**Ivdc ps3**

**Ps based on ros**

**Robot description**

**Task1:**

The given robot is using a Velodyne LIDAR sensor. LIDAR stands for Laser Imaging Detection And Ranging. So basically the given robot is using the LIDAR to know its surroundings.

It also has IMU sensor (like gyroscope,accelerometer,etc) as it has topic dealing with position like imu0.

Task2:

rqt\_graph is the command used to display rqt\_graph. Roscore and associated ros nodes must be launched using smb\_gazebo.launch launch file.

The output has been attached outside the file named as rqt\_graph.

Task3:

$rosnode list is the command used to list all active ros nodes

$rostopic list is used to list all active ros topics

$rostopic info can be used to know about the topic connections with various nodes

$rostopic echo is used to display the messages sent via a topic onto the screen

Other than these a lot of other changes were necessary in the CMakeLists.txt file and package.xml filefor the process to run smoothly.

The node was successfully made into executable by these steps. Finally the target controller was built.

We used it to run the controller node eventhough proper control of the bot to go as destined was not achieved.

TASK4:

The cmd\_vel topic is used to control speed.

TASK5:

Twist type of geometry\_msgs