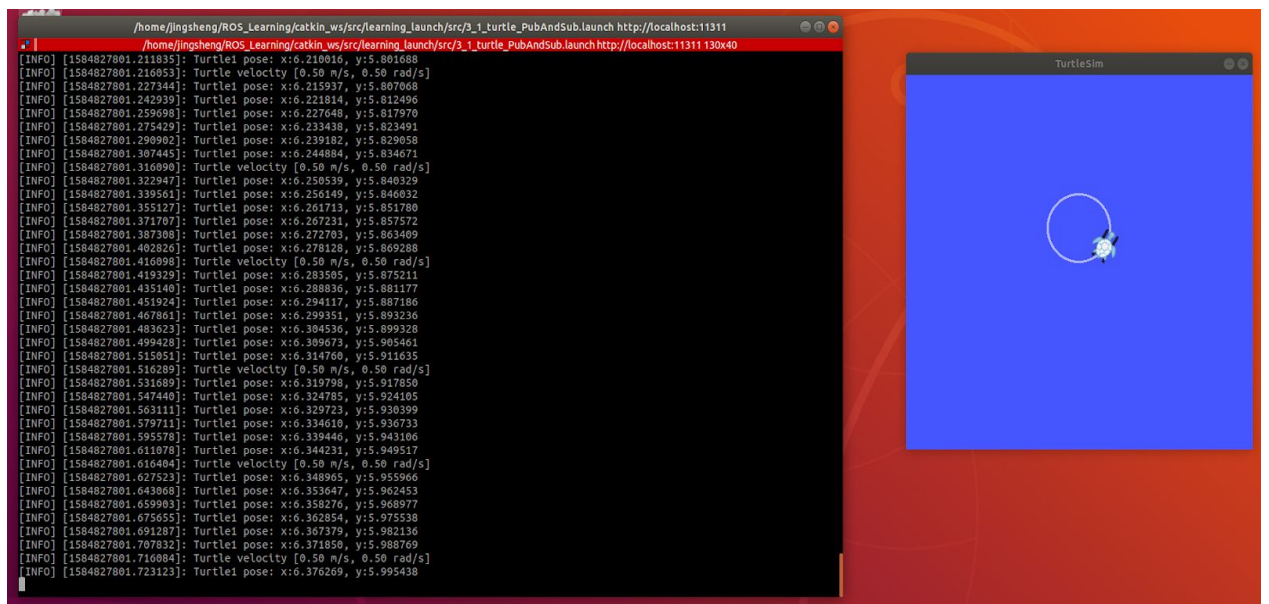


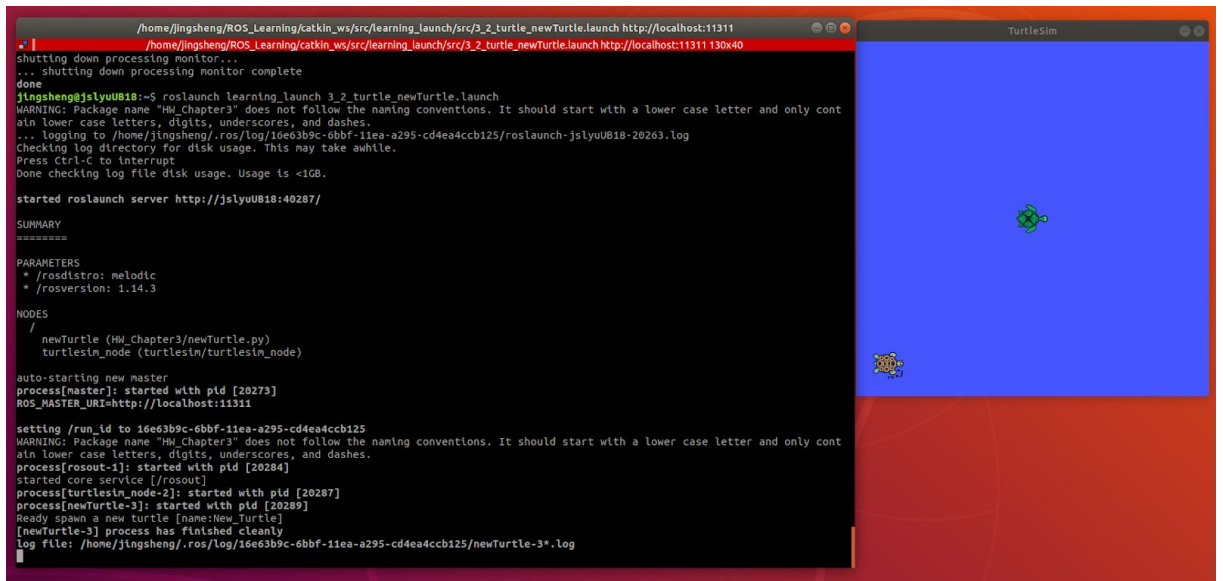
JasonLLLL-第四章作业

1. 创建learning_launch功能包

- 1.1. 进入catkin_ws/src/
- 1.2. 创建功能包
 - 1.2.1. catkin_create_pkg learning_launch rospy roscpp std_msgs std_srvs
- 1.3. 创建3.1的launch文件
 - 1.3.1. touch 3_1_turtle_PubAndSub.launch
 - 1.3.2. 代码见learning_launch功能包的3_1_turtle_PubAndSub.launch
