

Task 2

Step 8 Output:

```
yahboom@VM:~/roscourse_ws$ colcon build --symlink-install
Starting >>> turtle_interfaces
Starting >>> webcam
Finished <<< webcam [0.92s]
Finished <<< turtle_interfaces [2.61s]
Starting >>> python_turtle
Finished <<< python_turtle [0.84s]

Summary: 3 packages finished [3.63s]
yahboom@VM:~/roscourse_ws$
```

Figure 1: colcon build --symlink-install output

Task 3

Step 22 Output:

```
yahboom@VM:~/roscourse_ws$ ros2 interface show turtle_interfaces/msg/TurtleMsg
string name
geometry_msgs/Pose turtle_pose
string color
yahboom@VM:~/roscourse_ws$ ros2 interface show turtle_interfaces/srv/SetPose
geometry_msgs/PoseStamped turtle_pose
---
int8 ret
yahboom@VM:~/roscourse_ws$ ros2 interface show turtle_interfaces/srv/SetColor
string color
---
int8 ret
yahboom@VM:~/roscourse_ws$
```

Figure 2: ros2 interface show turtle_interfaces/msg/TurtleMsg,
ros2 interface show turtle_interfaces/srv/SetPose,
ros2 interface show turtle_interfaces/srv/SetColor output respectfully.

Task 4

Step 7 Output:

```
-----  
ROS VERSION: ros-foxy | ROS_DOMAIN_ID: 66  
-----  
yahboom@VM:~/roscourse_ws/src/python_turtle$ source ~/roscourse_ws/install/setup.bash  
yahboom@VM:~/roscourse_ws/src/python_turtle$ ros2 run python_turtle turtlebot_server  
[INFO] [1739498444.576396213] [turtleServer]: Turtlebot server started!  
█
```

Figure 3: ros2 run python_turtle turtlebot_server terminal output

```
-----  
ROS VERSION: ros-foxy | ROS_DOMAIN_ID: 66  
-----  
yahboom@VM:~/roscourse_ws/src/python_turtle$ source ~/roscourse_ws/install/setup.bash  
yahboom@VM:~/roscourse_ws/src/python_turtle$ ros2 run python_turtle turtlebot_client  
[INFO] [1739498453.330787145] [turtleClient]: Turtlebot Client Started!
```

Figure 4: ros2 run python_turtle turtlebot_client terminal output

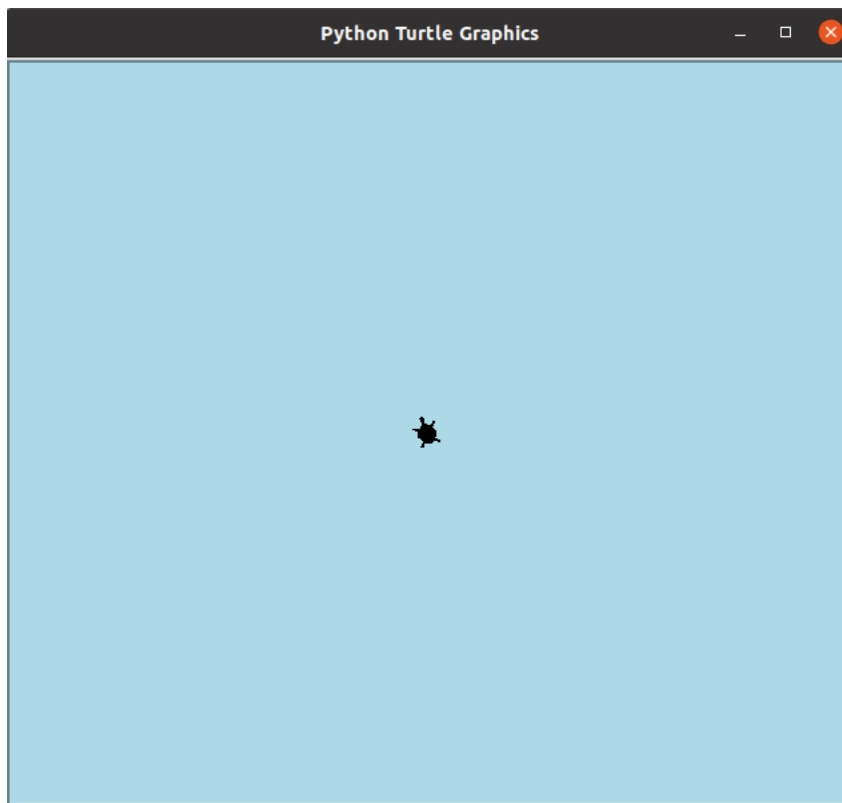


Figure 5: ros2 run python_turtle turtlebot_client terminal output turtle output

Step 16 Output:

```
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ROS VERSION: ros-foxy | ROS_DOMAIN_ID: 66  
-----  
yahboom@VM:~/roscourse_ws/src/python_turtle$ source ~/roscourse_ws/install/setup.bash  
yahboom@VM:~/roscourse_ws/src/python_turtle$ ros2 run python_turtle turtlebot_server  
[INFO] [1739499008.363292204] [turtleServer]: Turtlebot server started!  
[INFO] [1739499033.795300350] [turtleServer]: Turtle color set to: red
```

