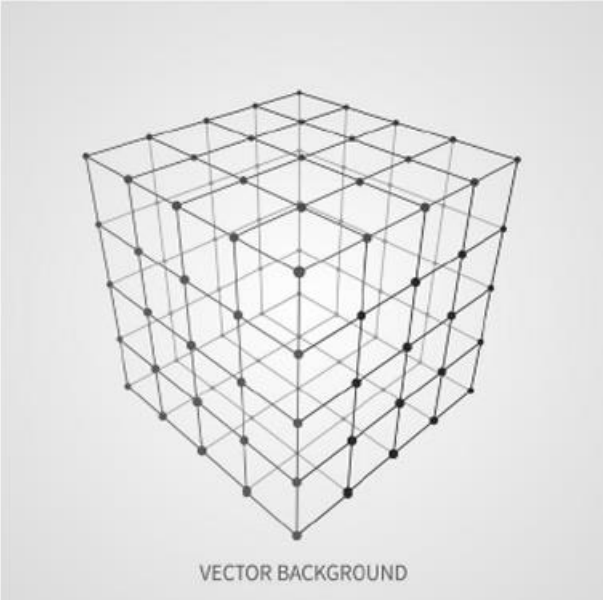
ROBOTICS INTERN ASSIGNMENT

1. Consider a 3D Grid of points from 0,0,0 to 100,100,100 with unit increment in all axes. Assign higher weights to some of the points randomly, and zero weights for rest of points. User inputs two or more sets of {start, end points}.

a. Starting from a given time, determine shortest path for each set, where velocity of travel for one grid to another is v m/s such that not two paths should not have a common point at any time.

b. Plot the paths in 3D



2. Make dictionary of 15 waypoints with keys being 'lat', 'lon', 'alt'.

a. Using Dronekit or pymavlink, plan a mission in auto mode using these waypoints (quadcopter). Drone should land at last waypoint

b. After 10 waypoints, include a new waypoint to the mission at 100m perpendicular to the current direction of travel and continue the updated mission

c. Print at every instance the estimated time and distance to complete the mission.

d. Plot the path of travel in 2D

How to submit:

- Provide detailed documentation of the algorithms and their implementation and your approach.
- Add the results and include visualizations of feature matches between different test images or graphs
- Please write a good readme file and share your github repo over email to rajeshree@vecros.com and prime@vecros.com for collaboration by keeping the repo PRIVATE