

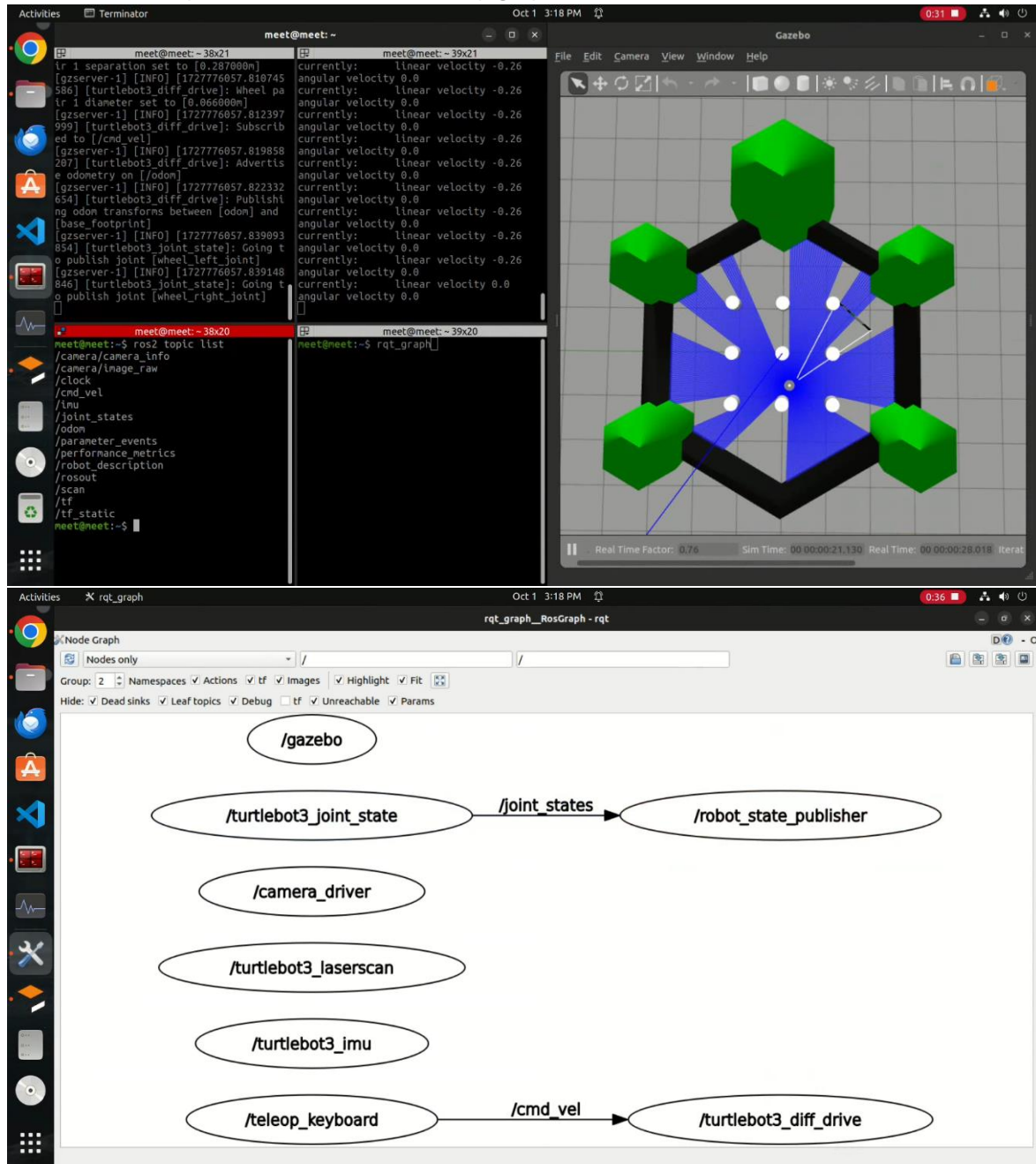
Lab 8 – Report

Meet Kansara – 220929270 Roll no. 54

Aim: To teleoperate TurtleBot3 in Gazebo, create maps of the environment using both Cartographer and SLAM Toolbox, and navigate TurtleBot3 autonomously on the maps generated by these tools.

