

## Project Proposal

Name of term project- Application of Beauty

### -Project Description -

An interactive experience where the user can determine what pigments best suit their facial features using OpenCV and answering a questionnaire in the beginning

### -Competitive Analysis -

I've seen two term projects in the past that have had a similar project with what I'm doing, but I'm doing way more things such as more facial features and interactive use experience. One of the competitors made a makeup application also but she only did two facial features and some web scraping recommending products. I plan on doing 4-6 facial features with geometry reflecting the feature on the users face and where to apply the product at. I'll likely do web scraping after I reach MVP, but for now I need to work on my major applications for the project.

The second competitor I saw, she just completely did web scraping so I think my project is stronger than that. I would like to add some relaxing music from the game for the user to enjoy, thus increasing the user experience. In addition, their makeup application will be better customized deciding whether they're cool, warm or neutral toned. I've basically searched through the 112 term project directory and no one has done a term project like mine before.

### -Structural Plan-

Use OpenCV to show the certain facial features that will be analyzed in an `opencvlib.py` file. Have `constants.py` file as the different states and the `main.py` will call on both files where the finite state machine is made and it will switch between different slides where the users face will be shown. Makeup Lib will be shown as the questionnaire file and I'm planning on making more files but I'm not sure yet.

### -Algorithmic Plan-

What was really complex about my term project was I took a great deal of time considering how the geometry and objects should be displayed on the user's facial features. It takes time to think of how the shapes are configured and the numbers involved to make it successful. I haven't used much math in programming before until this term project. I also had to come up with an average color algorithm for a facial feature since the tones of a feature are inconsistent with each other. In addition, I'm in the process of evaluating what skin tone/ color a user is because I have to consider everyone's skin tone and how that can affect the other pigment applications on different

facial features. Also, I need to create an algorithm of how the user looks like with the pigment applied.

UPDATE- i need to fix the fsm somehow to correspond with self.features

#### -Timeline Plan-

4/16 - 4/19 - Get the color algorithm and slides hopefully working and done

4/20 - Make an eyeshadow and eyeliner feature(extra)

4/22 - Have a before and after color application results page

UPDATE-having an error with making the f string of the makeup, like bruh

4/24 - 4/29 - Add additional features such as music and web scraping, summary page at the end too

#### TP3 Update-

So literally, I just added music, a color opacity scale and an extra eye shadow feature. I also made an error prevention for the undertone buttons. When you try to click next without clicking an undertone button, it stays there until you click one.

I 'attempted' to make a back screen at the end. I have the drawing done but not the code.

#### -Version Control -

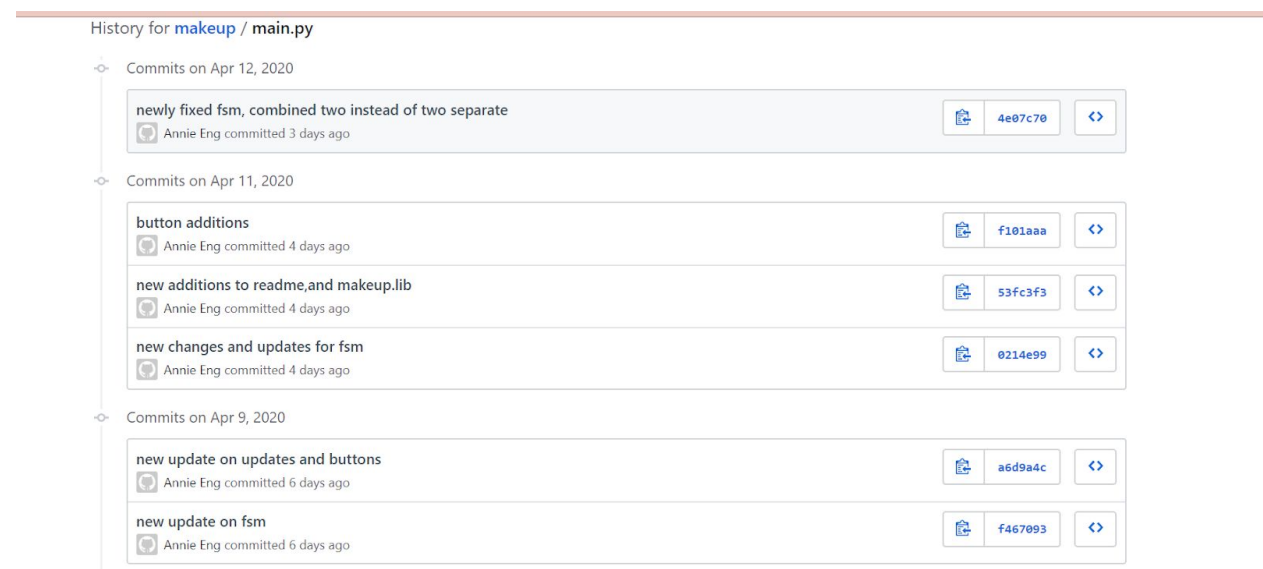
I have a GitHub account and I know how to use Git.

I use the commands git add - (add file)

Git commit -m "(name of additions made)

And git push, which pushes the files I added and changed

~Different versions with additions~



Modules- OpenCV

