

Daily Log

Monday September 9

Wrote the L and L' methods, and made sure they work in combination with each other, and with the previously written R and R' methods.

Tuesday September 10

Wrote the U, U', D, D' methods and made sure they work in combination with each other and with the L, L', R, R' methods.

Thursday September 12

Wrote the F, F', B, B' methods and made sure the whole cube works by trying many scrambles and checking if the final state matched the state when I perform the moves on an actual cube. Did research about matplotlib 3D plotting to plot the cube, but not sure yet if that's doable.

Timeline

Date	Goal	Met
Today	Finish programming all the moves and figure out a way of displaying things live in python	Yes, finished programming all the moves, and started to do research about displaying cube live in python.
Today plus 1 week	Make the T-display of the cube with colors and change live as you enter move (or 3-D interactive if doable with matplotlib)	
Today plus 2 weeks	Review edge detection in opencv and begin coding it to eventually determine which frames the cube are in the shape of a cube	

Reflection

Writing the methods for each move took a long time because of the 2-d indexing for a 3-d cube. However, it works well now. I was originally going to do the 2-D T-shape display of the cube, but after doing some research 3-D interactive display seems doable. I'm not sure which one I'm going to go with yet.

```
[[0, 0, 0, 0, 0, 0, 0, 0], [1, 1, 1, 1, 1, 1, 1, 1], [2, 2, 2, 2, 2, 2, 2, 2], [
3, 3, 3, 3, 3, 3, 3, 3], [4, 4, 4, 4, 4, 4, 4, 4], [5, 5, 5, 5, 5, 5, 5, 5]]
R U R' U' R R L B B' B L U R L U'
[[3, 3, 4, 0, 3, 0, 5, 4], [0, 1, 3, 4, 3, 5, 0, 1], [4, 1, 5, 4, 4, 5, 5, 2], [
1, 4, 4, 0, 2, 3, 2, 3], [0, 2, 2, 5, 1, 0, 0, 1], [1, 5, 5, 2, 2, 3, 1, 2]]
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Figure 1: An image of sample scramble of cube