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Labwork 5

First, I installed Gazebo Harmonic in my Ubuntu system.Then I created a workspace and built a custom robot model using SDF.

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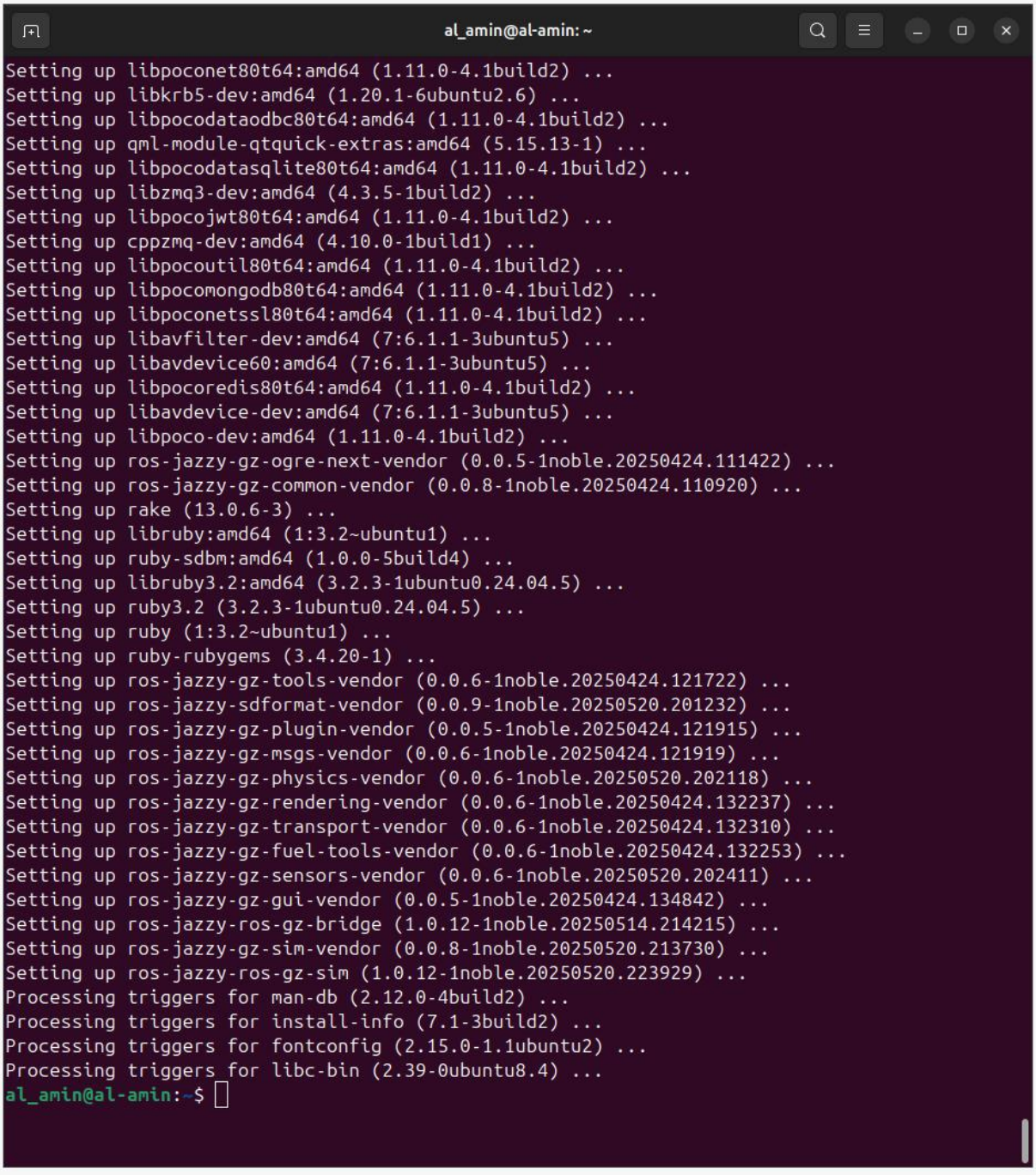

