

4th task

TASK:

Using SLAM map to launch the navigation

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Steps:

First I Launch the Gazebo environment

```
> $ export TURTLEBOT3_MODEL=burger  
> $ roslaunch turtlebot3_gazebo turtlebot3_house.launch
```

then Run Navigation Node:

```
> $ export TURTLEBOT3_MODEL=burger  
> $ roslaunch turtlebot3_navigation turtlebot3_navigation.launch map_file:=$HOME/map.yaml
```

After running the navigation node I Estimating the Initial Pose by Clicking the **2D Pose** Estimate button in the RViz menu, Then I located and dragged the large arrow many times until the LDS sensor data is overlayed on the saved map.

And now I Launch the keyboard teleoperation node:

```
> $ roslaunch turtlebot3_teleop turtlebot3_teleop_key.launch
```

Then Set Navigation Goal by

Clicking the **2D Nav** Goal button in the RViz menu, then I Clicked on the map to set the destination of the robot and drag the arrow toward the direction where the robot will be facing.

Results:

