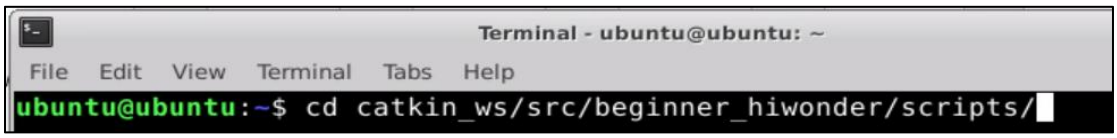
Lesson 6 Write A Simple Subscriber

The creation of subscriber is based on the edited publisher. The subscription are only possible as long as the message is published. If you have not edited the publisher, you can view the content in “Lesson 4 Write A Simple Subscriber” and follow the steps to edit it.

1. Write Subscriber Node

This section takes the creation of a pose_subscriber.py node as an example to explain.

1) Input “cd catkin_ws/src/beginner_hiwonder/scripts/” command and press “Enter”.



2) Enter “vi pose_subscriber.py” command to edit the program, and then copy the following program. If need to modify, press “i”. After modifying, press “Esc” and input “:wq” to save and exit.


```
#!/usr/bin/env python

# -*- coding: utf-8 -*-



import rospy

from turtlesim.msg import Pose
```

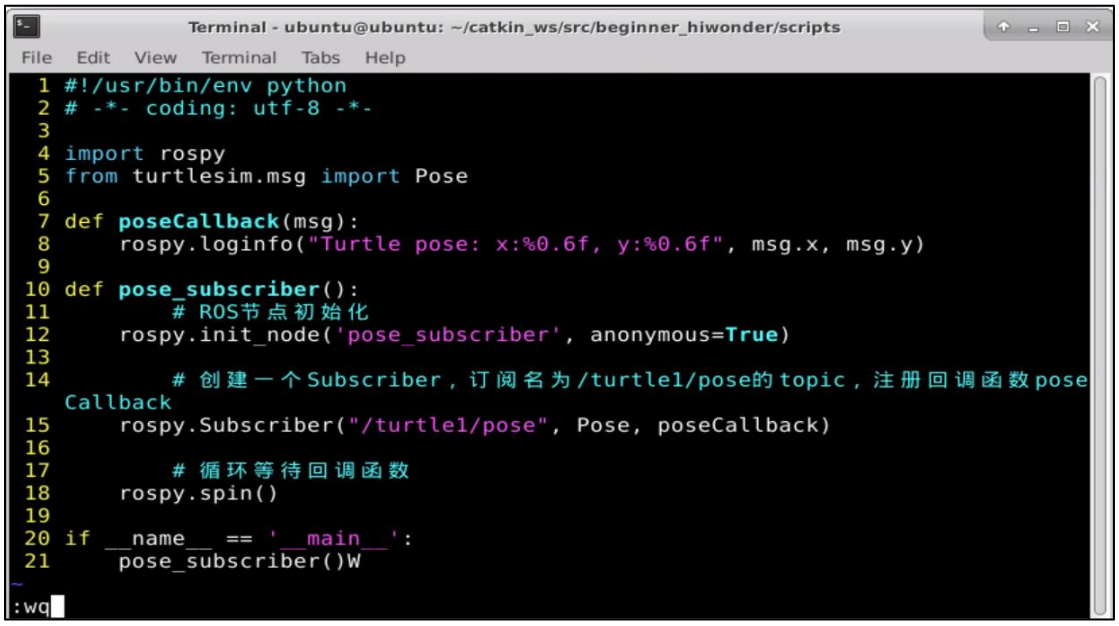
```
    def poseCallback(msg):
        rospy.loginfo("Turtle pose: x:%0.6f, y:%0.6f", msg.x, msg.y)

    def pose_subscriber():
        # Initialize ROS node
        rospy.init_node('pose_subscriber', anonymous=True)

        # Create a subsriber, subscribe to the topic named /turtle1/pose, and register callback function poseCallback rospy.Subscriber("/turtle1/pose", Pose, poseCallback)

        # Loop and wait callback function
        rospy.spin()

    if __name__ == '__main__':
        pose_subscriber()
```

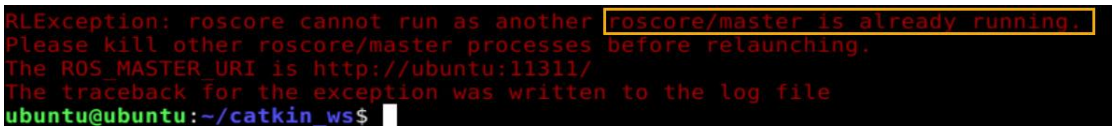


3) Input “chmod +x pose_subscriber.py” command and press “Enter” to give the executable permission to saved pose_subscriber.py.