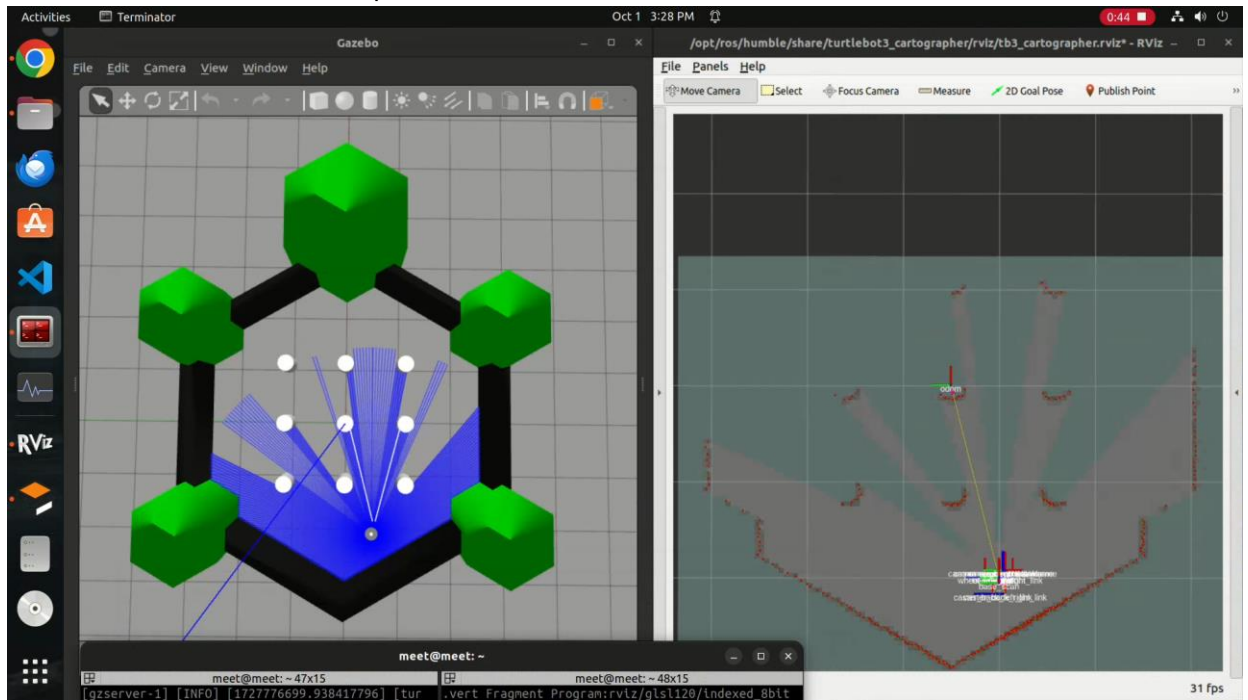
Execution and analysis:

1. TurtleBot3 Teleop control in Gazebo with rqt graph

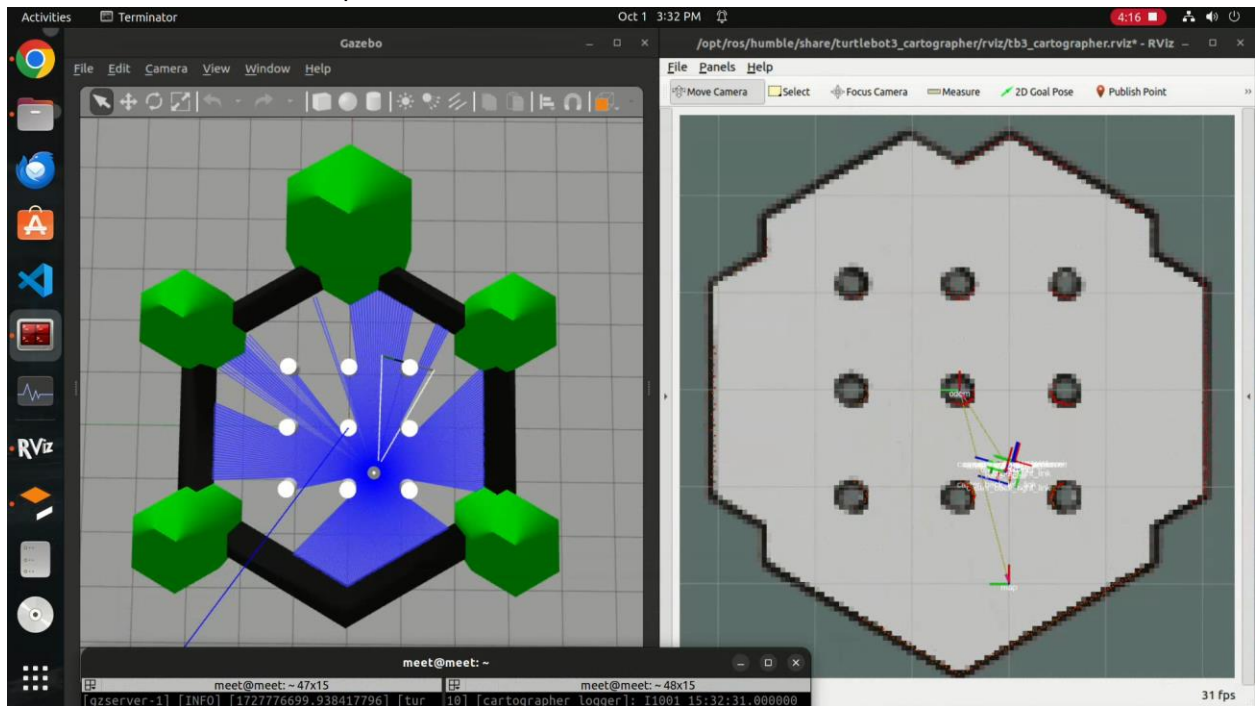


2. Map Creation with Cartographer

- Initial View Before Map Creation

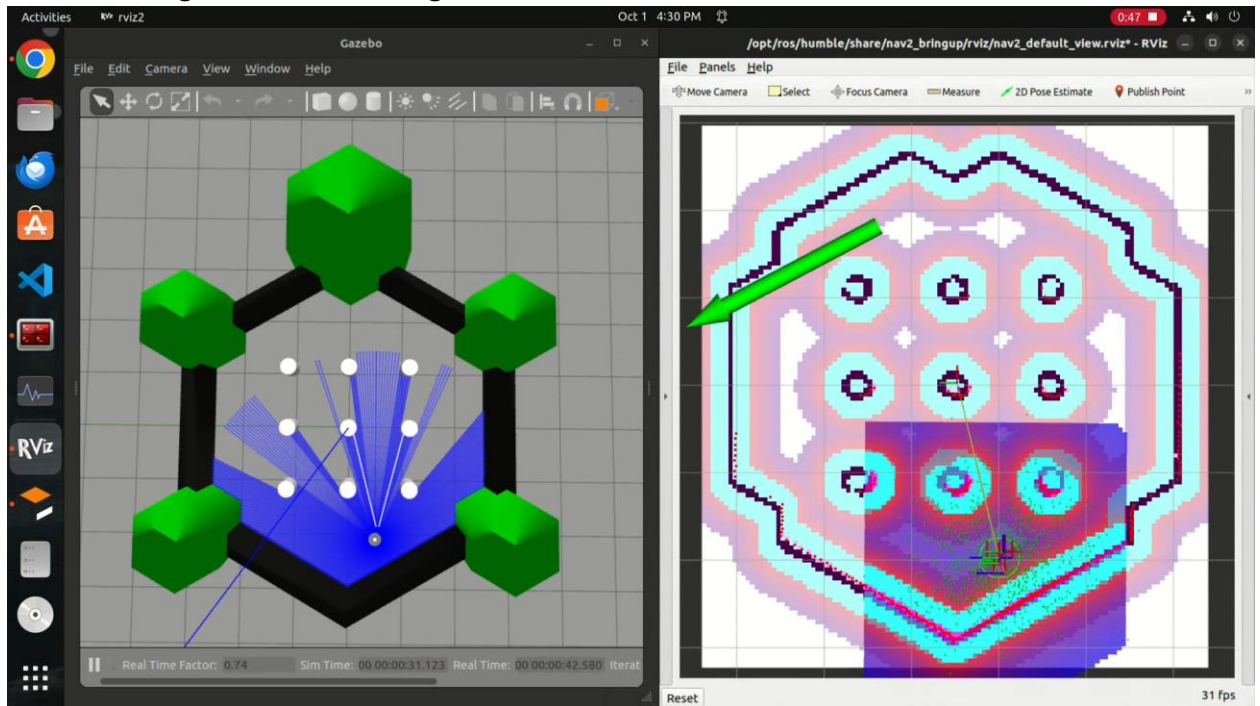


