README

1. Ethan Mortan-Gaught (he helped me – I didn’t help him)
2. a. After fixing some code, I noticed that the pixel data was not printing to the output file. It drove me nuts for the longest time, and I went line by line through the code I had just worked on. I noticed that I had accidentally deleted the code for opening the output stream. I added it back in, and the program began working properly again.

b. I had trouble writing the function flip\_horizontal because it requires the three values representing a pixel to be horizontally flipped together, not as individual values. To overcome this, I ended up drawing a picture of what was happening to the values, and recognized that I could work with the buffer array in chunks of three values. Ethan and I discussed the flip\_horizontal function as well. I edited my for loop accordingly, and eventually got the function working. This logic of working with a chunk of code then helped me finish the function grey\_scale as well.

c. I originally was using parameters for all of my functions, and for flip\_horizontal, a const integer needed to be passed to the function in order to be used as the size of a new array that I make in the function. There were issues with the compiler recognizing that the constant value I passed through was appropriate for use as an array size. It occurred to me that all of these functions could be made void with no parameters as long as I declared all necessary variables above the main, and I talked with Ethan about this as well. I was then able to bypass the need to use parameters and got the program running properly.

d. I did not recall learning how to randomly choose a number from a range, so I researched the subject in one of my old textbooks and was able to find the proper code.

e. When dealing with grey\_scale, I was originally uncertain about whether the average was rounded up or down. I then worked out the example provided in the assignment instructions and noticed that the average was in fact not an integer, but grey\_scale rounded down. I changed my code accordingly.

1. One thing I did not like about this program was that you had to download GIMP in order to test the program with images. Because of that, you had to have a computer that ran C++, which I did not have, and then download GIMP on top of that. I wanted to use the school computers, but they are unable to read .ppm files, and you are unable, as a student, to download GIMP to the school computers. As a result, I made text files of example code to troubleshoot.

I did like that I was able to learn about manipulating pixels in images, which I had no previous knowledge of. I found the explanation of them a little confusing, but the final product is pretty cool.