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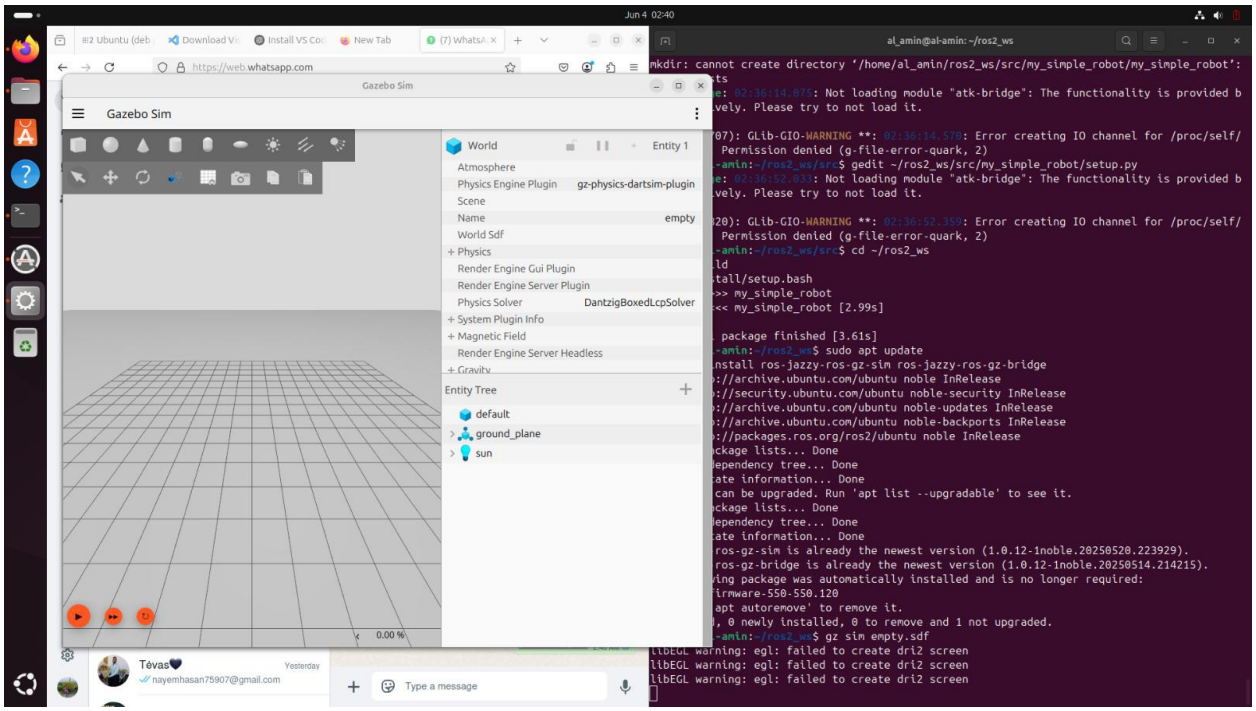

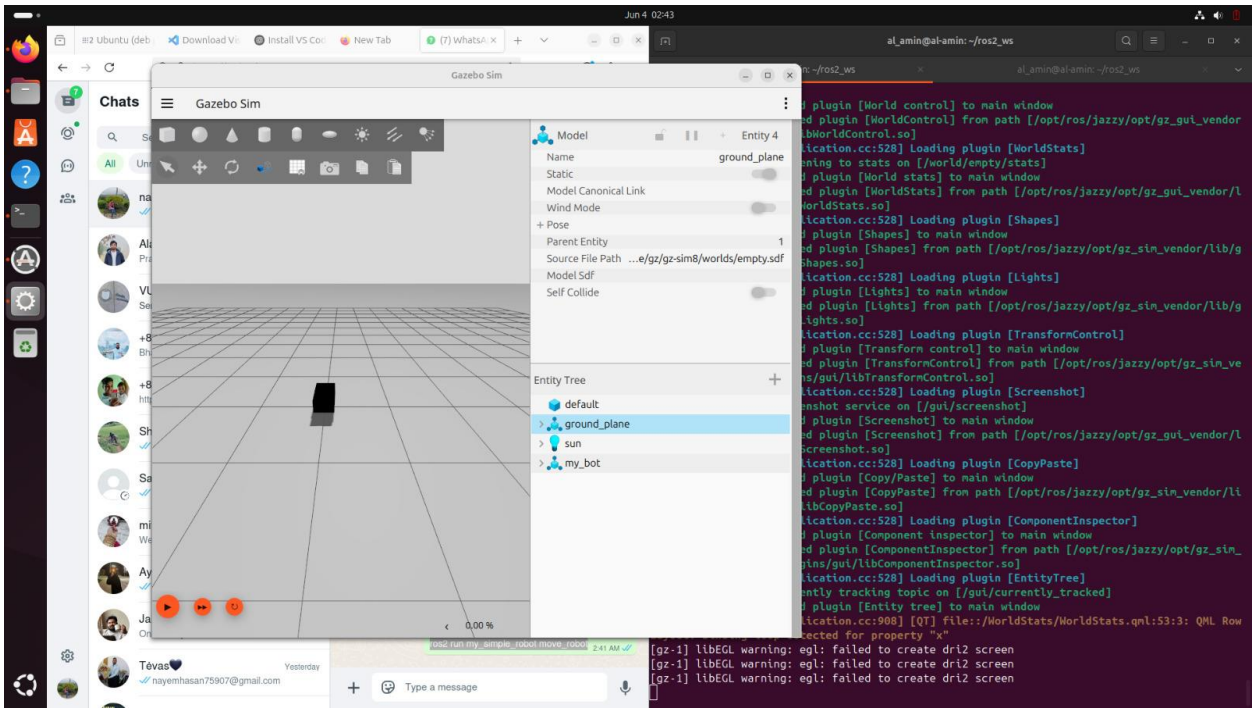

The model is a simple box with dimensions and mass defined, and I set its color to green using the ambient and diffuse material properties.

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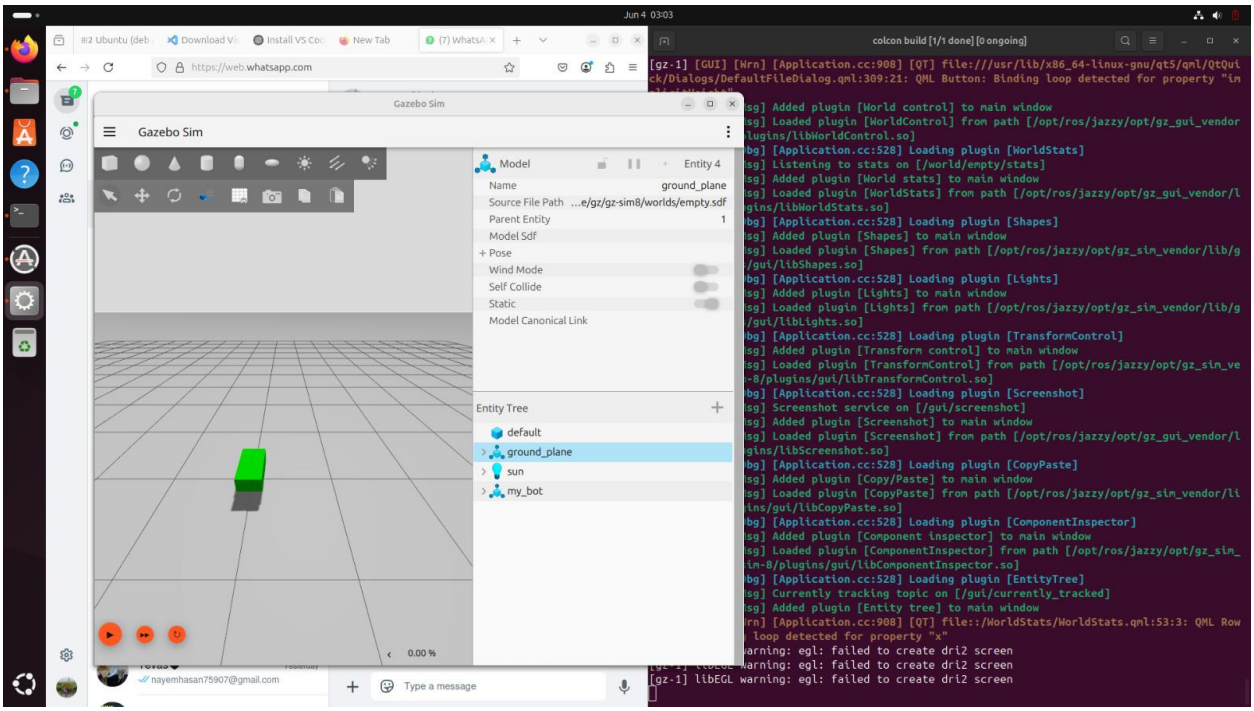

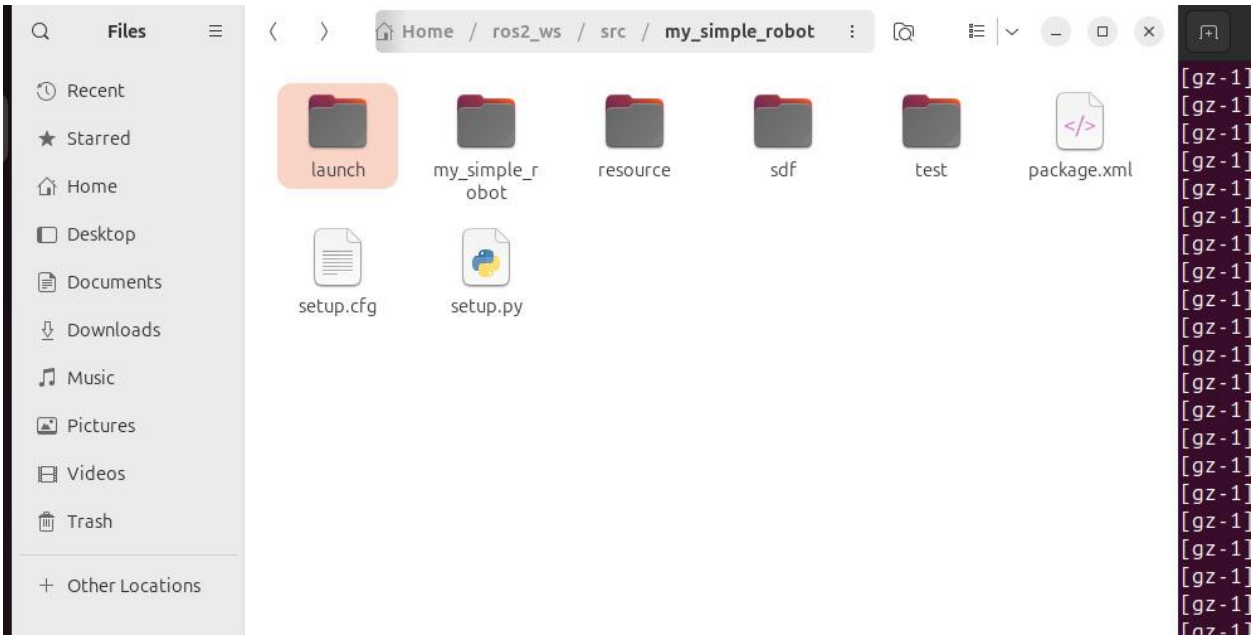

After that, I created a launch file to spawn the robot in an empty Gazebo world. For movement, I wrote a Python ROS2 node that publishes velocity commands to the topic /my_bot/cmd_vel. I used a timer callback to send forward velocity (0.1 m/s) every 0.5 seconds. The robot moves forward in simulation, and the entire system works through

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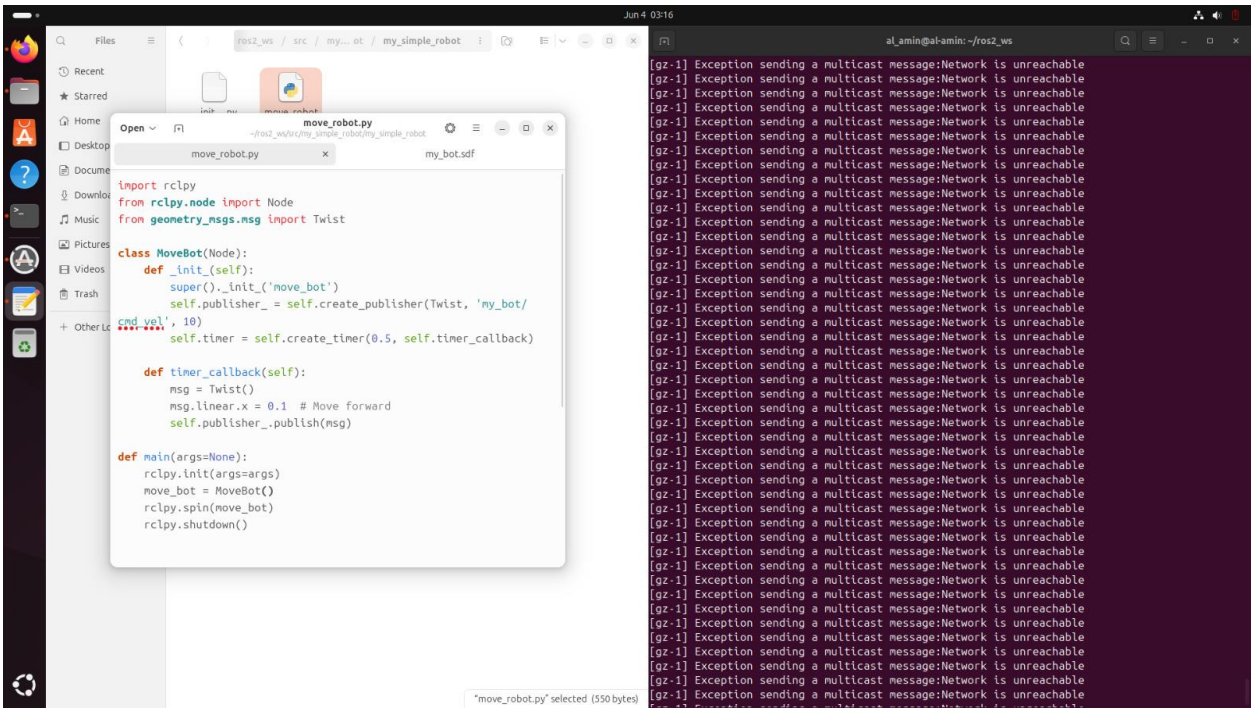
ROS2 publisher-subscriber communication.



Conclusion

In this task, I learned how ROS2 interacts with Gazebo using the ros_gz_bridge and simulation launch files. I now understand the process of writing a robot SDF file, spawning the model, and sending motion commands using a Python node. I faced some small errors with node initialization and SDF material, but I fixed those and everything worked fine in the end. This project helped me understand the complete flow of robot simulation in ROS2.