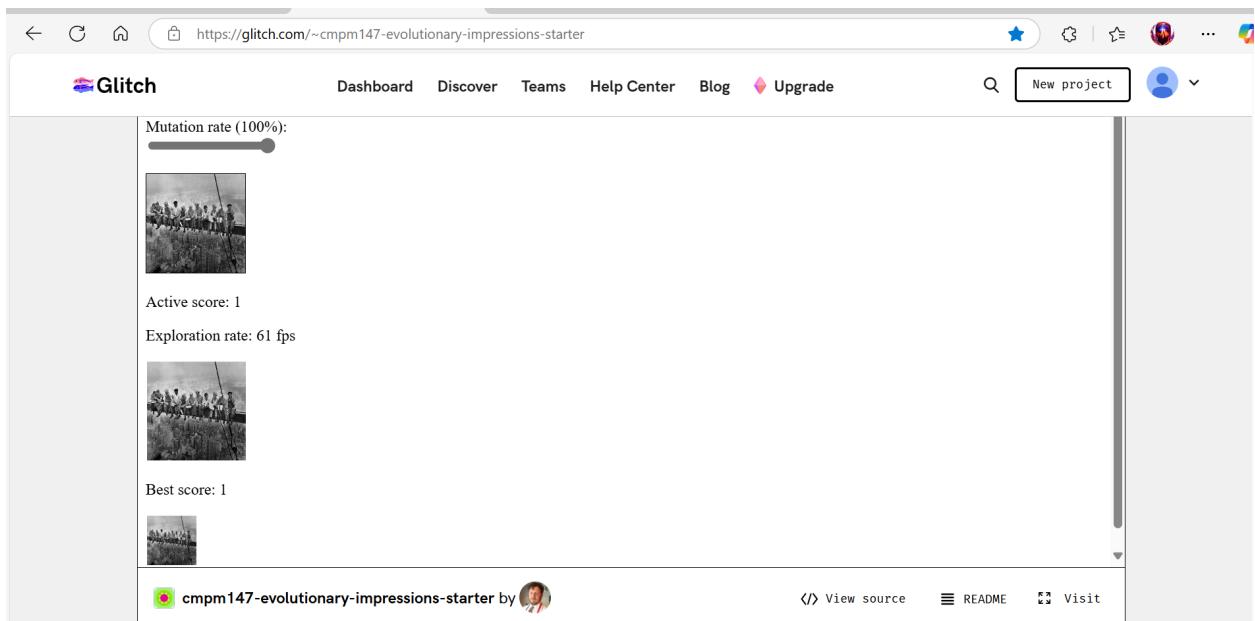


# Experiment 5

Mitchell Tai

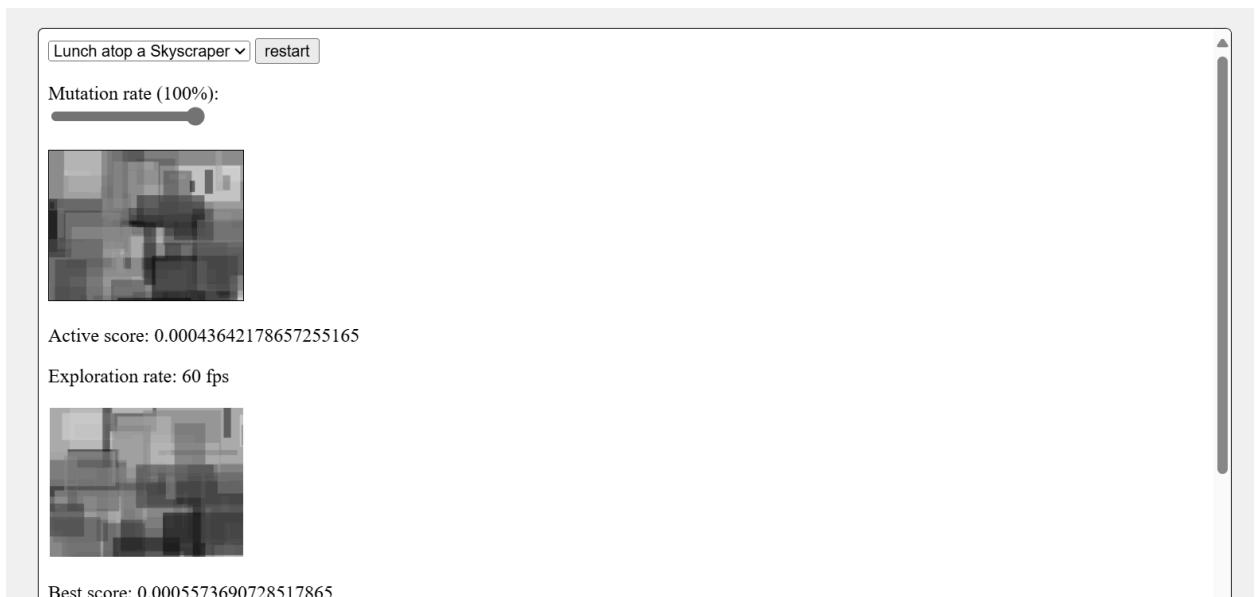
5/8/2025

## Step 1: Imitate



So the first thing I did was transfer this into visual studio code. I also cloned it but I didn't use the clone for anything but loading assets to use later. Glitch is nice in the fact that you can use its assets folder from anywhere, here's hoping they don't randomly delete the assets over time lol. Onwards to integration!

## Step 2: Integrate



Integrating the project was really simple, though to help understand what I was doing I took a peek into wes' example code.

[ Circle ▾ ] [ Lunch atop a Skyscraper ▾ ]

Mutation rate (100%):



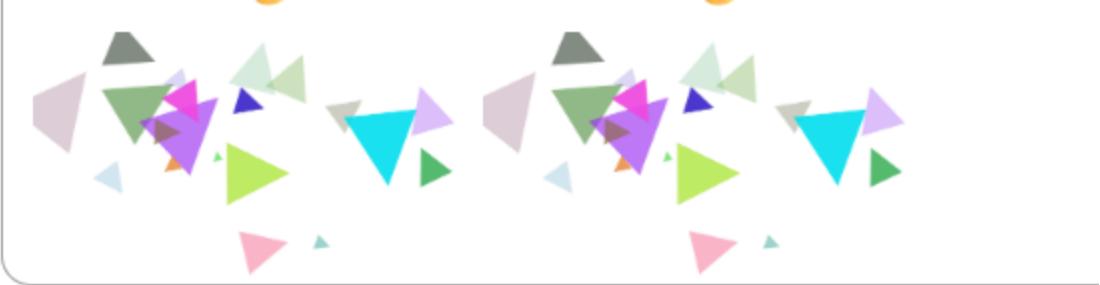
This allowed me to start with this... I had uh.. Lofty goals to start, but it was very quickly beat up into the current version.



Best score: 0.000649309500736214



I had a problem with the canvas container not fitting at first, which spiraled out of control.



## Description

What are you trying to accomplish with this experiment?



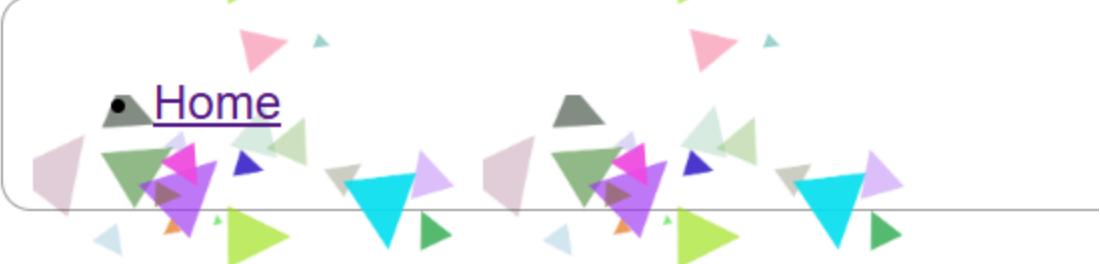
## Technical

Describe in detail what you did technically and how it worked.



## Reflection

Each person that worked on the code should reflect on their role.



## [Home](#)

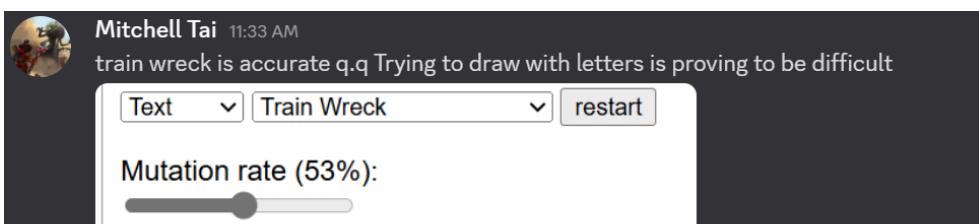
As you can see, the extra images kinda bled over everything, but that problem was fixed by modifying how the canvas container held stuff.



I tried a bunch of different variants of the base code to see what I liked.



I even tried text, but ended up tossing the idea for a bit due to how much it chugged my computer, only to re-implement it later. I also implemented a drop down list so I could quickly swap between different shape types on the fly, this ended up being kept for the entire project so that anyone can switch shapes on the fly.



This was one of the future gripes during the innovative stage, but we're kinda getting ahead of ourselves here! After implementing the project and trying out some fun colors and shapes, it was time to really innovate!

### Step 3: Innovate

Turns out there was probably a reason why Wes only used black and white because randomising hues made it... almost impossible to create a good image.