2. Test Publisher and Subscriber

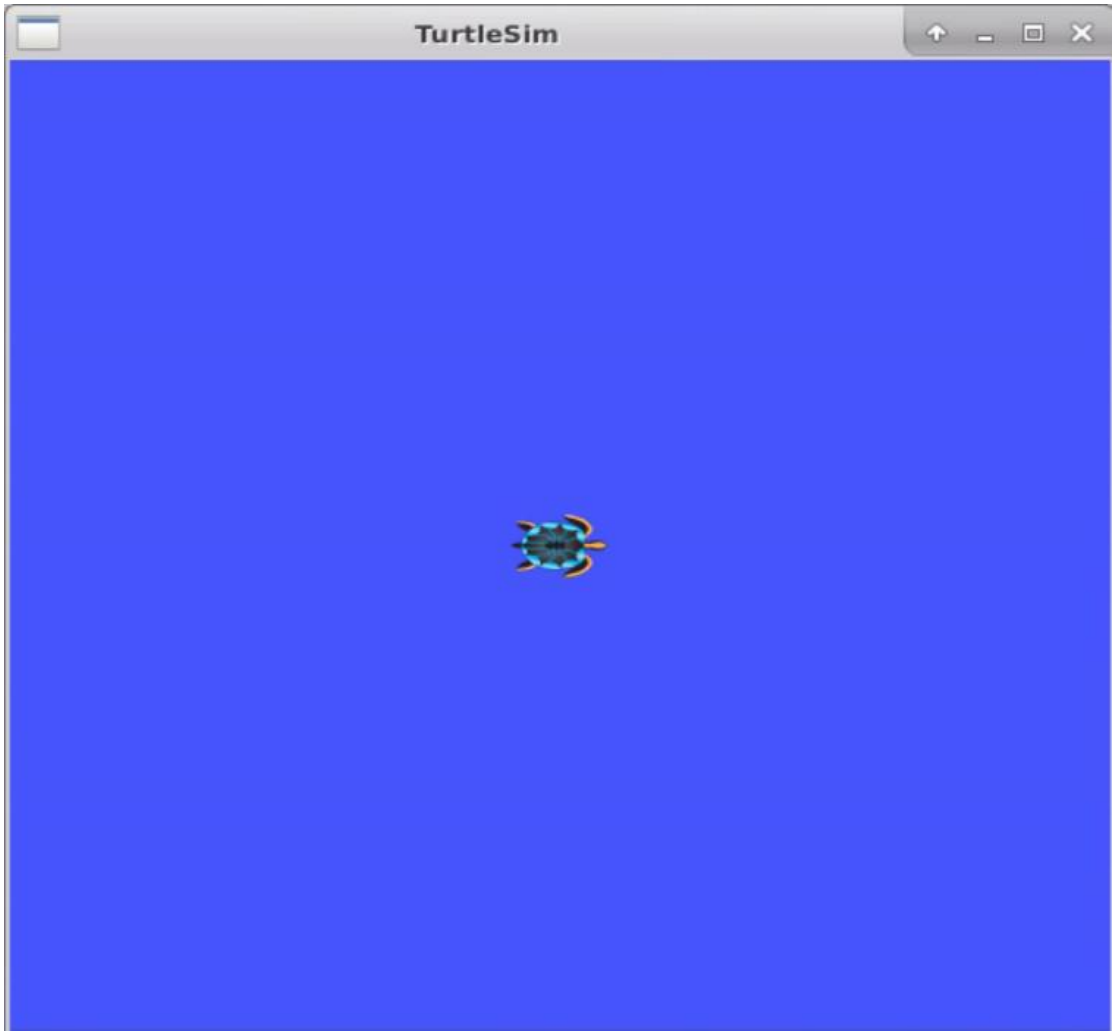
1) Input “roscore” command to start the node manager.

After starting, the following prompt will appear:

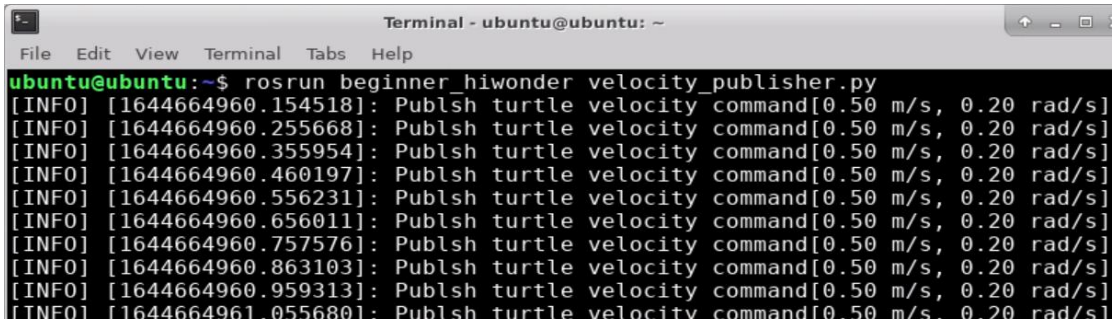


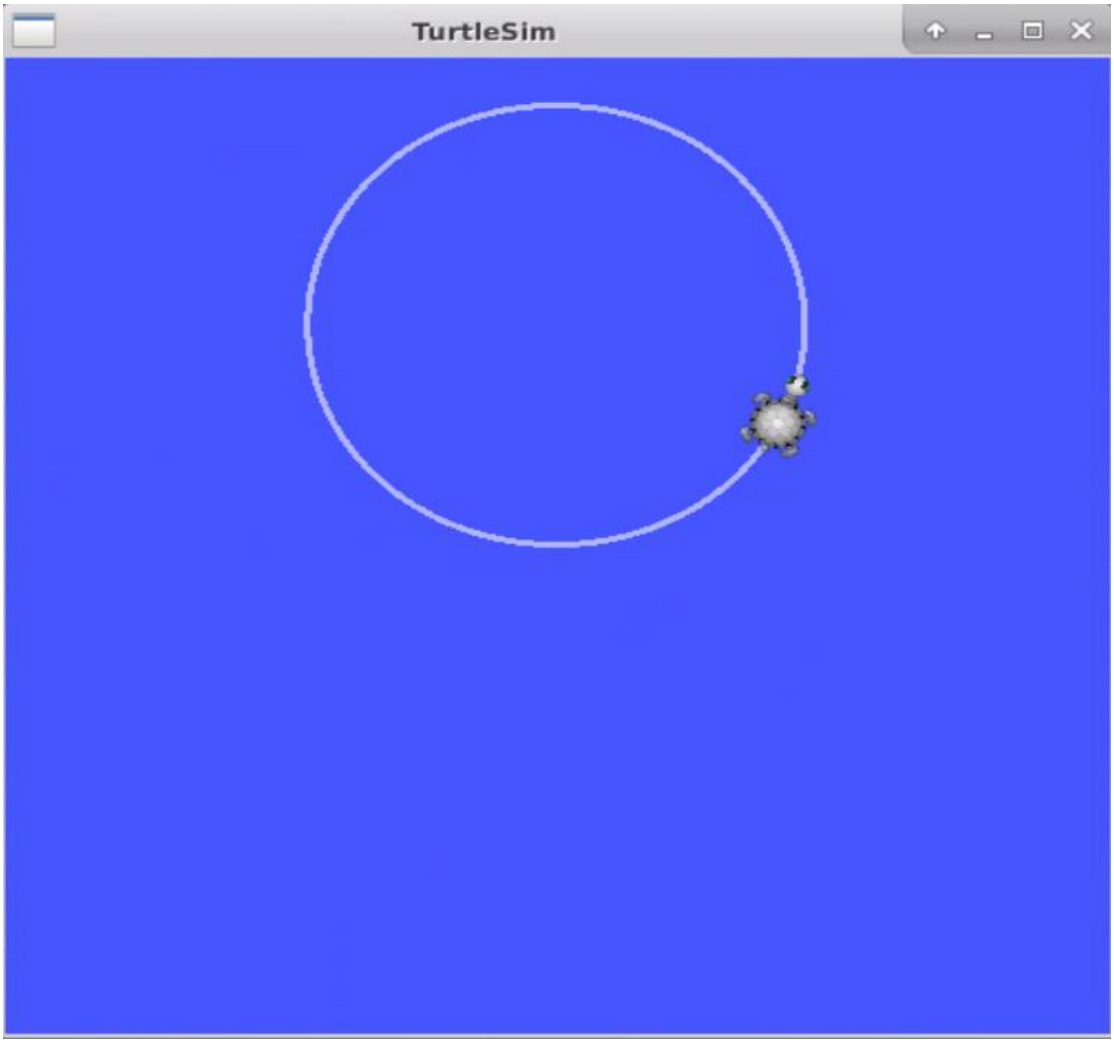
Input “rosrun turtlesim turtlesim_node” command and then press “Enter” to start TurtleSim.

```
ubuntu@ubuntu:~/catkin_ws$ rosrun turtlesim turtlesim_node
libEGL warning: DRI2: failed to authenticate
[ INFO] [1644663888.439197118]: Starting turtlesim with node name /turtlesim
[ INFO] [1644663888.462207665]: Spawning turtle [turtle1] at x=[5.544445], y=[5.
544445], theta=[0.000000]
```



Open a new terminal and enter “rosrun beginner_hiwonder velocity_publisher.py” command to run the publisher of velocity_publisher.py. Then press “Ctrl+C” to stop running the publisher node.





Open a new terminal and input “rosrun beginner_hiwonder pose_subscriber.py” command to run the subscriber of pose_subscriber.py Then press “Ctrl+C” to stop running the subscribe node.

---

① The publisher node needs to be started first, and then the subscriber node can subscribe message.

② If need to receive the publisher messages completely, you can start the subscriber node first and then the publisher node.