 - 1.3.3. 结果如图



- 1.4. 创建3.2的launch文件
 - 1.4.1. touch 3_2_turtle_newTurtle.launch
 - 1.4.2. 代码见learning_launch功能包的3_2_turtle_newTurtle.launch
 - 1.4.3. 结果如图

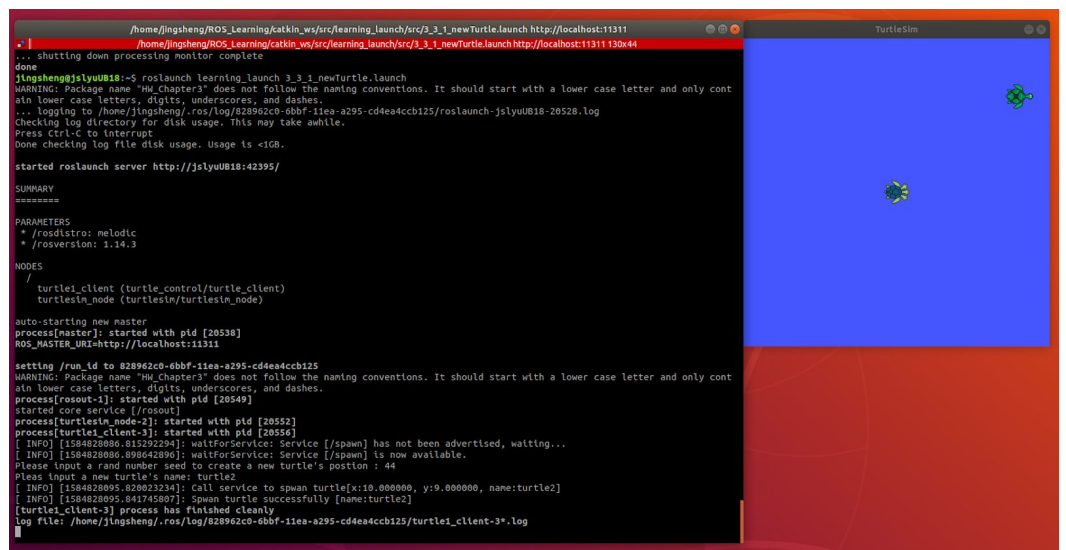


1.5. 创建3.3.1的launch文件

1.5.1. touch 3_3_1_newTurtle.launch

1.5.2. 代码见learning_launch功能包的3_3_1_newTurtle.launch

1.5.3. 结果如图



1.5.4.

