

lab9

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Simulation

Goal : Create A navigation Stack plugin for drone

TO DO

- All necessary files are in lab_9_helper folder
- copy the package bebop_navigation (provided in lab_9_helper) in your lab_8 workspace .
- include the bebop_navigation/map_less_navigation.launch file in your lab_8 launch file (launch file which you were using to call point_cloud_to_laser.launch and get_pointcloud_circular.launch)

TO DO

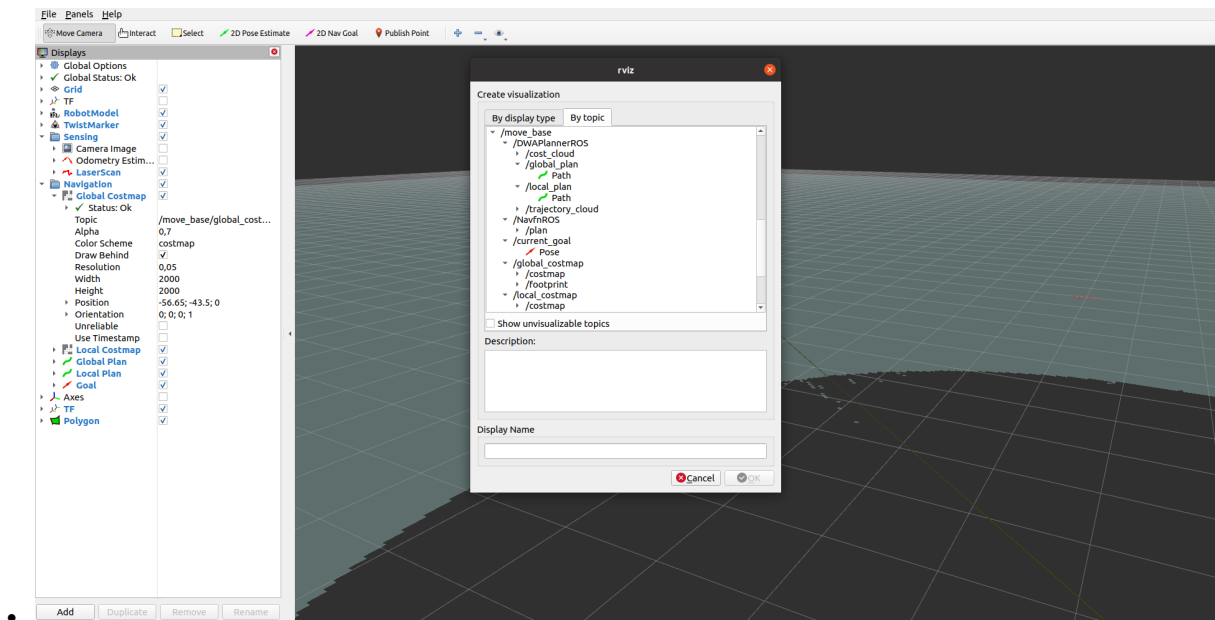
- change the point_cloud_to_laser.launch's scan_frame argument to base_footprint . (Question : Think why we did this , Its related to Question 4 of lab8_part2,explain.provide answer while submitting solution)
- Do the next steps in bebop_navigation package

TO DO

- complete TODO in map_less_navigation.launch
- complete TODO in move_base.launch
- complete the todo in planner.yaml . link for help :dwa local planner
- complete todo in costmap_common.yaml . link for help only read Robot Footprint Model topic : footprint model
- for more info about inflation_radius parameter check at the link : costmap

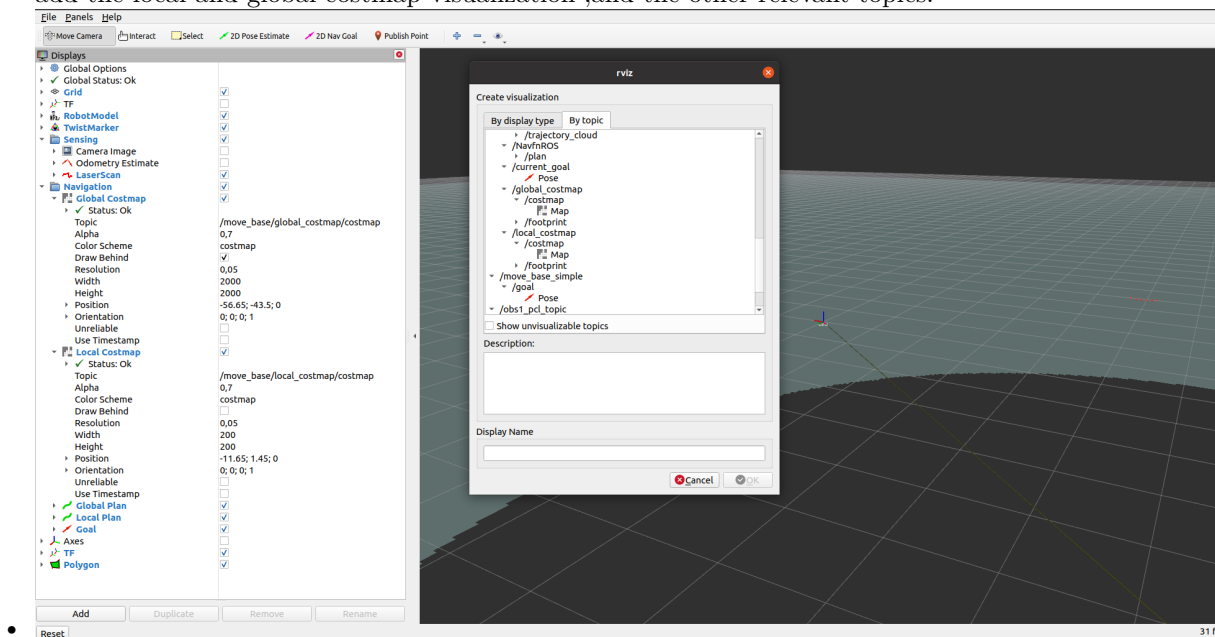
TO DO

- add the global planner and local planner topics in rviz (change the color of global planner to green and local planner to yellow)



TODO

- add the local and global costmap visualization ,and the other relevant topics:



TO DO

- Once all the previous todo has been done ,launch your application , takeoff the drone and give the goal position in rviz (check topmost tap with red arrow to give goal position)

For Grading

- Submit the bebop_navigation package **only** as a zip file .

- There are some questions asked in various files , write the answer as a comment in the same file .
- submit the video launching the gazebo world ,rviz giving goal location and drone flying towards it ,and terminal where it shows that goal has been reached or not (you don't have to do anything separately for showing this message , its a part of core navigation stack packages. It shows the various feedback messages as default.)