Active score: 0.00020995029405762009

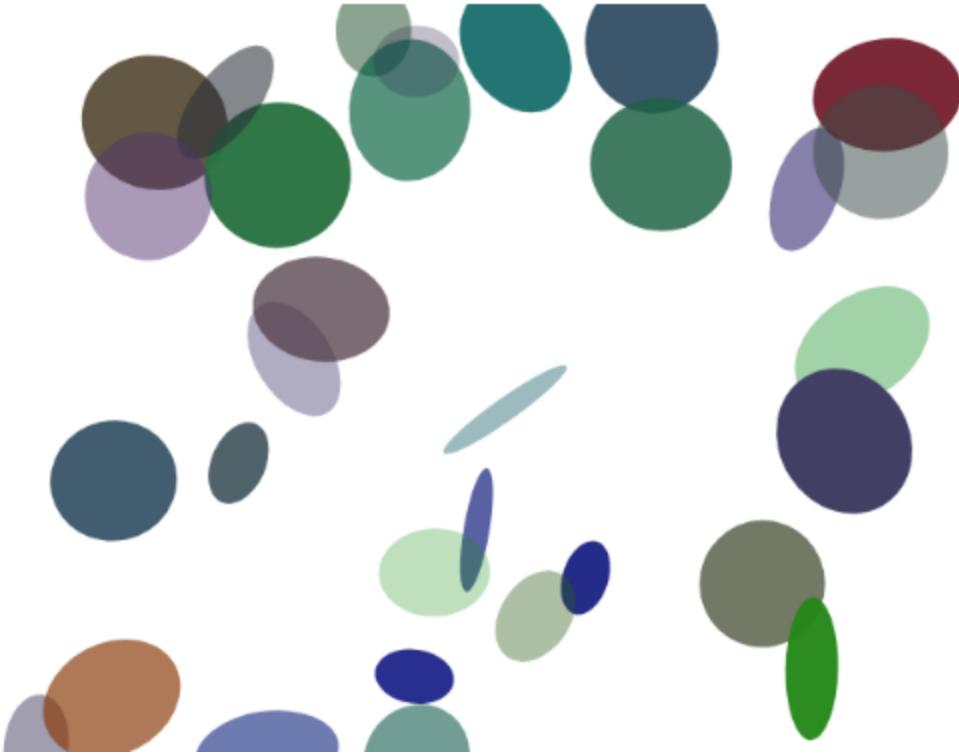
Exploration rate: 60 fps



This was my initial attempt at mutating size, rotation, and hue for squares.



This was the attempt for circles.



This was the closest it got after a few hours, it took forever for it to slowly warp into the right colors, so i ended up scrapping everything entirely and starting from scratch again.

[Circle](#) ▾ [Lunch atop a Skyscraper](#) ▾

Mutation rate (100%):



I scrapped the initial build and went back to Wes' example, I tried modifying just the shapes it drew. This worked, not well, but good enough. It looked too much like Wes' implementation so I tried text again....



Mitchell Tai 11:33 AM

train wreck is accurate q.q Trying to draw with letters is proving to be difficult

Mutation rate (53%):



it's kiiind of getting it, but i think i need more letters

That was also not very good.



Mitchell Tai 11:35 AM

it's working, but my laptop is doo doo and any more than like 200 characters is making it chug

might have to work on this when i go home for the weekend xD

the issue isn't that it's not placing the colors correctly, it's just not nearly enough characters to fill the picture x.x

might try increasing the size of them

or specifically the lower minimum on size

a lot of characters are wasted being micro

okay it kind of works



A 2 A 2 H 2 2 😊

the train is there ish  
hint of train™

**Mitchell Tai** 11:44 AM  
might have to just take the L and finish it when i get on a desktop xD

**Raven Cruz** 11:45 AM  
i see the vision tho 🔥

The main issue was that my laptop was a borrowed one from school, so its processing power wasn't very good at generating text quickly.



I did my best optimising it and was able to generate about 300 letters without burning up my laptop. This was the initial test of mass letters using hello.



This is how it looked with random colored and sized letters.



Active score: 0.0002054056527234322

Exploration rate: 22 fps



This was how it looked with opaque letters so that it can actually build images.



Active score: 0.00018516952316531793

Exploration rate: 4 fps



Adding rotation to the text caused the fps rate to tank, and I managed to squeeze out a few extra frames from optimising it, but not much. I then switched to making the project with other shapes for now to ensure it was working correctly first, and then optimising the text more later.

Active score: 0.00033176481143252454

Exploration rate: 32 fps



The first thing I worked on was triangles. This was also the point in time where I realised that I needed a reference image so I didn't need to have one pulled up all the time to compare.

### Experiment X - Subject/Topic

Mutation rate (100%):



Active score: 0.00007199365553392871

I made it so that it kept the shapes if they ever contributed positively to the score, or tossed the changes when it didn't.

# Experiment X - Subject/Topic

Triangle ▾

B&W Skull

restart

Mutation rate (5%):

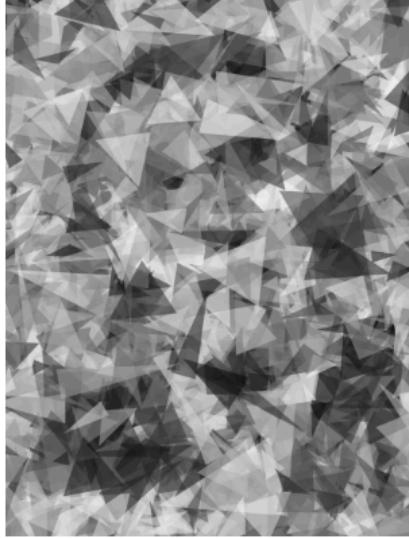


Active score: 0.00012504491940300045

This allowed it to generate stuff like this.

[ Triangle ▼ ] [ Obama ▼ ] [ restart ]

Mutation rate (1%):



Eventually I got it to the point where it could quickly start to form the hints of the image, but upping the rate of mutation for color.

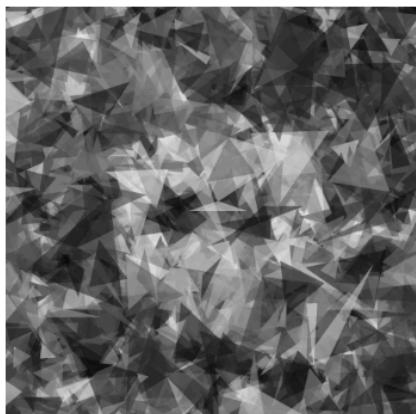
## Experiment X - Subject/Topic

Triangle ▾ B&W Skull ▾ restart

Mutation rate (100%):



Active score: 0.00007199365553392871



Active score: 0.00013338734699297816

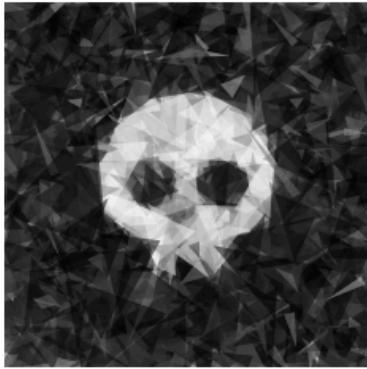
Exploration rate: 19 fps

Adding extra checks tanked the fps a little, but made the images clearer faster. And in a few hours it was able to output near immaculate pictures.

## Experiment 5 - Con"text"ual image generator

Triangle ▾ B&W Skull ▾ restart Go Crazy: 100% Fix Colors: 1% Random!

Mutation rate (1%):

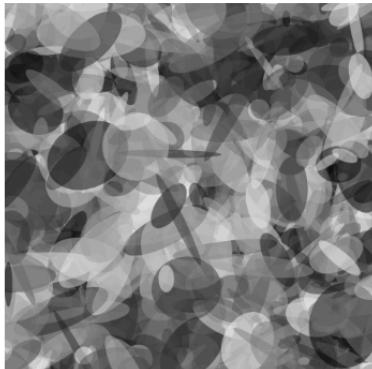


Active score: 0.0005100086301365835

This was the end result of triangles, but before this I also made sure the other shapes were working. Here are the examples below.

Circle ▾ B&W Skull ▾ restart

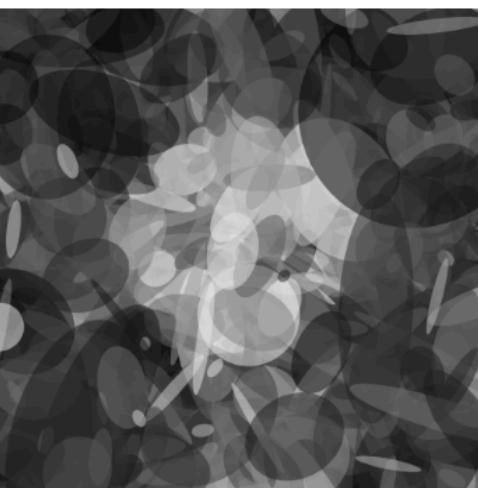
Mutation rate (17%):



Active score: 0.00008869865273754146

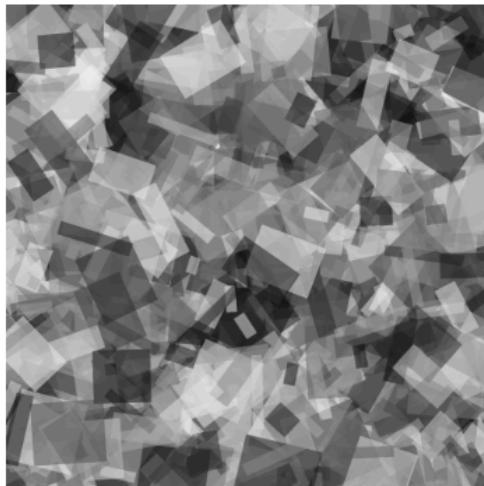
Exploration rate: 14 fps

Mutation rate (2%):



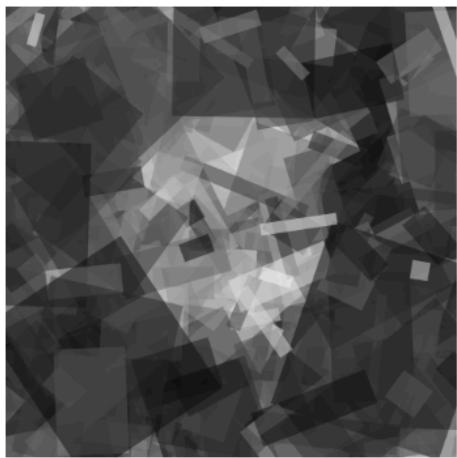
The circle implementation was able to build the skull within a few mins.

