Updates: Friday, March 25, 2022  
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**Updates:**

1. Tried implementing the 3D planner directly on the Alp Sahin’s code, faced issues:
   1. 2D to 3D conversion
   2. Lot of dependencies on python files
2. Created the program from scratch, Implemented A\* planner on 3D symmetric objects using Euclidean Heuristics
   1. Cost = distance for it to move, rotation = 2.5, up/down = 1
   2. seems to be working efficiently with less runtime
   3. created the path for better visualization

Chart, radar chart

Description automatically generated

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* 1. used python libraries:
     1. math
     2. numpy
     3. matplotlib.pyplot
     4. mpl\_toolkits.mplot3d (from mpl\_toolkits.mplot3d)import Axes3D

1. Assumptions:
   1. 4 faces
   2. 4 actions (“UP”, “DOWN”, “Rotate CW”, “Rotate CCW”)
   3. Currently assumes the center of the regions
   4. Resolution: x, y, z = 1.25, 1.25, 1

**Summary:**

1. Created 3D planner
2. created a base of future implementations:
3. Geodesic Heuristic
4. Pose estimation
5. Continue same by relaxing assumptions
6. Modifying resolutions
7. Multiple geometries (symmetric, unsymmetric), etc.