David Centeno
5001 Intensive Foundations
Spring 2021
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Report 06

Problem Description

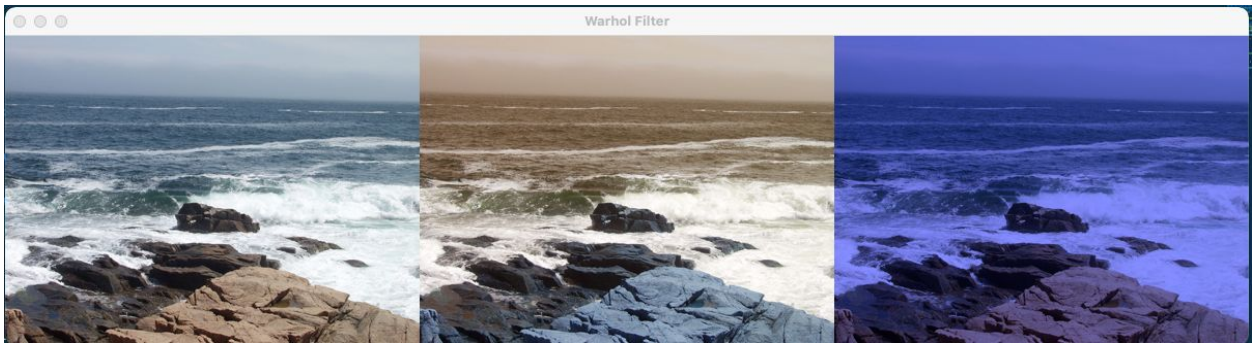
The goal of this project is to create a program that makes a meme generator. Through this process we are further using lists and nested loops to create draw out images and add filters to the image. A strong program will show a meme with a filtered image and code that shows good coding foundations and clean readable code

Follow Up Questions

1. A pixel is an incredibly small square that contains a rgb value or light. A pixel can have different values of RGB to provide a wide array of colors
2. We use nested loops to draw out images as the program that we wrote in the project draws the picture out pixel by pixel. It will look at the first row of pixels and then draw out each column in that row until completed and then move on to the next row.
3. An example of a useful nested list is helping to keep your code clean and have like items associated with your list. For example when describing a scene that has a rainbow instead of listing out all the colors of the rainbow, you can have rainbow as a list and have its colors as its nested list. It will also be easier to call upon those items.
4. I went with the approach of writing out pseudo-code. I found this surprisingly helpful as it acted like a checklist of functions and expressions I needed to add into the code.I definitely see the value of this
5. Andy Warhol was an american artist who was famously known for his pop art style.

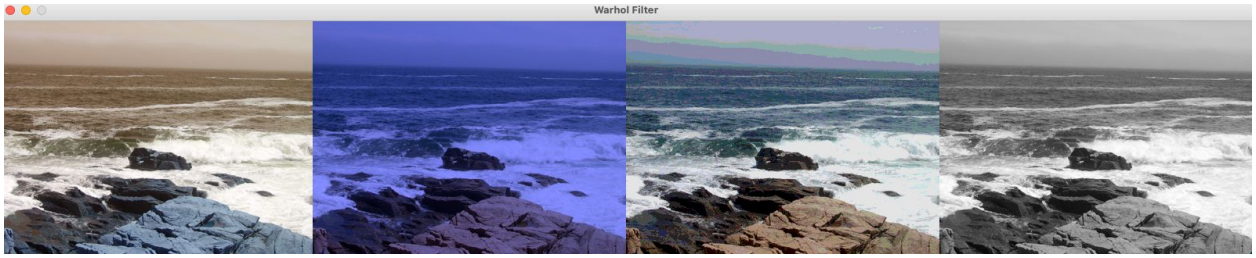
Required Task Elements:

1.



When we started this project I did not understand how programming could edit images. I thought initially this was something very advanced to perform. I thought it was interesting that we can loop through pixels of an image and change their values to create filters

2.



