Bonus Lab:
Drawing the Hard Way (in ARM Assembly)

Note:

FOCUS ON THE FINAL PROJECT (and your other classes, for that matter) **OVER THIS LAB.** It's not worth much and is really just an interesting endeavor for people who want to get a tiny bit of experience writing Assembly. Having said that, if you are near a cutoff between letter grades, this could put you over the top.

The TAs will not help with this at all, as it is a BONUS assignment. Please let them focus on Final Project work (and their own coursework) over this lab.

Provided Files

- `main.asm`

Files to Edit / Add

- `draw.asm`
- `Makefile`

Instructions

In this lab you will be completing TODOs to draw shapes in artisanal, hard-coded ARM Assembly.

Your first shape will be a triangle and it can be any color* you want, but it must be "pointing up" and at `x=50`, `y=22` as described by the TODOs.

Your second shape should be a rectangle in the color*, size, and position of your choosing. This one must be filled in/solid.

Your third shape should be a letter of your choosing (X, A, Z, N, L, V are all easy choices), again in any size/color*/position.

***Note: Each of the three shapes should be a different color. <u>None should be the basic Red/Green/Blue/White provided</u>.**

After you have completed all the TODOs and your output looks correct, you are finished with the lab and should go ahead and submit it.

Tips

- Don't agonize over this. It's not worth much at all and it could prove too difficult given how little I've actually prepared you.
- Look at Lecture 23 and the provided links for "Further Reading" on the last slide.
- You might want to try your hand at writing your own reusable functions (particularly a `setPixel`) in order to save some time, but you can absolutely just make `drawStuff` a ***really long*** function.

Submission Instructions

Ensure that cleaning and building/running your project still gives the expected results.

Zip up your entire project folder, including all source files, the Makefile, and everything produced during compilation **(including the .gba file)**. Submit this zip on Canvas. Name your submission BonusLab_LastnameFirstname. For example:

> “BonusLab_MomoaJason.zip”