- Final View After Map Creation

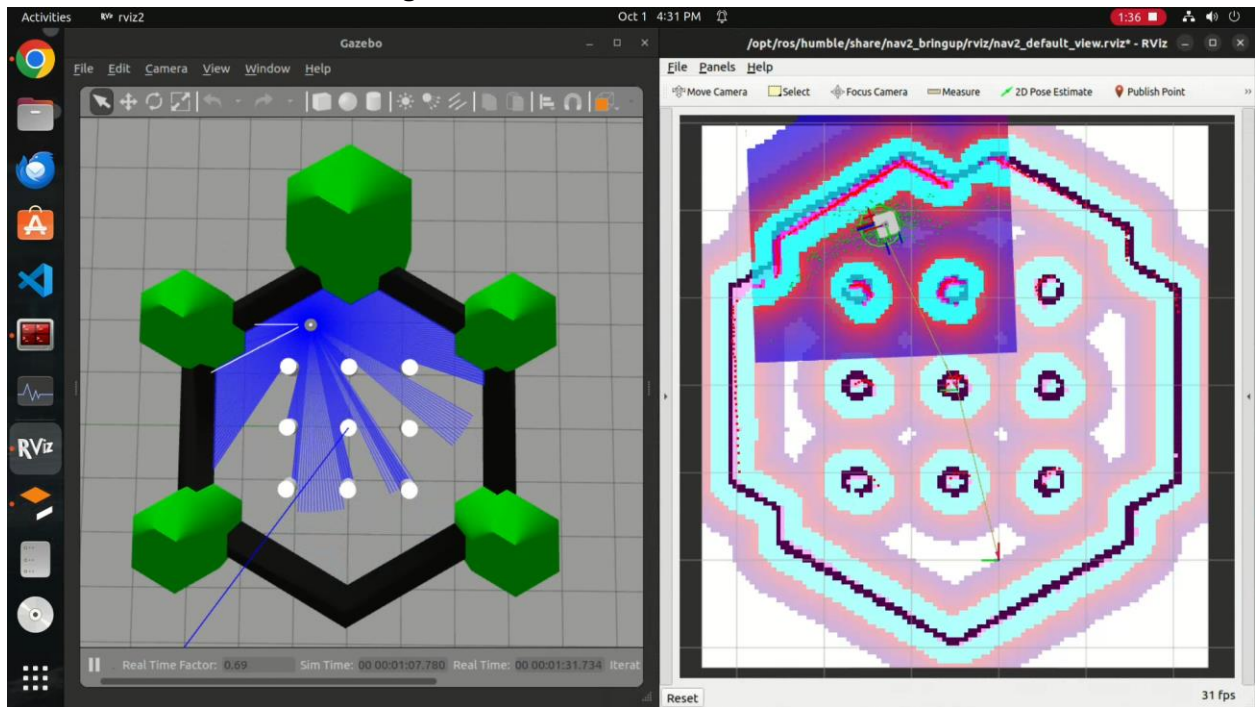


3. Navigation on Cartographer Map

- Setting Goal Pose for Navigation

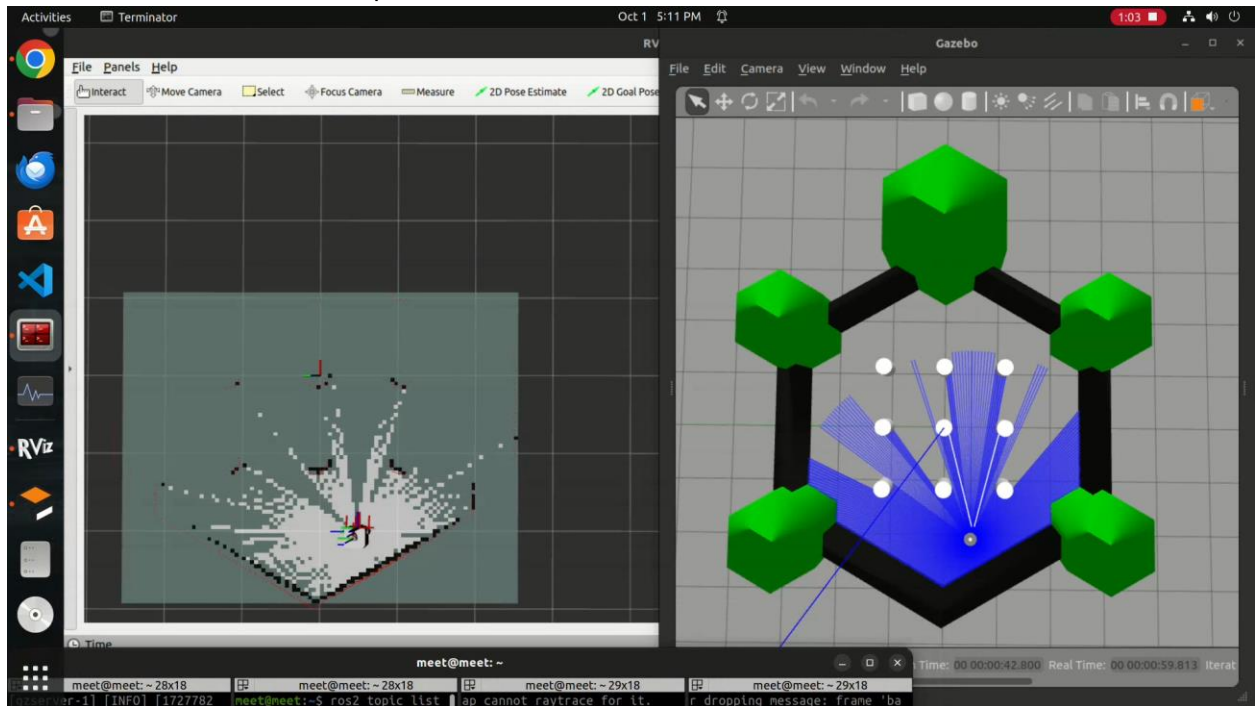


- Final Position After Navigation

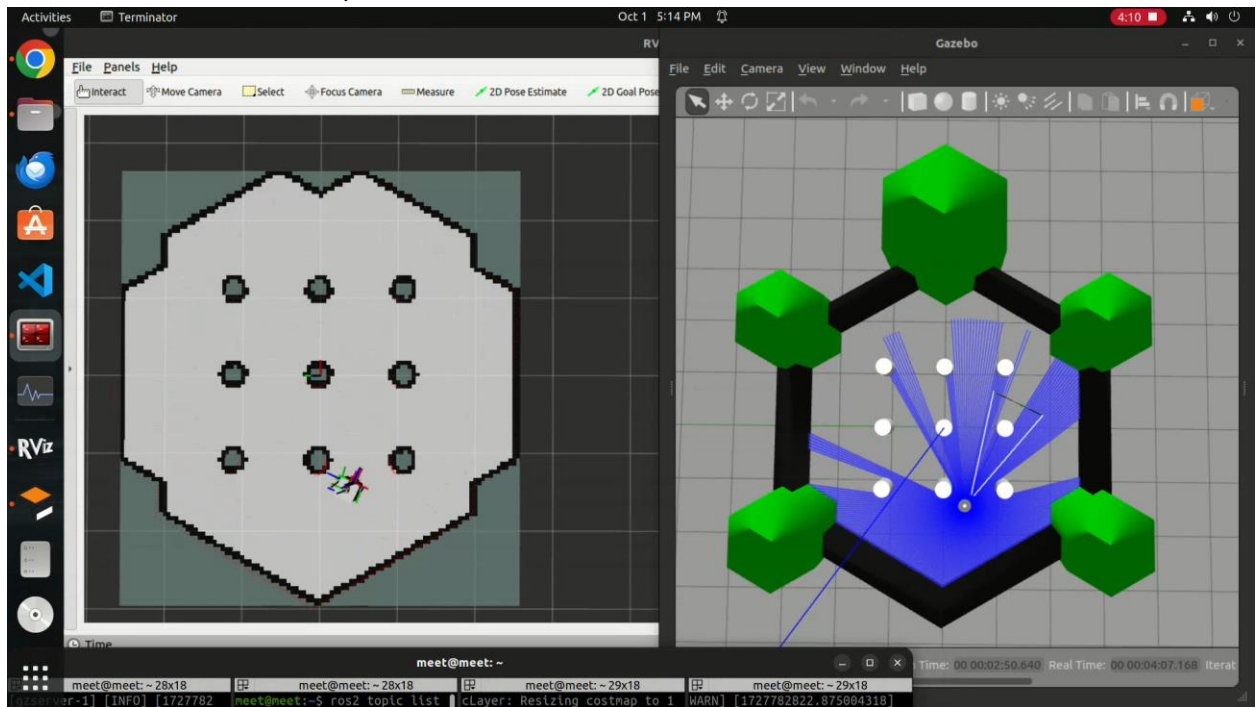


4. Map Creation with SLAM Toolbox

- Initial View Before Map Creation

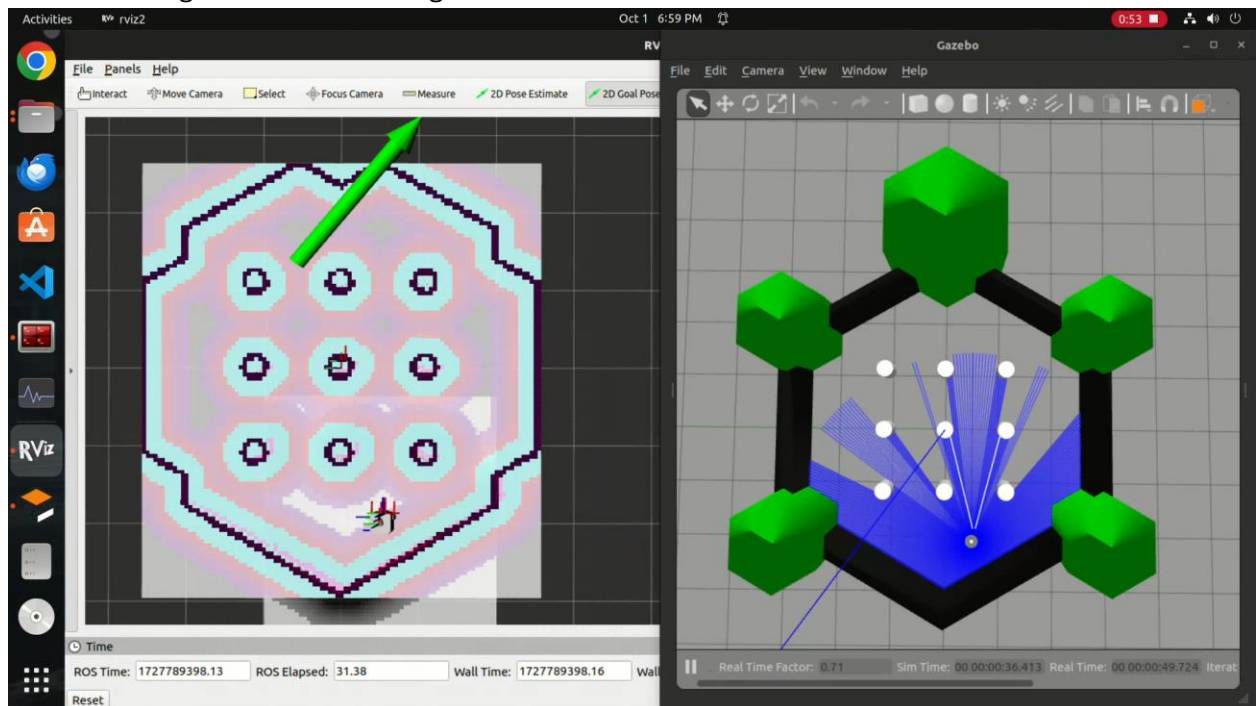


