Tutorials - Task 1.2 - Hungry Bird

Path-planning

Path-planning is an important primitive for autonomous mobile robots that lets robots find the shortest or otherwise optimal path between two points. Algorithms to find a shortest path are important in the domain of robotics. Path-planning requires a map of the environment and the robot to be aware of it location with respect to the map.

Path-planning in V-REP

In this theme we will we using the Open Motion Planning Library(OMPL) to plan our paths. OMPL is an open source library which is available as a plugin in V-REP. Using the OMPL Plugin you can plan paths efficiently and easily using a wide variety of algorithms.

Go to this link to learn more about the OMPL Plugin in V-REP.

In Task 1.1 you implemented position holding, wherein you gave some coordinates and the drone held its position at those coordinates. As you know, those coordinates were in the WhyCon frame of reference.

But the OMPL Plugin in V-REP is based upon the simulators own coordinate frame, also known as the "V-REP World frame".

Thus, to compute the path and send it to the drone, we need to transform our coordinates from one frame of reference to another.

Therefore, we will now compute the transforms i.e. scaling factors required for translating from the WhyCon frame of reference to the World frame of reference of the simulator and vice-versa.

You should follow this link to get started with this task.

Note: The height and other properties of your vision sensor would be the same in this scene and Task 1.2, so the scaling factors you calculated would be the same in these scenes.