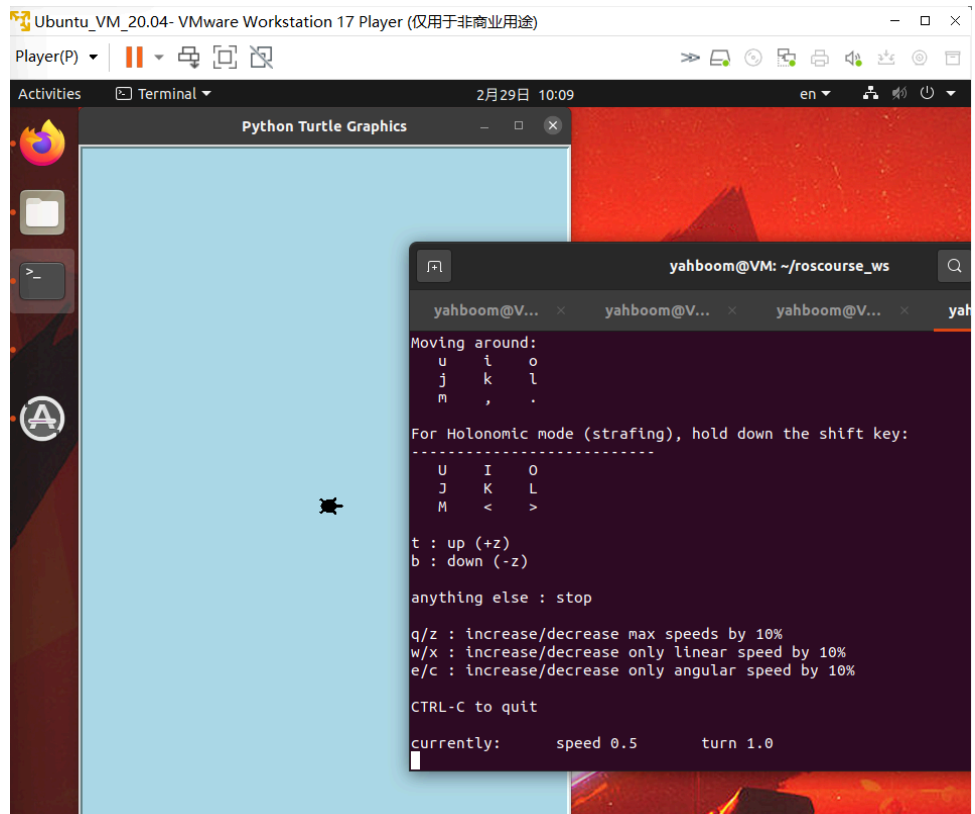


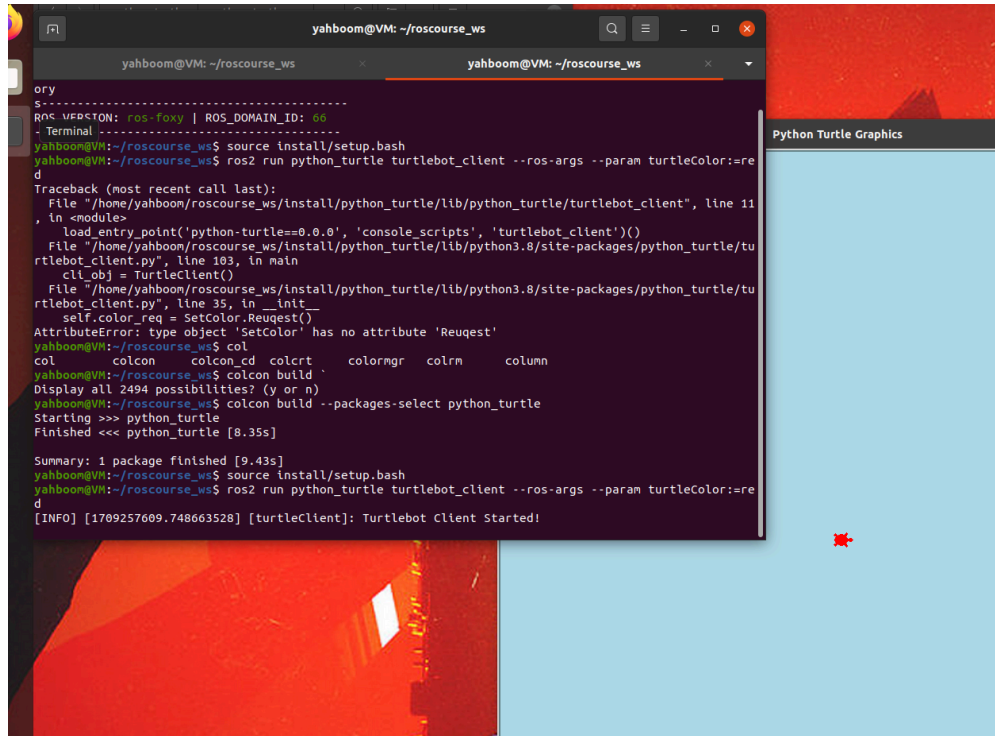
TASK1 STEP 17:



TASK2 EDITED CODE:

```
15
16 class TurtleClient(Node):
17     def __init__(self):
18         super().__init__('turtleClient')
19         self.declare_parameter(
20             'penSize',
21             1, # Default pen size
22             ParameterDescriptor(description='Initial pen size for the turtle. Determines the
23                                     thickness of the line the turtle draws.')
24         )
25         penSize = self.get_parameter('penSize').get_parameter_value().integer_value
26         self.turtle_display.pensize(penSize)
27         #####set pen size here#####
28         self.declare_parameter('turtleColor', 'black',
29                                 ParameterDescriptor(description= 'turtle color'))
30         ##### Display/Turtle Setup #####
31         self.screen = turtle.Screen()
```

TASK2 STEP 12:

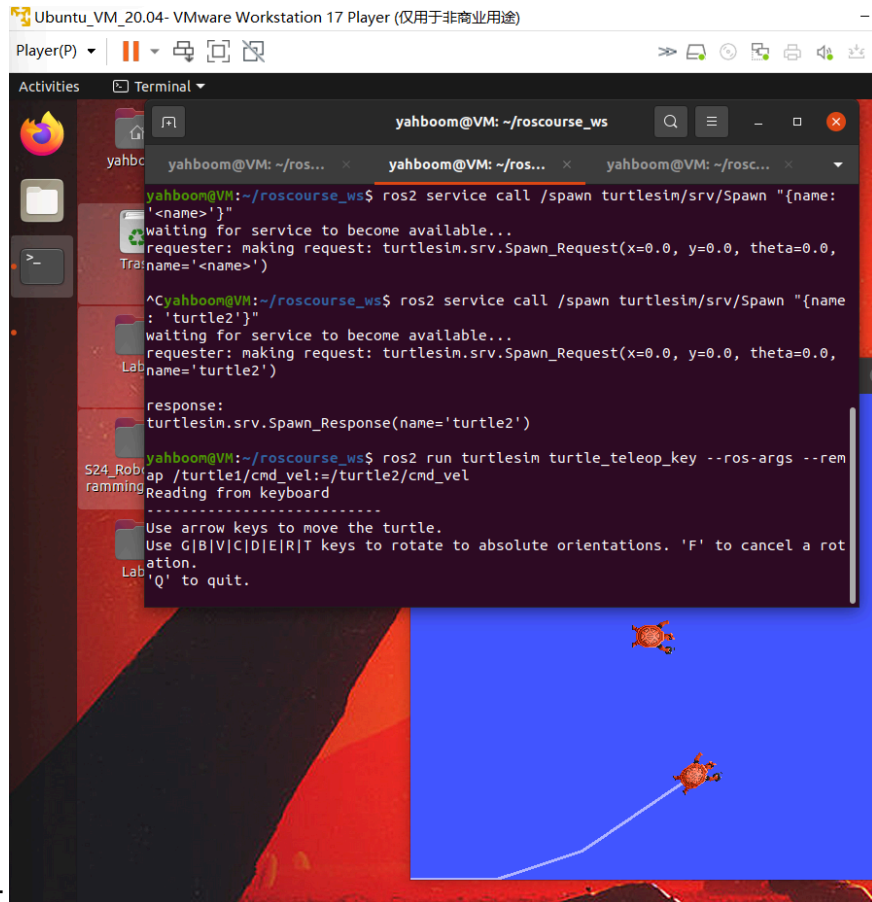


The screenshot shows a terminal window and a graphics window. The terminal window is titled 'yahboom@VM: ~/roscourse_ws' and contains the following text:

```
ory
s-----
ROS VERSION: ros-foxy | ROS_DOMAIN_ID: 66
Terminal
yahboom@VM:~/roscourse_ws$ source install/setup.bash
yahboom@VM:~/roscourse_ws$ ros2 run python_turtle turtlebot_client --ros-args --param turtleColor:=red
Traceback (most recent call last):
  File "/home/yahboom/roscourse_ws/install/python_turtle/lib/python_turtle/turtlebot_client", line 11
    , in <module>
      load_entry_point('python-turtle==0.0.0', 'console_scripts', 'turtlebot_client')()
  File "/home/yahboom/roscourse_ws/install/python_turtle/lib/python3.8/site-packages/python_turtle/turtlebot_client.py", line 103, in main
    cli_obj = TurtleClient()
  File "/home/yahboom/roscourse_ws/install/python_turtle/lib/python3.8/site-packages/python_turtle/turtlebot_client.py", line 35, in __init__
    self.color_req = SetColor.Request()
AttributeError: type object 'SetColor' has no attribute 'Request'
yahboom@VM:~/roscourse_ws$ col
col      colcon      colcon_cd  colcrt      colormgr  colrm      column
yahboom@VM:~/roscourse_ws$ colcon build
Display all 2494 possibilities? (y or n)
yahboom@VM:~/roscourse_ws$ colcon build --packages-select python_turtle
Starting >>> python_turtle
Finished <<< python_turtle [8.35s]

Summary: 1 package finished [9.43s]
yahboom@VM:~/roscourse_ws$ source install/setup.bash
yahboom@VM:~/roscourse_ws$ ros2 run python_turtle turtlebot_client --ros-args --param turtleColor:=red
[INFO] [1709257609.748663528] [turtleClient]: Turtlebot Client Started!
```

The graphics window is titled 'Python Turtle Graphics' and shows a blue background with a red crosshair. The background of the entire window is a red and orange abstract pattern.



task 4 step3: