***RLE:***

The method is to take the size of length and height of picture divided by 2, h/(2n) and l/(2n) where n is the how many times you want to average the picture. First cut the averaged picture out from n =1 then do the same average things, create a function that can be repeated. The cutting picture and averaging in the function. Repeat how many times you want in the loop which call the function. In the function, the height and length will be determined by the cut image.

***Steganography:***

For this project, I use 0, 1, 2 values of increasing or decreasing from the original picture to pass a message. 0, 1, 2 has 27 possible combination which can cover 26 letters and one for other. To get the message, I use the modules to get reminder of 0, 1 ,2. So, the message will be printed out as the all pixel of the picture. The beginning of the message which is readable will be the message.

***Final Project:***

For the final project, the operation and display a 2-D picture of 2x2 Rubik’s Cube. The method I use is to get 8 pieces of the cube and break them out as 3 direction of the cube. Put them into a list which include 8 lists inside of it. The 8 lists have 3 value which represent color. The position will represent different little cube of 8 chunk of cubes and different faces of the chunk of cube.