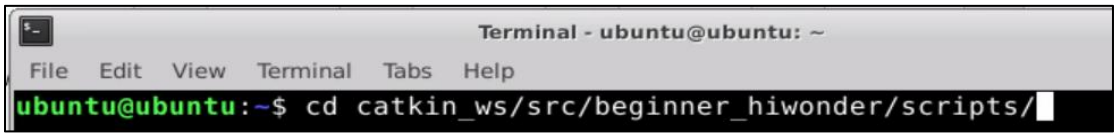
Lesson 9 Write A Simple Server

1. Create Service Code

Note: Before creating service code, you need to create workspace and package first. The specific operation steps can be viewed in file “ROS Basic Lessons->Lesson 3 Create Workspace and Package”.

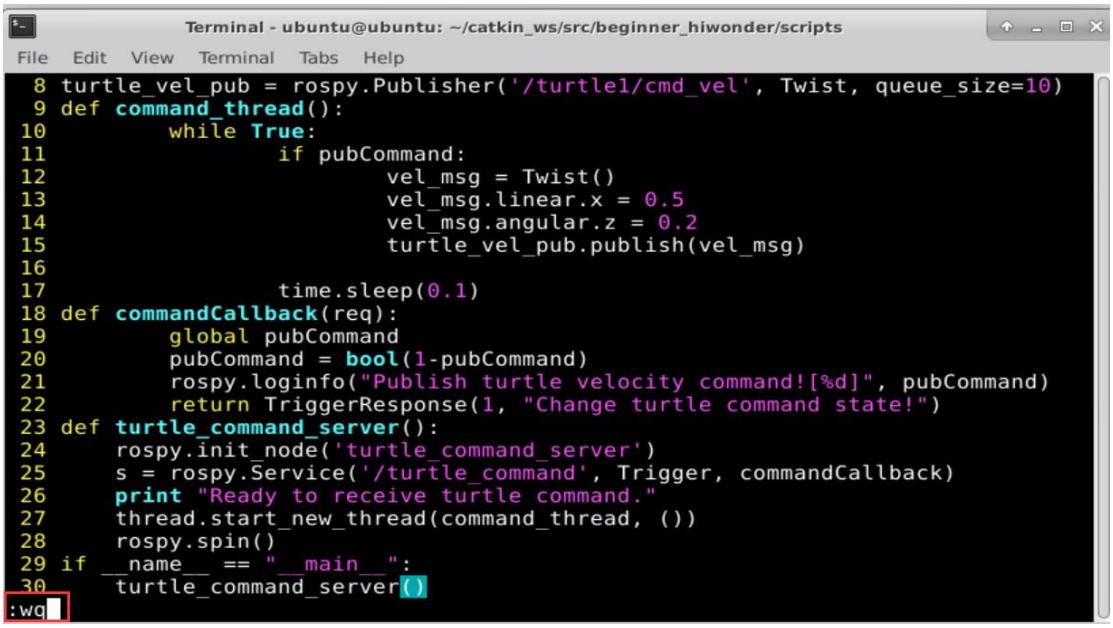
1) Enter “**cd catkin_ws/src/beginner_hiwonder/scripts/**” command and press “Enter”.



2) Enter “vi turtle_command_server.py” command to edit program and copy the following program. If want to modify, you can press “i”. After modifying, press “Esc” and enter “:wq” to save and exit.


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

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

import rospy

import thread,time

from geometry_msgs.msg import Twist

from std_srvs.srv import Trigger, TriggerResponse

pubCommand = False;

turtle_vel_pub = rospy.Publisher('/turtle1/cmd_vel', Twist, queue_size=10)

def command_thread():
```

```
        while True:
            if pubCommand:
                vel_msg = Twist()
                vel_msg.linear.x = 0.5
                vel_msg.angular.z = 0.2
                turtle_vel_pub.publish(vel_msg)

            time.sleep(0.1)
    def commandCallback(req):
        global pubCommand
        pubCommand = bool(1-pubCommand)
        rospy.loginfo("Publish turtle velocity command![%d]", pubCommand)
        return TriggerResponse(1, "Change turtle command state!")
    def turtle_command_server():
        rospy.init_node('turtle_command_server')
        s = rospy.Service('/turtle_command', Trigger, commandCallback)
        print "Ready to receive turtle command."
        thread.start_new_thread(command_thread, ())
        rospy.spin()
    if __name__ == "__main__":
        turtle_command_server()
```



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

2. Run Server Node

1) Enter “roscore” command to start node manager.

2) Enter “rosrun turtlesim turtlesim_node” command and press “Enter” to start turtlesim simulator window.

3) Open a new terminal. Then enter “rosrun beginner_hiwonder turtle_command_server.py” and press “Enter” to run service node. If need

to stop running the node, you can press “Ctrl+C”.

4) Open a new terminal again. Enter “rosservice call /turtle_command "{}"” command and press “Enter” to move the turtle along the circular path.