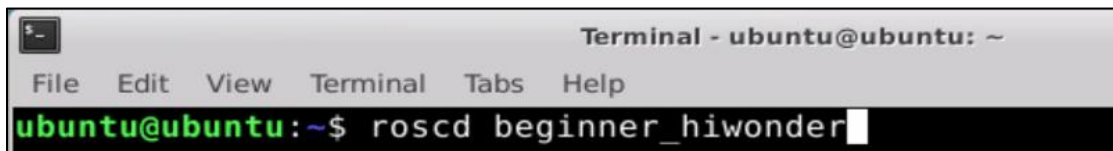


Lesson 5 Write A Simple Publisher

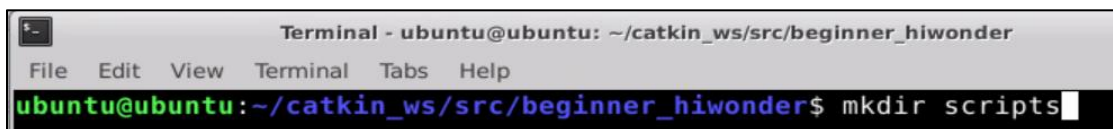
This section takes the creation of a velocity_publisher.py publisher node as an example to explain.

- 1) Input “roscd beginner_hiwonder” command and press “Enter” to enter beginner_hiwonder software package.



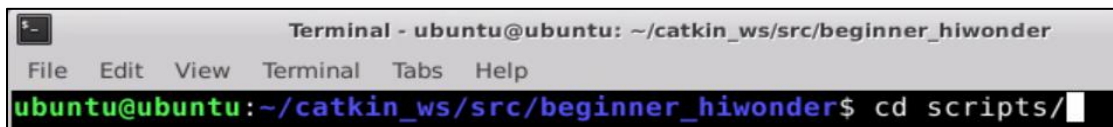
```
Terminal - ubuntu@ubuntu: ~
File Edit View Terminal Tabs Help
ubuntu@ubuntu:~$ roscd beginner_hiwonder
```

- 2) Input “mkdir scripts” command and press “Enter” to create a new scripts directory to store Python scripts.



```
Terminal - ubuntu@ubuntu: ~/catkin_ws/src/beginner_hiwonder
File Edit View Terminal Tabs Help
ubuntu@ubuntu:~/catkin_ws/src/beginner_hiwonder$ mkdir scripts
```

- 3) Input “cd scripts/” command and press “Enter”.



```
Terminal - ubuntu@ubuntu: ~/catkin_ws/src/beginner_hiwonder
File Edit View Terminal Tabs Help
ubuntu@ubuntu:~/catkin_ws/src/beginner_hiwonder$ cd scripts/
```

- 4) Input “vi velocity_publisher.py” command to edit program, and then copy the following program. If need to modify, you can press “i” again. After modifying, press “Esc” and input “:wq” to save and exit the file.



```
Terminal - ubuntu@ubuntu: ~/catkin_ws/src/beginner_hiwonder/scripts
File Edit View Terminal Tabs Help
ubuntu@ubuntu:~/catkin_ws/src/beginner_hiwonder/scripts$ vi velocity_publisher.py
```

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

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

```
#Publish this routine to the topic turtle1/cmd_vel, the type of message geometry_msgs::Twist
```

```
import rospy

from geometry_msgs.msg import Twist

def velocity_publisher():

    # Initialize ROS node

    rospy.init_node('velocity_publisher', anonymous=True)

    # Create a Publisher and publish a topic named /turtle1/cmd_vel. The type of message is
geometry_msgs::Twist and the queue size is 10.

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

    #set the loop rate

    rate = rospy.Rate(10)

    while not rospy.is_shutdown():

        # Initialize the message of geometry_msgs::Twist type

        vel_msg = Twist()

        vel_msg.linear.x = 0.5

        vel_msg.angular.z = 0.2

        # Publish message
```

```

turtle_vel_pub.publish(vel_msg)

rospy.loginfo("Publsh turtle velocity command[%0.2f m/s, %0.2f rad/s]",

              vel_msg.linear.x, vel_msg.angular.z)


# Delay on the basis of loop rate

rate.sleep()


if __name__ == '__main__':

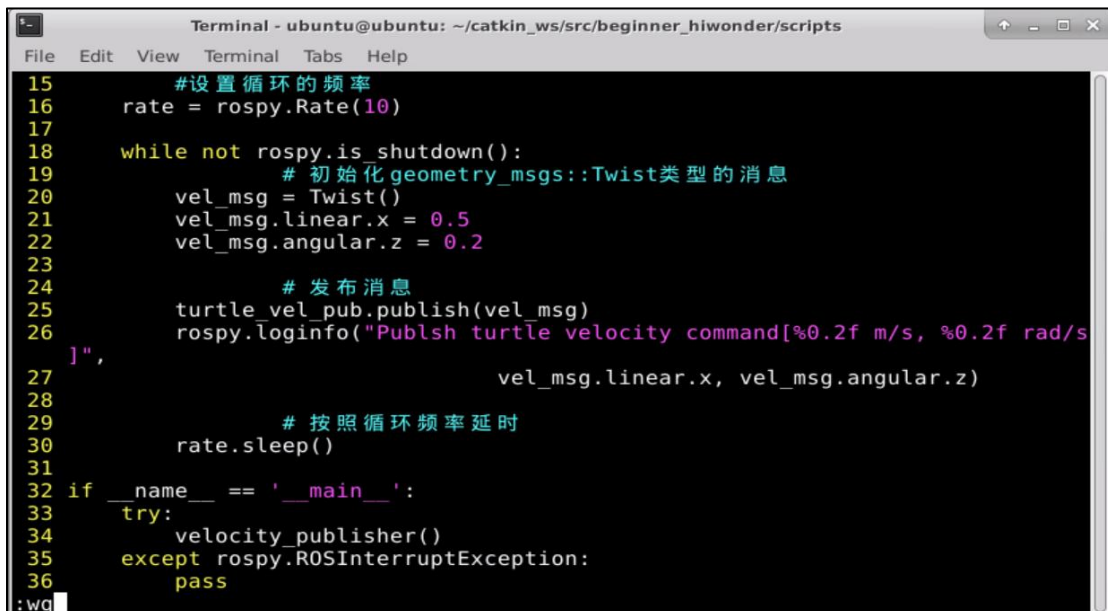
    try:

        velocity_publisher()

    except rospy.ROSInterruptException:

        pass

```



```

15 #设置循环的频率
16 rate = rospy.Rate(10)
17
18 while not rospy.is_shutdown():
19     # 初始化 geometry_msgs::Twist类型的消息
20     vel_msg = Twist()
21     vel_msg.linear.x = 0.5
22     vel_msg.angular.z = 0.2
23
24     # 发布消息
25     turtle_vel_pub.publish(vel_msg)
26     rospy.loginfo("Publsh turtle velocity command[%0.2f m/s, %0.2f rad/s",
27                  vel_msg.linear.x, vel_msg.angular.z)
28
29     # 按照循环频率延时
30     rate.sleep()
31
32 if __name__ == '__main__':
33     try:
34         velocity_publisher()
35     except rospy.ROSInterruptException:
36         pass
:wq

```

- 5) Input command “**chmod +x velocity_publisher.py**” to give executable permissions to the saved velocity_publisher.py.

A screenshot of a terminal window titled "Terminal - ubuntu@ubuntu: ~/catkin_ws/src/beginner_hiwonder/scripts". The terminal shows the command "chmod +x velocity_publisher.py" being entered at the prompt "ubuntu@ubuntu:~/catkin_ws/src/beginner_hiwonder/scripts\$".

```
Terminal - ubuntu@ubuntu: ~/catkin_ws/src/beginner_hiwonder/scripts
File Edit View Terminal Tabs Help
ubuntu@ubuntu:~/catkin_ws/src/beginner_hiwonder/scripts$ chmod +x velocity_publisher.py
```

6) The publisher editing is complete.