SLAM on a Drone

Installing cartographer package(s) on ROS Noetic, Ubuntu 20.04 focal fossa for the '*SLAM on a drone*' project: -
Followed directions from -
https://google-cartographer-ros.readthedocs.io/en/latest/compilation.html
Trailing from the following links,

1. https://www.google.com/search?q=cartographer+for+ros+noetic&oq=cartographer+for+ros+noetic&aqs=chrome..69i57.7201j0j1&sourceid=chrome&ie=UTF-8
2. https://answers.ros.org/question/365117/is-it-possible-to-use-google-cartographer-with-ros-noetic/

3. Faced an issue while installing the dependencies using *rosdep*, one of the dependencies wasn't released for ubuntu focal, and hence had to be commented out in the ***<your_workspace>/src/cartographer_ros/package.xml file***
4. Follow the next installation steps from : https://google-cartographer-ros.readthedocs.io/en/latest/compilation.html
5. Cloned the gbot_core pkg git from https://github.com/Andrew-rw/gbot_core in a **separate workspace.**
6. The gbot_core pkg runs with rplidar, whereas our project has robotis lds lidar. The drivers will be available on https://emanual.robotis.com/docs/en/platform/turtlebot3/sbc_setup/#sbc-setu
   Follow only the steps relevant to installing the driver (fig. 2): -

```
$ sudo apt update
$ sudo apt install libudev-dev
$ cd ~/catkin_ws/src
$ git clone -b develop https://github.com/ROBOTIS-GIT/ld08_driver.git
```

Fig. 2: Steps for installing the **lidar drivers (ld08).**

After this, the mapping started working, and the map could be visualized on rviz, upon adding the plugins: -

1. Map (Occupancy grid map)
2. PointCloud2
3. Robot model.

Make sure to modify the points from PointCloud2 to make them adeqSuately visible.