\ sudo apt-get install ros-noetic-joy ros-noetic-teleop-twist-joy $

\ ros-kinetic-teleop-twist-keyboard ros-noetic-laser-proc

\ ros- kinetic -rgbd-launch ros-noetic-rosserial-arduino

\ ros- kinetic -rosserial-python ros-noetic-rosserial-client

\ ros- kinetic -rosserial-msgs ros-noetic-amcl ros-noetic-map-server

\ ros- kinetic -move-base ros-noetic-urdf ros-noetic-xacro

\ ros- kinetic -compressed-image-transport ros- kinetic -rqt* ros kinetic -rviz

ros- kinetic -gmapping ros-noetic-navigation ros- kinetic -interactive-markers

sudo apt install ros- kinetic -hls-lfcd-lds-driver$

sudo apt install ros- kinetic -dynamixel-sdk $

sudo apt install ros- kinetic -turtlebot3-msgs $

mkdir -p ~/catkin_ws/src $

cd catkin_ws/src$

git clone -b kinetic -devel https://github.com/ROBOTIS-GIT/turtlebot3.get$

git clone -b kinetic -devel https://github.com/ROBOTIS-GIT/turtlebot3_simulations$

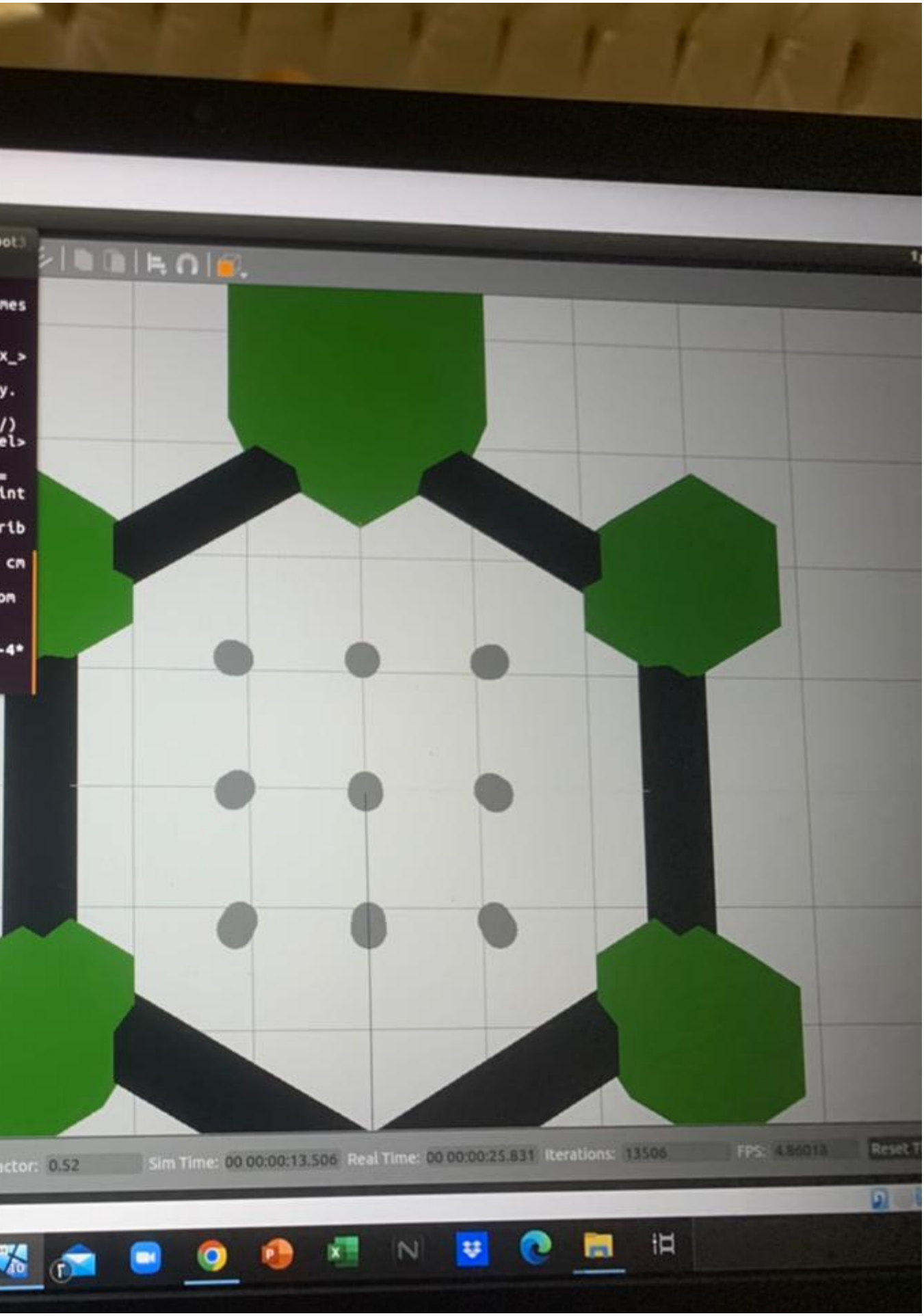
cd ~/catkin_ws &&catkin_make$

export TURTLEBOT3_MODEL=burger $