Mutation rate (2%):



Square ▾ B&W Skull ▾ restart

Mutation rate (1%):

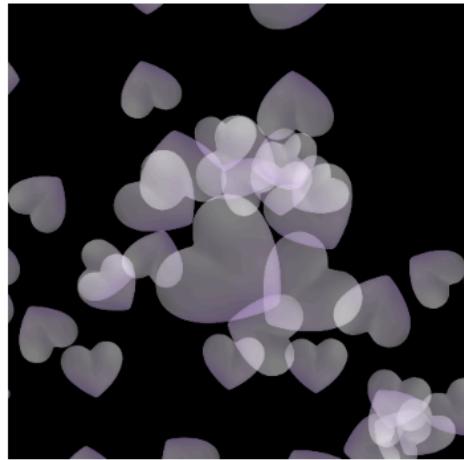


Active score: 0.00020785630211720194

Squares had a harder time probably due to the roundness of the image. After getting all three shapes in working conditions, I went back to the text version to fix some of the issues.

Emoji ▾ B&W Skull ▾ restart

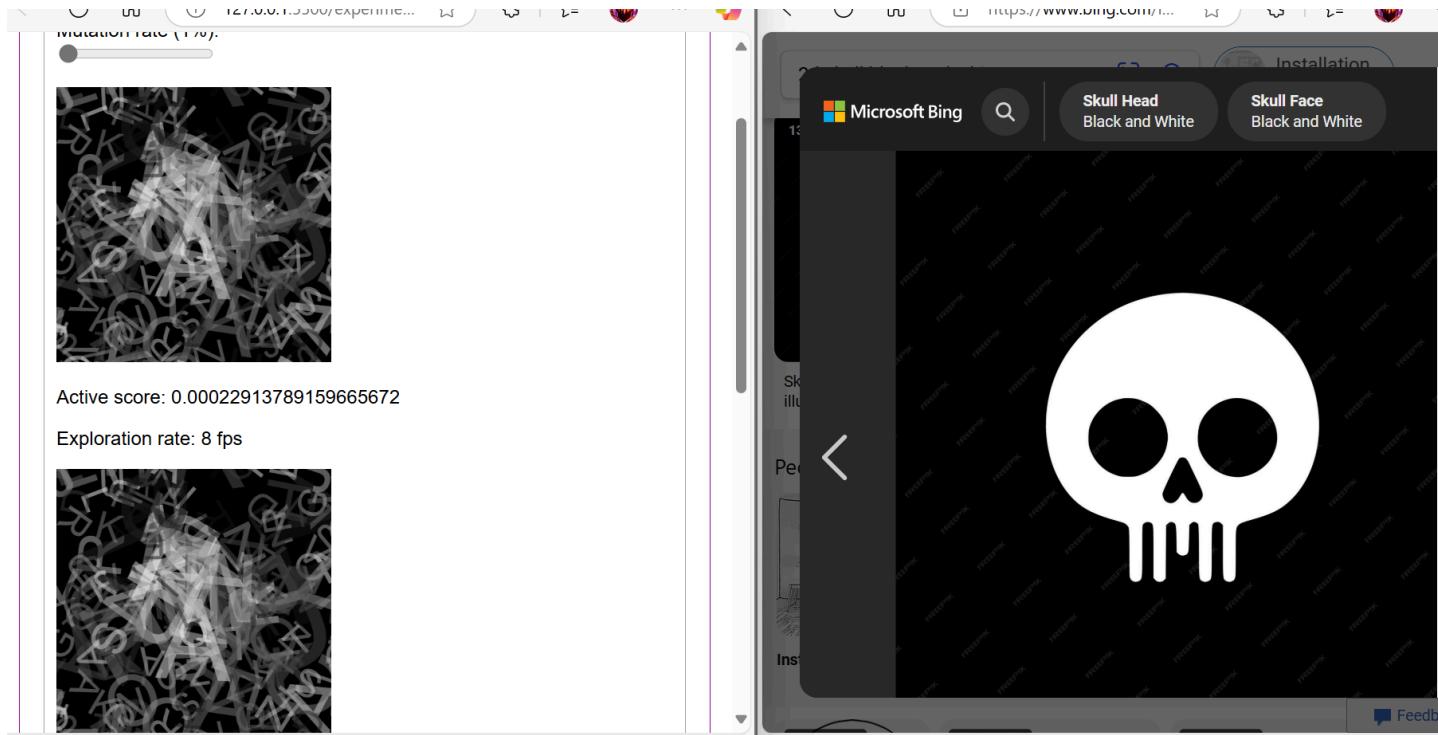
Mutation rate (2%):



Active score: 0.00022613218599305292

Exploration rate: 5 fps

I also briefly tested the emoji version but uh... it crashed my laptop so I was forced to get rid of it. There was an implementation with an entire color wheel of emojis but uh... that literally broke my browser and I was unable to screenshot it before I lost the code from needing to hard restart my laptop



This was the text implementation after adding some specific checks for text, specifically I made it so text can't be shrunk below 32 font size so that nothing was wasted as minuscule text, as well as made it so it only checked sizes using one parameter, `shape.width` to cut down on the fps chugging from too many math and text calculations.

