MRT Software Subsystem Induction Assignment - 3

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Exercise 1

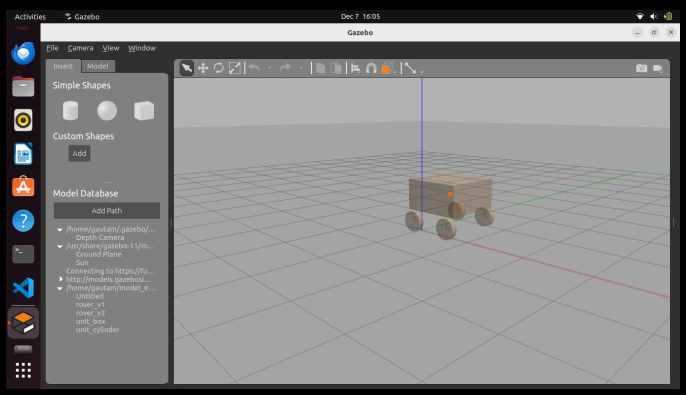


Figure 1: Basic modelling

- Took a while to figure out where to find the model editor since its not turned on by default.
- I have used all the basic 3-D modelling tools. Used a rectangle of dimensions : $1m$ x $1m$ x $0.52m$ for the main body.
- The wheels have a radius of $0.175m$ and a length of $0.1m$.

Exercise 2 and 3

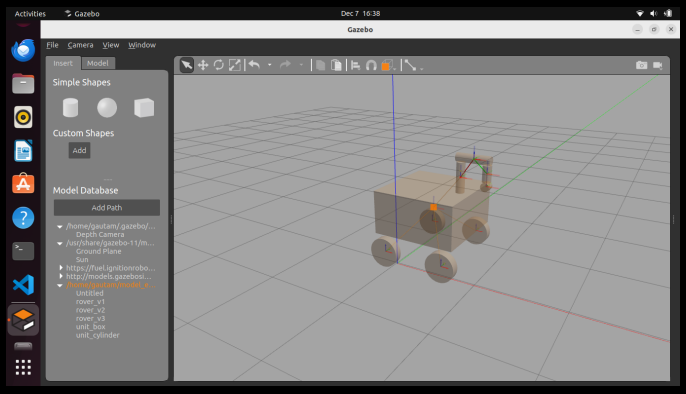


Figure 2: Rover with arm and joints.

- Only issue was that Gazebo would just crash sometimes.
- Arm has a length of $0.35m$ and a radius of $0.05m$.
- Added 2 revolute joints and 1 prismatic joint as per the drawing in the problem statement.

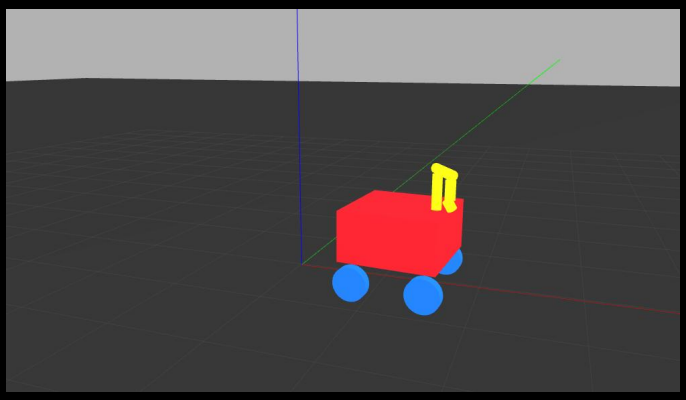
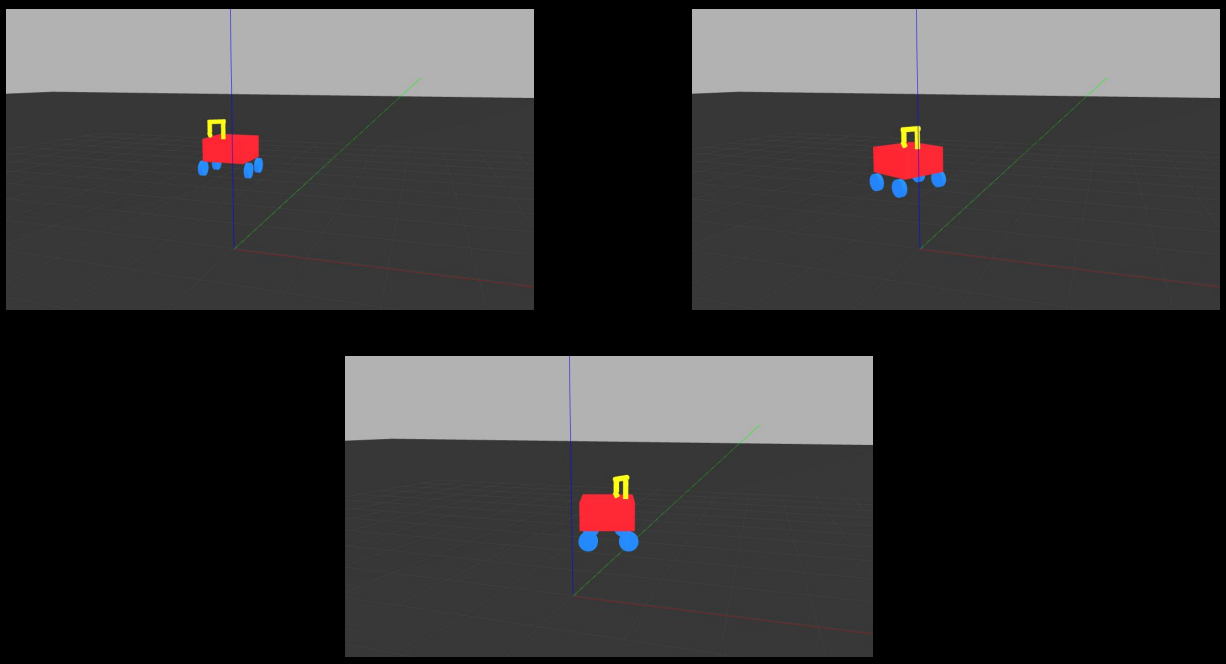


Figure 3: Added color.

Exercise 4

- Added differential drive (only for front two wheels, it doesn't work for some reason for all four) and made the launch file.
- Most of the issues were here. The code for making the launch file needed a lot of information from various sources.
- But now it finally works and moves.



Pictures of its movement.

Common errors

Most of the common errors I had were part of creating the ROS-Gazebo integration through the plug-in. Sometimes it didn't publish to the ROS2 Topic but most of these I could fix by re-building the file by deleting the build, log and install files of the previous build.