roslaunch turtlebot3_gazebo turtlebot3_world.launch $

export TURTLEBOT3_MODEL=burger$

roslaunch turtlebot3_teleop turtlebot3_teleop_key.launch$


Sim Time: 00 00:00:13.506
Real Time: 00 00:00:25.831
Iterations: 13506

export TURTLEBOT3_MODEL=burger $

roslaunch turtlebot3_gazebo turtlebot3_world.launch $

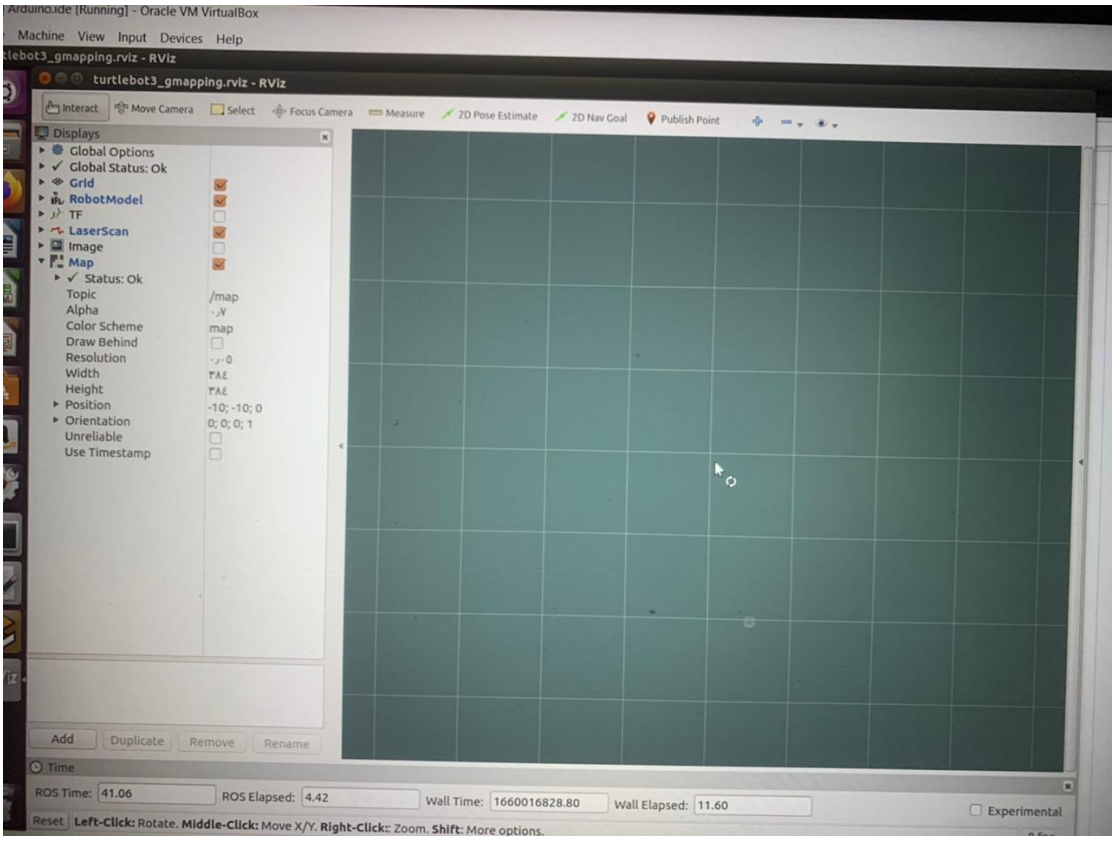
export TURTLEBOT3_MODEL=burger $

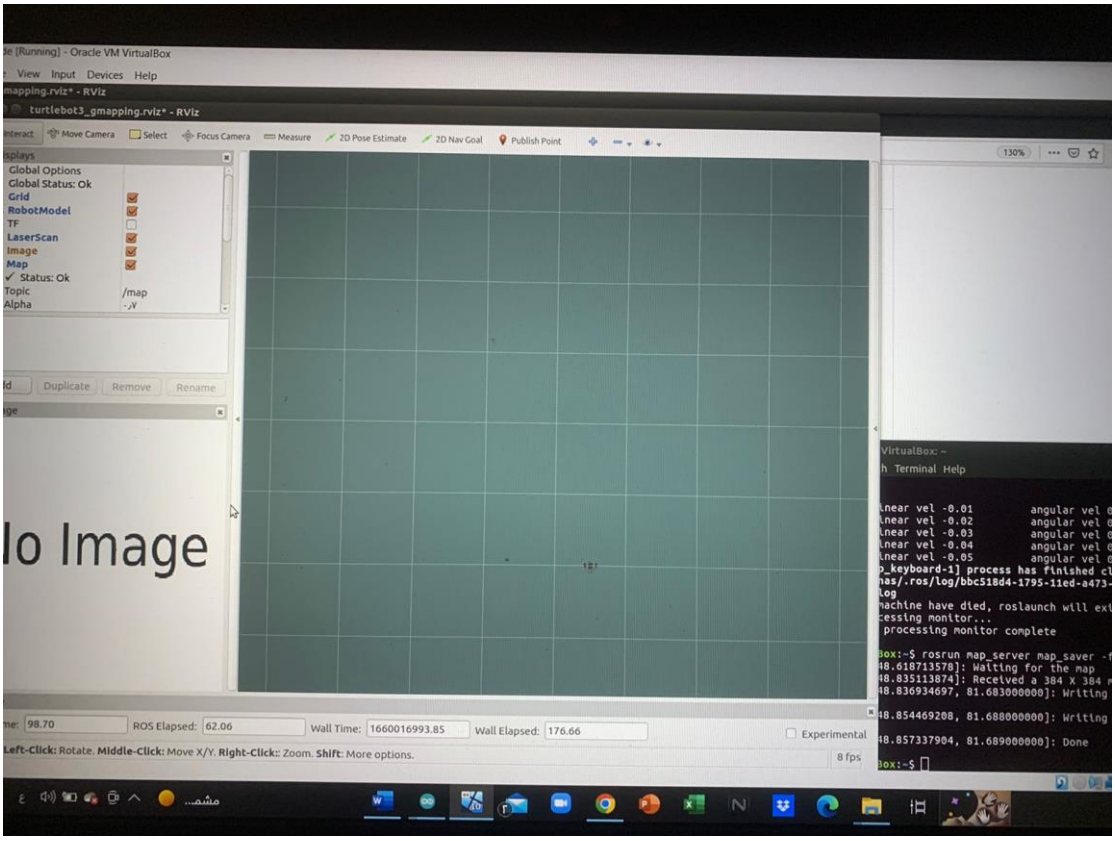
roslaunch turtlebot3_slam turtlebot3_slam.launch slam_methods:=gmapping $