- Final View After Map Creation

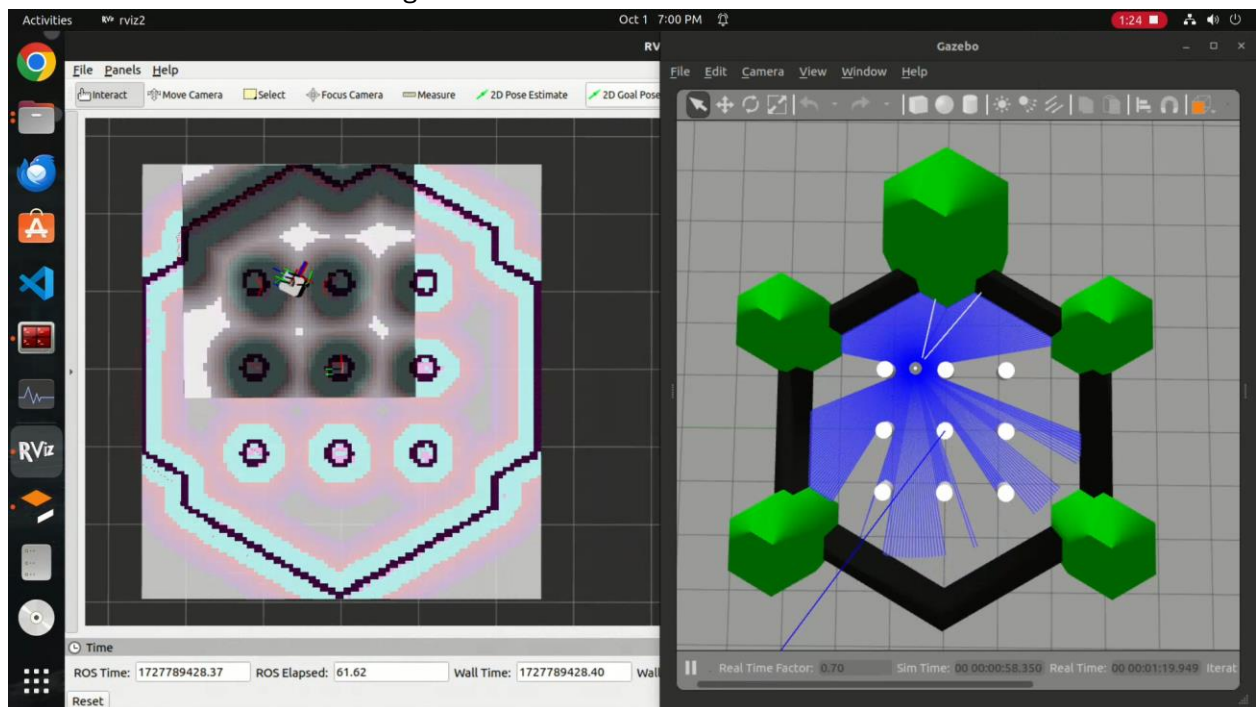


5. Navigation on SLAM Toolbox Map

- Setting Goal Pose for Navigation



- Final Position After Navigation



Conclusion: TurtleBot3 was successfully teleoperated in Gazebo, with detailed maps created using Cartographer and SLAM Toolbox. Autonomous navigation was effectively achieved on the maps generated by both tools.