to experiment with more!