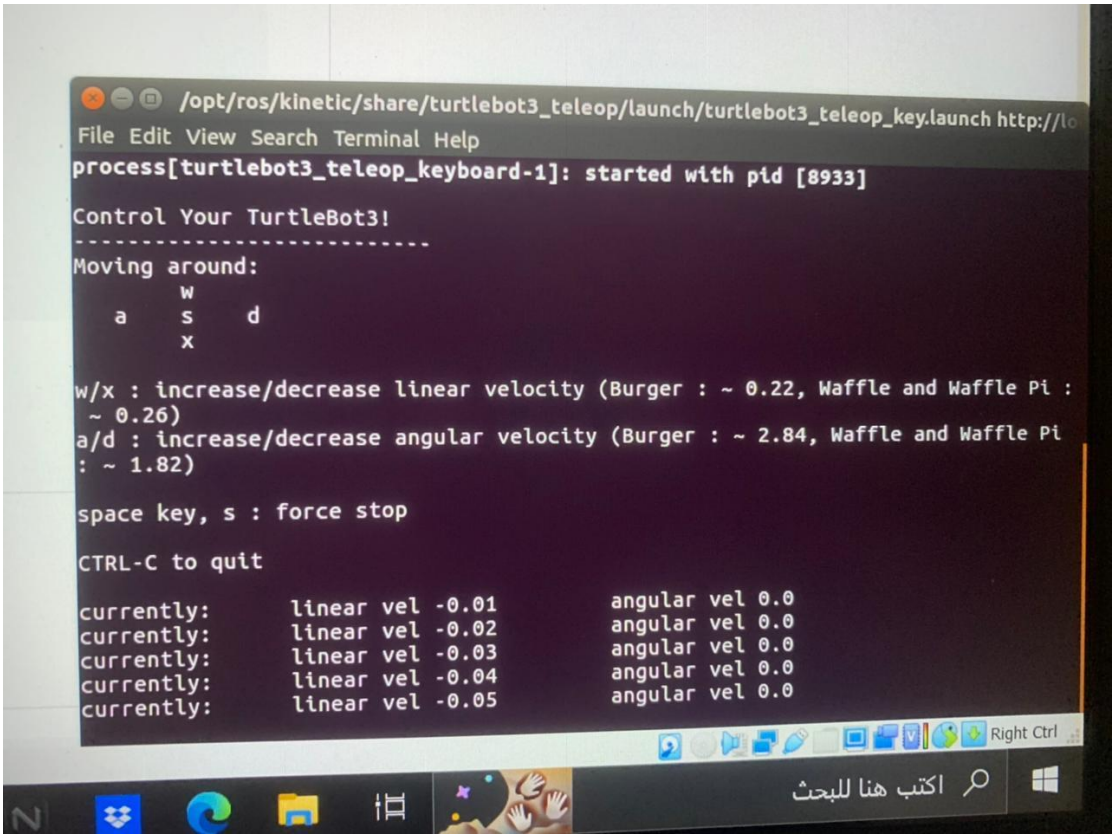
export TURTLEBOT3_MODEL=burger $

roslaunch turtlebot3_teleop turtlebot3_teleop_key.launch$

rosrun map_server map_saver -f ~/map $




[Running] - Oracle VM VirtualBox
View Input Devices Help
mapping.rviz* - RViz
turtlebot3_gmapping.rviz* - RViz
Move Camera
Select
Focus Camera
Measure
2D Pose Estimate
2D Nav Goal
Publish Point
Global Options
Global Status: Ok
Grid
RobotModel
TF
LaserScan
Image
Map
Status: Ok
Topic
/map
Alpha
Duplicate
Remove
Rename
lo Image
98.70
ROS Elapsed:
62.06
Wall Time:
1660016993.85
Wall Elapsed:
176.66
Experimental
Left-Click: Rotate. Middle-Click: Move X/Y. Right-Click:: Zoom. Shift: More options.
8 fps
VirtualBox: ~
Terminal Help
linear vel -0.01
linear vel -0.02
linear vel -0.03
linear vel -0.04
linear vel -0.05
machine have died, roslaunch will ex
cessing monitor...
processing monitor complete
box:~$ rosrun map_saver
48.618713578]: Waiting for the map
48.835113874]: Received a 384 X 384
48.836934697, 81.683000000]: Writing
48.854469208, 81.688000000]: Writing
48.857337904, 81.689000000]: Done
box:~$