# Experiment X - Subject/Topic

Text ▾

B&W Skull ▾

restart

Mutation rate (100%):

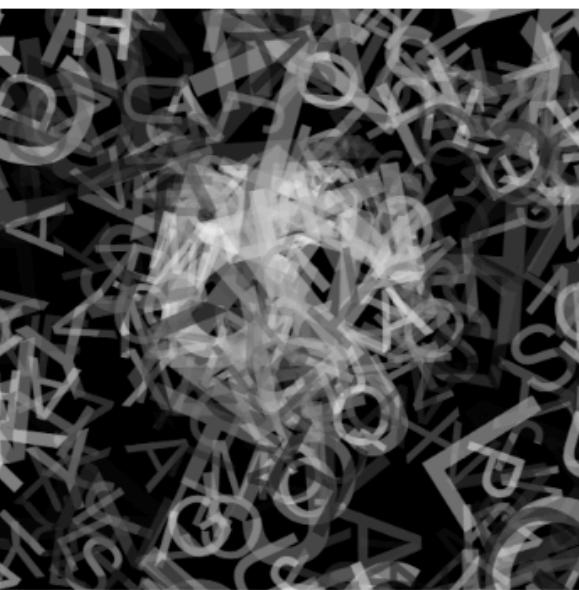


Text ▾

B&W Skull ▾

restart

Mutation rate (1%):



This was the end result from the test image. I also tested it on a -lot- of different images.

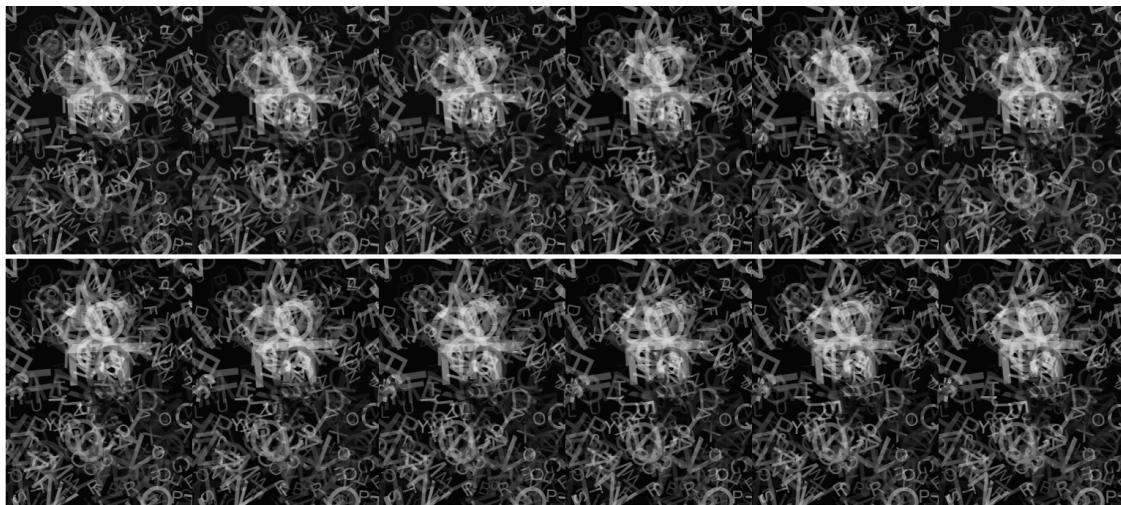


This one was one of the more interesting ones built from the below picture.

Mutation rate (4%):



Active score: 0.0004370106779078206



The images were rougher by far compared to the shapes, so I did a lot of tweaking of the text code portion to get it where I wanted it.



After a lot more iterations, it started to build the images faster and more consistently.



It eventually started building stuff like this after a lot of tweaking of how often it mutated through A-Z and hues, it started to resemble the other image better than just a loose idea of the image.

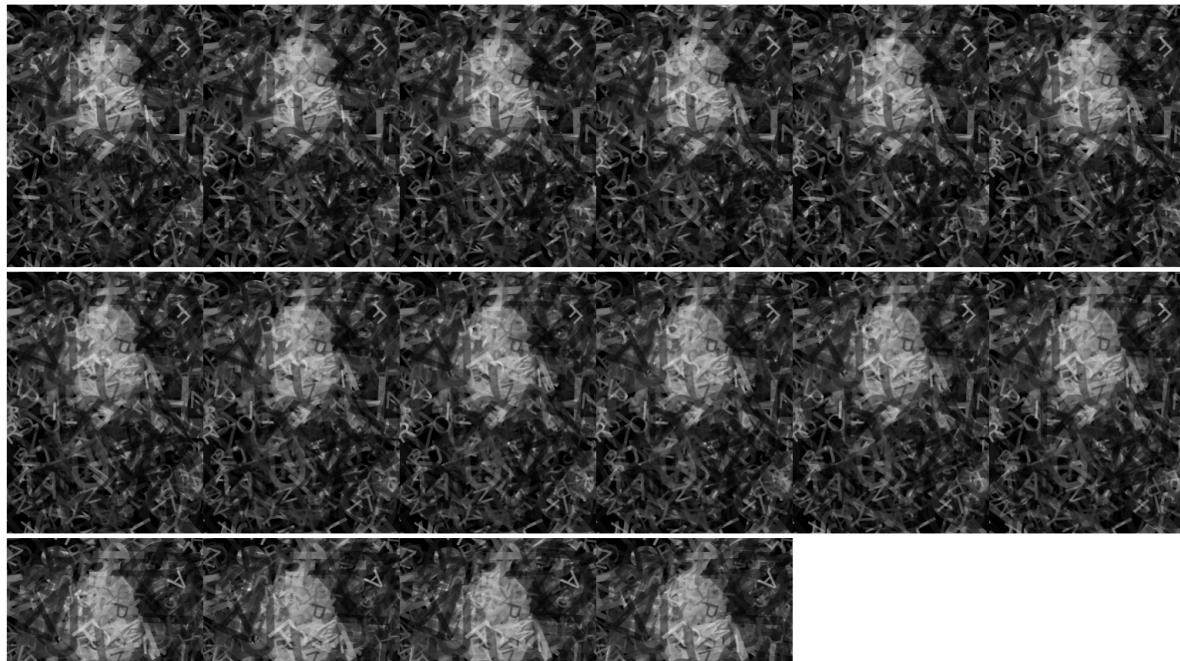
Mutation rate (3%):



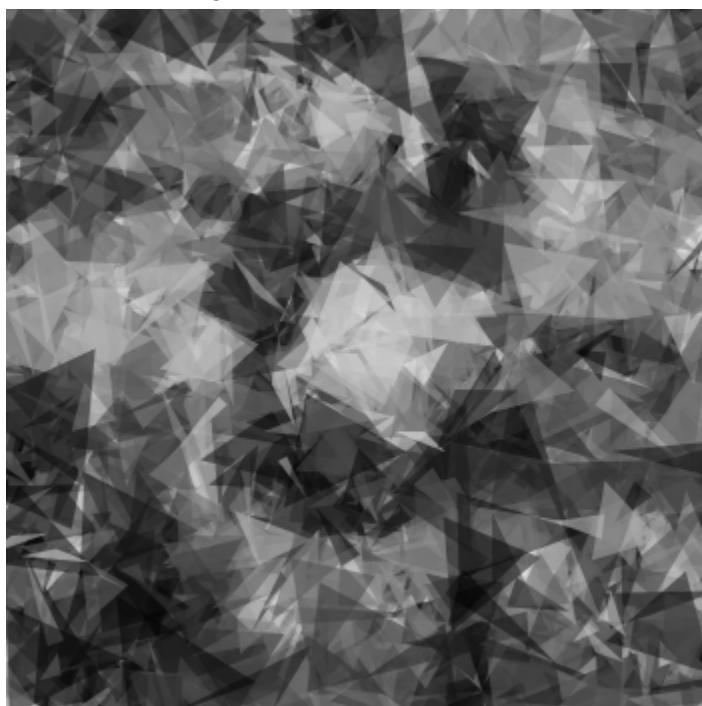
Active score: 0.0005486609369316473

Exploration rate: 4 fps

This was the final result after leaving it to run for an hour.

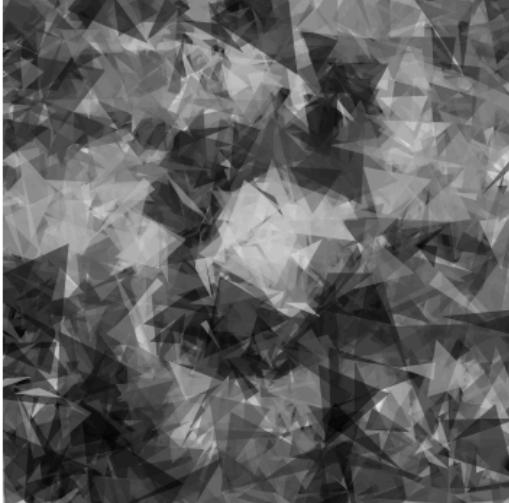


Some more images from that run.



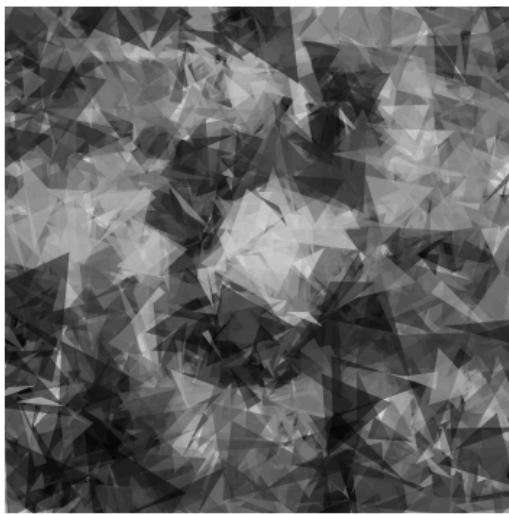
I then added some fun easter egg images for professor wes that I totally borrowed from his instagram.

