MAVROS Training

Link to MAVROS Wiki: http://wiki.ros.org/mavros
Link to Ardupilot GAZEBO installation: Ardupilot_SITL

Problem Statement:

Using the *Ardupilot SITL* firmware, simulate the IRIS quadcopter in GAZEBO to *arm*, *takeoff*, and then *track* a diamond-shaped trajectory by using the MAVROS topics and services (setpoint topics for movement). At the end of the simulation, you have to plot the tracked trajectory using the matplotlib library.

Instructions:

1. Make sure to first **ARM**, set to **GUIDED** mode, and then **TAKEOFF**, in that same order. MAVROS takes some time to arm, and to takeoff to your desired altitude. Therefore, you will have to add appropriate sleep commands in the code (look up **time.sleep()** function).
2. You can consider the trajectory to be in the x-y plane at a height of 5-10 meters for simplicity, but we won't stop you from using your brains to make it more complex ;)
3. Try adding Attitude setpoints to make it more interesting (for example facing the center at the corners). You can also try making your own trajectories and make the drone track it if you wanna play with your creativity, but make sure you don't end up spending too much time on it.
4. For plotting the tracked trajectory, you'll have to subscribe to the appropriate topics at an appropriate rate during the simulation, and save the data in some form to plot it after the simulation ends.
5. Do google for help (especially for errors) before reaching out to seniors. (Note: improves googling skills).