Figure 6: ros2 run python_turtle turtlebot_server terminal output

```
-----  
ROS VERSION: ros-foxy | ROS_DOMAIN_ID: 66  
-----  
yahboom@VM:~/roscourse_ws/src/python_turtle$ source ~/roscourse_ws/install/setup.bash  
yahboom@VM:~/roscourse_ws/src/python_turtle$ ros2 run python_turtle turtlebot_client  
[INFO] [1739499021.930928830] [turtleClient]: Turtlebot Client Started!  
█
```

Figure 7: ros2 run python_turtle turtlebot_client terminal output

```
-----  
ROS VERSION: ros-foxy | ROS_DOMAIN_ID: 66  
-----  
yahboom@VM:~/roscourse_ws/src/python_turtle$ source ~/roscourse_ws/install/setup.bash  
yahboom@VM:~/roscourse_ws/src/python_turtle$ ros2 run python_turtle service_client  
[INFO] [1739499033.794557280] [service_client]: Turtlebot Client Started!  
[INFO] [1739499033.796061467] [service_client]: Server call success: 1  
yahboom@VM:~/roscourse_ws/src/python_turtle$ █
```

Figure 8: ros2 run python_turtle turtlebot_client terminal output

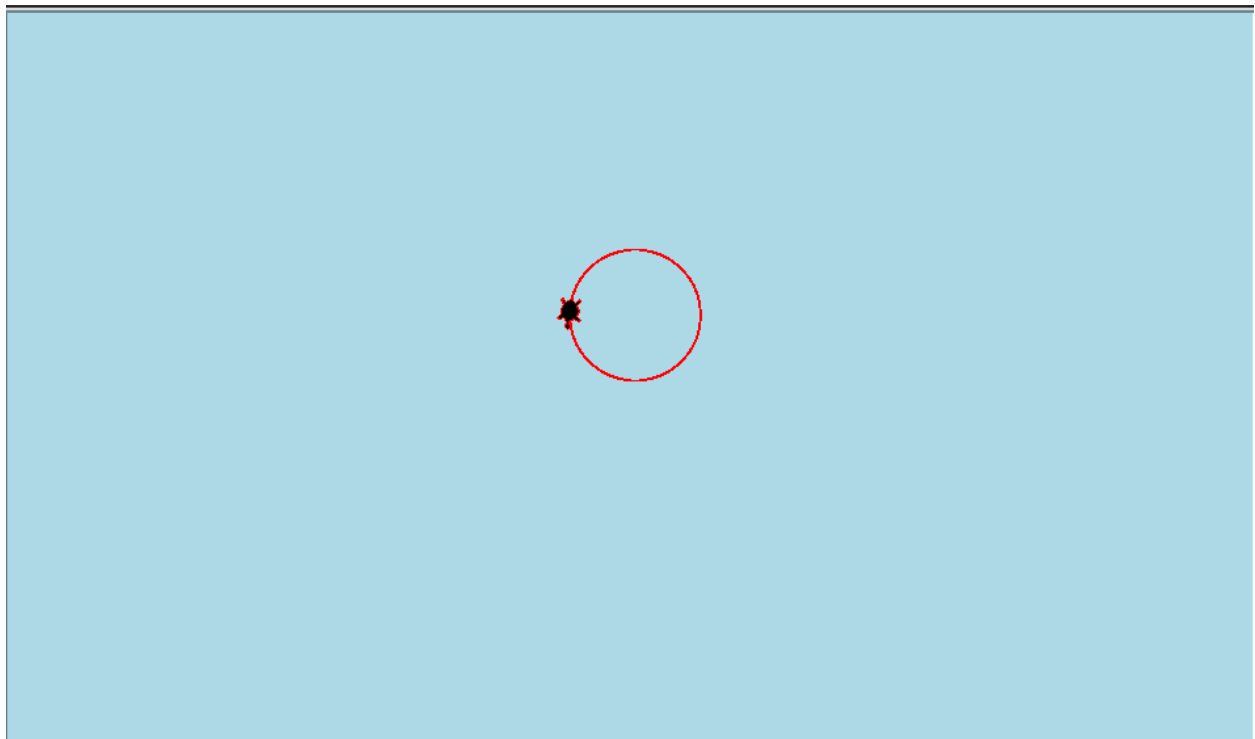


Figure 9: ros2 run python_turtle turtlebot_client terminal output turtle output