Mutation rate (1%):



Active score: 0.001131690562690128

Exploration rate: 13 fps



Best score: 0.0011404421160329983

At this point I really dialed in on the triangle implementation, which is why it's showcased first. It builds the fastest and most accurate. Below is a list of some of the fun ones I ended up with after leaving them running about an hour or so each.

## Experiment 5 - Con"text"ual image generator

Triangle ▾ B&W Face ▾ restart Go Crazy: 100% Fix Colors: 1% Random!

Mutation rate (1%):



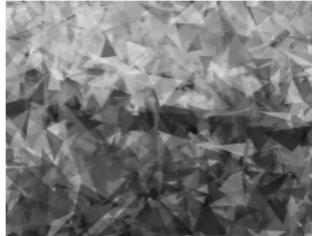
Active score: 0.0017174457625499222

Exploration rate: 12 fps



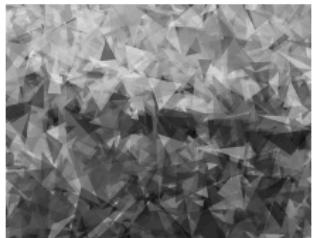
## Experiment 5 - Con"text"ual image generator

Mutation rate (1%):

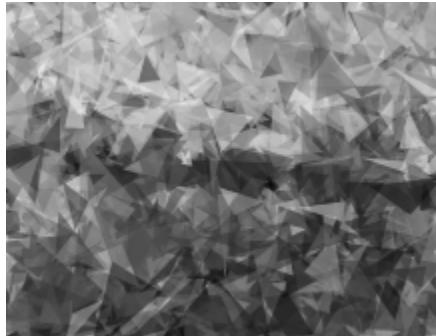


Active score: 0.0008414290879495462

Exploration rate: 19 fps

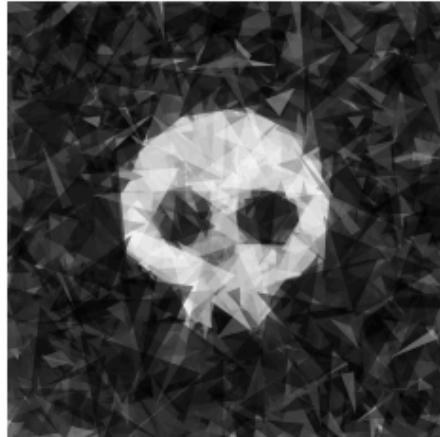


Best score: 0.0008484636150837272



## Experiment 5 - Con"text"ual image generator

Mutation rate (1%):



Active score: 0.0005100086301365835

I also added some extra buttons, fixed the spacing issues between the images, and renamed the entire experiment page after the image generator was dialed in. At this point I was done, I was actually surprisingly thrilled with the results, this is probably my best project yet and it was the first time I actually felt like something was completed... So uh... it's a weird feeling to have. Usually I'm endlessly trying to fix my projects but this one ended up better than I could have ever hoped initially. The extra time added to the due date probably helped with that, it essentially gave me an entire extra week to perfect it.

# Self Evaluation Rubric

Did you complete the assignment and did you complete it on time?	Submitted on time	No clarification needed
Did you put in earnest effort and provide an articulate summary of your experience?	Excellent	It was kind of interesting trying to take the essence of an image and implementing it myself as a proc gen version.
Was the assignment complete, with minimal errors, correct output, and good style?	Excellent	I hope so
How much creativity and EXTRA effort did you put into the assignment?	Excellent	Finding out a way to translate the same spirit of the image into one made of various random shapes/objects was pretty fun. After failing the initial text generation, I spent the extra time crafting it into something awesome, so I'm pretty happy with the results for the first time since ever.

## Reflection

This experiment was a bit of a wild ride. I started off with way too many ideas and no clear direction, which is pretty standard for me at this point. Initially, I was set on trying to make the base code more visually interesting by experimenting with different shapes and colors. Turns out that just because you can randomize everything doesn't mean it's going to look good or work well. The first few runs were... not great. Shapes were overlapping in weird ways, and I kept running into some annoying canvas container issues.

After a lot of trial and error, I finally got the shapes behaving the way I wanted. Triangles were the first ones to click, then circles, then squares. Text was still a nightmare, but I kept at it. I eventually got it to a point where it wasn't crashing my laptop every five seconds, but it still wasn't perfect. At some point, I just accepted that text wasn't going to be as clean as the other. Then the due date got extended and well... I got that fixed too! All in all, this project turned out waaaaaaaaay more awesome than I initially planned, exceeding even my own expectations. I would totally give myself an 11/10 if I could this time around, which is surprising since I usually think my stuff sucks massive butt.