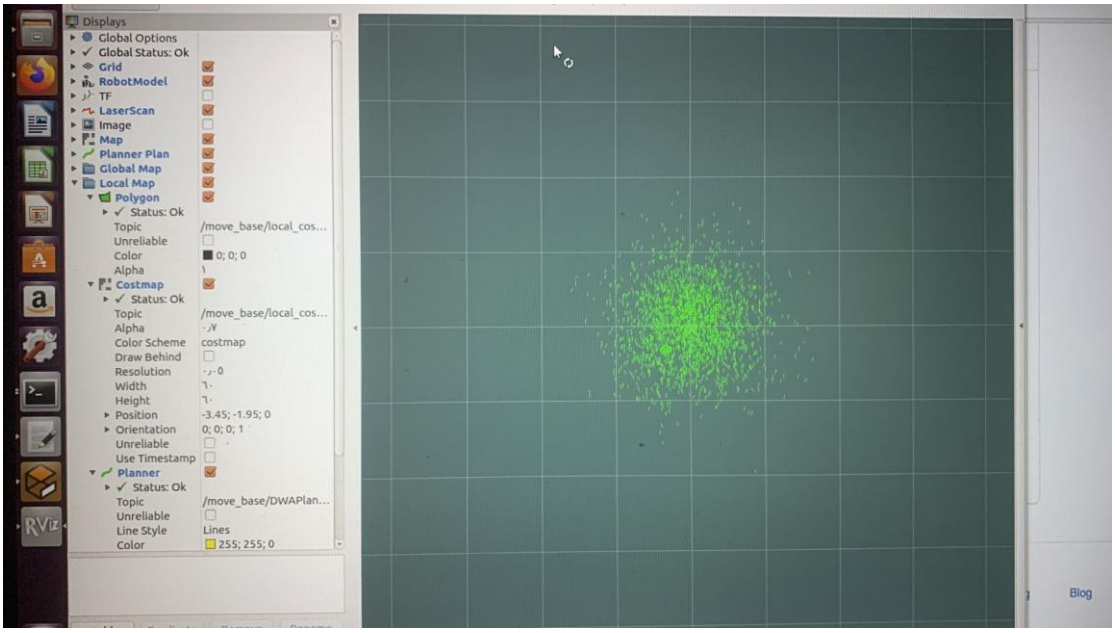


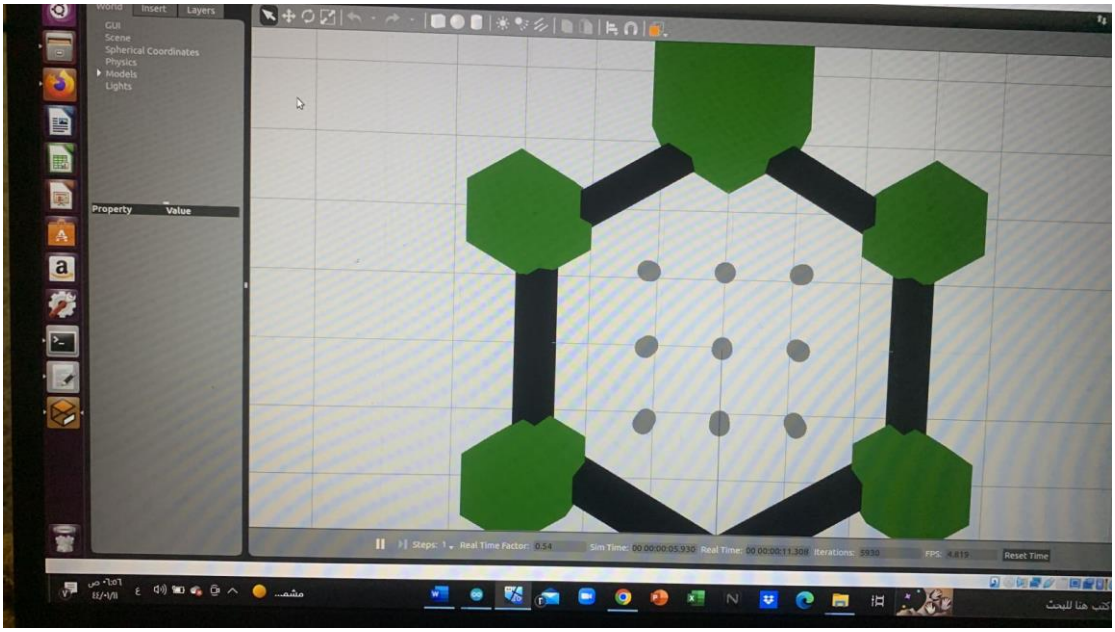
export TURTLEBOT3_MODEL=burger $

roslaunch turtlebot3_gazebo turtlebot3_world.launch $

export TURTLEBOT3_MODEL=burger $

roslaunch turtlebot3_navigation turtlebot3_navigation.launch $
map_file:=$HOME/map.yaml




World
Insert
Layers
GUI
Scene
Spherical Coordinates
Physics
Models
Lights
Property
Value
Steps: 1
Real Time Factor: 0.54
Sim Time: 00 00:00:05.930
Real Time: 00 00:00:11.308
Iterations: 5930
FPS: 4.819
Reset Time