Release Plan

3D model generator
team name(Henry Chang,Andrew Dato, Nir Jacobson,William C King,Austin Shelton)
Release 1
release date: November 24, 2016
revision number:1
revision date: October 4

Top level goals:
1 Functionality
-Using up to 6 images, generate a 3d Matrix that represents a 3d model
-allow the user to export the Matrix as a .obj file
-Create a basic program to display the functionality (outputs fixed image of object)

User interactivity
-create a basic user interface
-Allow the user to input their own images to each slot (open file browser?)
-Allow user to input their own background color/sensitivity
-Output model scaling/offset/rotation

Graphical user interface
-Allow user to interact with and crop images
-background eyedropper and sliders
-Have a 3D preview cube
-Real time interaction with preview to test values before doing calculations (make background of images certain color to show what will be removed)
-add color based on color of photo or allow monochrome color of choice using color and alpha sliders
-android support?

User stories
Sprint 1

- As a consumer, I want to be able to take up to 6 images and generate it into a 3d model, so that I can work with it in a 3D environment.
- As a consumer, I want export my generated 3D model as a .obj file, so that I can use it across multiple platform.
- As developers, we would like a basic software to show off our functionality without having to develop UI

Sprint 2

- As a consumer, I would like to be able to upload my own images through a browser window so I don't have to manually name the files or put them in a folder
- As a consumer, I would like an interface to tweak the settings of the model generator so that I can have more control over the output/outcome
- As a consumer, I would like to have a in-app image editor, so that I don't have to rely on other image processing software, and more easily compare angles of the resulted model.

Sprint 3

- As a user, I would like to have a graphical interface, so that I don't have to type into the console window.
- As a user, I would like to rotatable preview cube of images, so that I can make sure all images are aligned correctly.
- As a user, I would like have preview, so that I can have a better idea of how my changes will affect the model.
- As a user, I would like to change the color of the model, so that I can better customize the end product.

Backlog

- As a user, I would like to have a mac version, so I don't have to use it on Windows.
- As a user, I would like to have a mobile version of the software, so I can use it on the fly.

Tasks:

-Create basic interface for developers

-Create an array of images

-Turn each image in array to 2d vector matrix of rgba values

-create a 3d array

-initialize will all values=0

-taking the pixels of each 2d array and add their value * weight depending on distance from the side they belong to

-divide every element by the number of faces (or by total amount of weight put on the values added to prevent the texture from becoming darker, though this will

end up being .5 * the number of faces if all faces given either have a match or don't)

-create a copy of the first 3d array take every value close enough to the background color and set it to a null value in the copy array

-create a copy of the second 3d array taking every value that is not touching a null value(as in its x,y or z value is within 1 of the object it is touching) and set its value to null in the new copy.

-create an algorithm to link together vertices with triangles using vbo indexing(may take a while)