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Platform: MacOS/ vscode/homebrew

Number of Late Days Used: 0

Fully Implemented:

- add random noise
- brighten
- luminance
- contrast
- saturate
- crop
- quantize
- random dither
- ordered dither2x2
- floyd steinberg
- blur
- edge detect
- scale nearest
- scale bilinear
- scale gaussian
- rotate nearest
- rotate bilinear
- rotate gaussian
- fun filter
- crop
- nearest sample
- bilinear sample
- gaussian sample
- Beier-Neely Morphing
  - cross dissolve
  - warp
  - length (lineSegments.todo.cpp)
  - distance (lineSegments.todo.cpp)
  - perpendicular (lineSegments.todo.cpp)
  - getSourcePosition (lineSegments.todo.cpp)

Animation:

- I made a .gif using the image yoda, and I made it so that its increasing /pulsing in brightness.
  - the flashing yoda frames were created as followed:
- I ran this:

```
./Assignment1 --in yoda.bmp --brighten 0.5 --out frame0.bmp  
./Assignment1 --in yoda.bmp --brighten 0.6 --out frame1.bmp  
./Assignment1 --in yoda.bmp --brighten 0.7 --out frame2.bmp  
./Assignment1 --in yoda.bmp --brighten 0.8 --out frame3.bmp  
./Assignment1 --in yoda.bmp --brighten 0.9 --out frame4.bmp  
./Assignment1 --in yoda.bmp --brighten 1.0 --out frame5.bmp  
./Assignment1 --in yoda.bmp --brighten 1.1 --out frame6.bmp  
./Assignment1 --in yoda.bmp --brighten 1.2 --out frame7.bmp  
./Assignment1 --in yoda.bmp --brighten 1.3 --out frame8.bmp  
./Assignment1 --in yoda.bmp --brighten 1.4 --out frame9.bmp  
./Assignment1 --in yoda.bmp --brighten 1.5 --out frame10.bmp
```

then, i made it a gif with this command (i downloaded ImageMagick to create a gif in my terminal)

```
magick -delay 10 -loop 0 frame*.bmp yoda_brighten.gif
```

this makes it 10 seconds per frame, and infinite loop.