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Project Description: My term project is going to be an application that solves a scrambled rubik's cube. The user will show each side of their cube to the camera then be presented with a turn by turn guide on how to solve it as well as a representation of how the cube should look after each step.

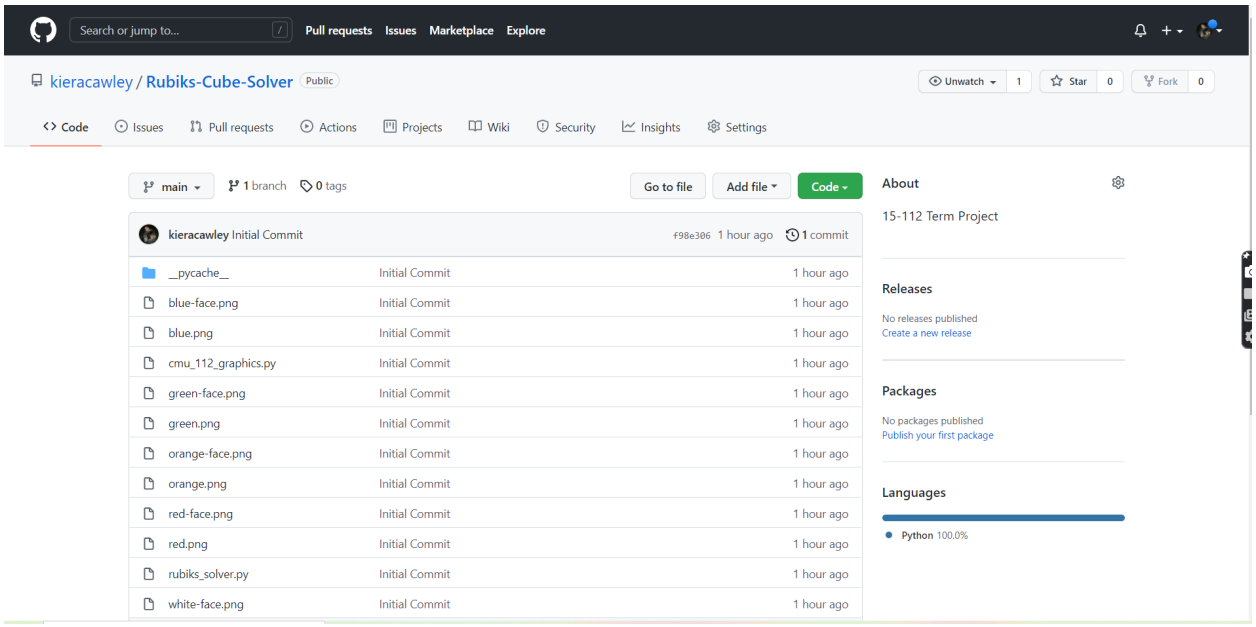
Competitive Analysis: Other Rubik's cube solving projects I've seen online have taken user input by having them manually enter in colors. Mine differs from this as I will have the user interact with a physical cube and simply be able to show the sides to the camera to input the colors. Additionally, many of the projects I have seen have used the Fridrich Method to solve the cube while I plan on using a different method.

Structural Plan: My project will have a cube class that when initialized will open up the camera and take in the 6 sides of the cube. This class will have methods to convert the faces to a 3d array of pieces that represents the cube, rotate a side of the cube, and to generate the sequence of rotations that get you to the solution.

Algorithmic Plan: The trickiest part of this project is the algorithm that solves the cube. I will have 4 main algorithms that are all combinations of side rotations. The first will put all of the edge pieces into place, the second will orient them all correctly, the third will put all of the corner pieces into place, and the fourth will orient all of the corner pieces.

Timeline Plan: I intend to have the algorithm fully working by TP2 then for the remainder of the project I will focus on creating the visual representations of the cube after each step.

Version Control Plan: I am using github for version control.



Module List: OpenCV