When working with the zelle graphics and images I was pretty surprised on how flexible the library is on working with images. I would definitely like to do more with making more complex filters

3.

meme.py > ...

```python
#David Centeno
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#Spring2021

import sys
import graphicsPlus
import filter1 as filter1


#Create a function that will bring in a picture used for a meme and parameters
def meme (src,listOfSomething):
    #Bring in the image to the function
    #Grab the width of the image
    #Grab the height of the image

    #Draw the graphics plus window

    #Create a loop that will implement an effect by iterating of a list

    #Create a var that will allow sys.args to add text to meme

    #create a var that will change text color

    #return the value of meme


#Create a main function to execute the meme code and takes argv as a parameter
def main (argv)
    #Use defensive programming to make sure desired result is entered in for sys.argv
    #Use if statement to make sure a string is accepted and if not provide an error

    #Store system arguments to memory

    #Initialize the meme generator

    #Close out of windows

#Create file main if statement to make sure main function is run
```
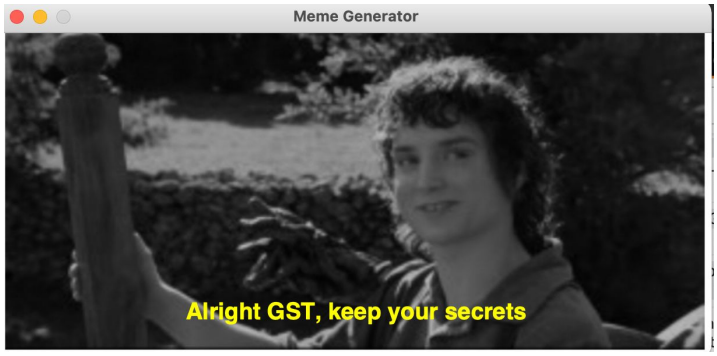
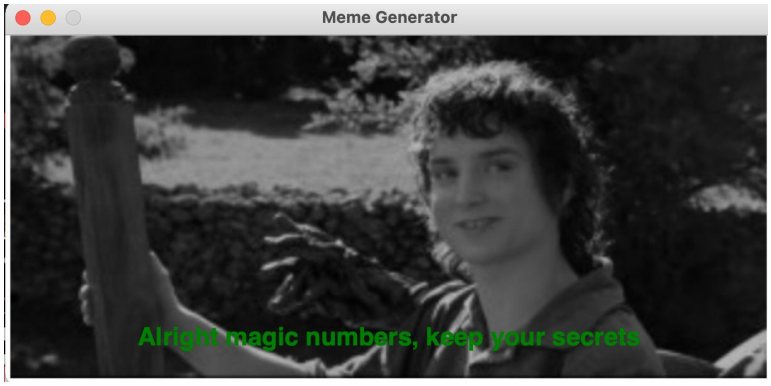

I found using a design document incredibly helpful and definitely sped up writing out my code. It also helped serve as a checklist. I did find at the end of my code I did remove or did not ad certain features but all the requirements of the document were met.

4.



Above are the cartoon and grayscale filters with added in text via sys.argv. Who knew making memes would be a graduate project. This was a great opportunity to have light fun at programming's expense.

5.



Above are the same two memes however they have different text and colors coming from the sys.argv list. As we are doing more and more with sys.argv I'm trying to think of a better way to help manage the number of inputs that come through the command line. Possibly start making user prompts and have the answers be saved in vars for the program to then use.

4.**Extensions**

None this time around. Unfortunately I ran into a few roadblocks and life/work things came up this week that took a bit of my time.

5.**Reflection**

I got a lot of value out of this project. One of them was actually creating a pseudo-code design document. I found that this helped me keep on track and more organized on how I wanted to write my code. This is handy tool to use going forward. The other I just found it generally interesting on how to manipulate images with code and even take user inputs to change some of the effects.

6.**Ackknowledgments**

- Zelle Graphics Documentation
- Class lecture on working with images