1.6. 创建3.3.2的launch文件

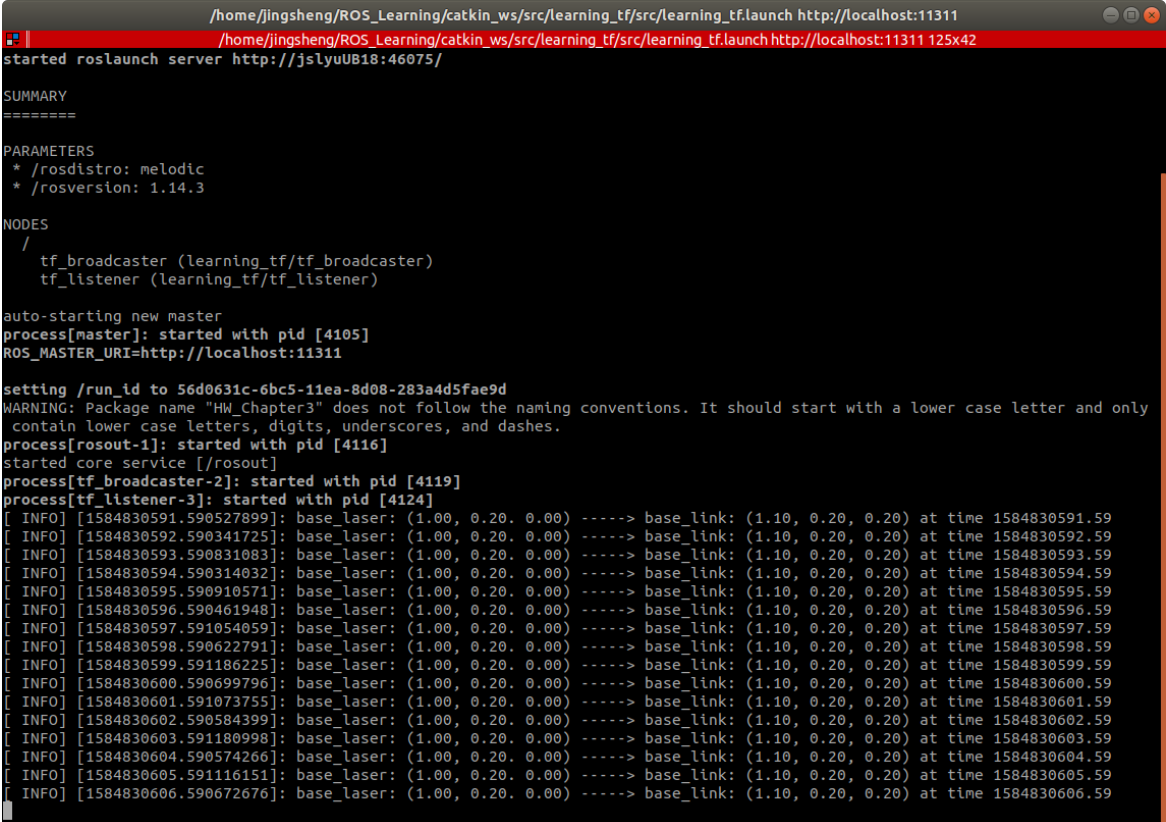
1.6.1. touch 3_3_2_velControl.launch

1.6.2. 代码见learning_launch功能包的3_3_2_velControl.launch

1.6.3. 结果如图

3. 创建learning_tf功能包

- 3.1. `cd ~/catkin_ws/src/`
- 3.2. `catkin_create_pkg learning_tf roscpp rospy tf geometry_msgs`
- 3.3. 编写tf_broadcaster.cpp
 - 3.3.1. 见 tf_broadcaster.cpp
 - 3.3.2. `pwd: /catkin_ws/src/learning_tf/src`
- 3.4. 编写tf_listener.cpp
 - 3.4.1. 见 tf_listener.cpp
 - 3.4.2. `pwd: /catkin_ws/src/learning_tf/src`
- 3.5. 编译CMakeLists.txt
 - 3.5.1. `add_executable(tf_broadcaster src/tf_broadcaster.cpp)`
 - 3.5.2. `add_executable(tf_listener src/tf_listener.cpp)`
 - 3.5.3. `target_link_libraries(tf_broadcaster ${catkin_LIBRARIES})`
 - 3.5.4. `target_link_libraries(tf_listener ${catkin_LIBRARIES})`
- 3.6. 回到catkin_ws, catkin_make编译
- 3.7. 编写launch文件
 - 3.7.1. 见 learning_tf.launch
 - 3.7.2. `pwd: /catkin_ws/src/learning_tf/src`
- 3.8. `roslaunch learning_tf learning_tf.launch`
- 3.9. 结果如图



```
/home/jingsheng/ROS_Learning/catkin_ws/src/learning_tf/src/learning_tf.launch http://localhost:11311
started roslaunch server http://jjslyuUB18:46075/

SUMMARY
=====
PARAMETERS
* /rostdistro: melodic
* /rosversion: 1.14.3

NODES
/
  tf_broadcaster (learning_tf/tf_broadcaster)
  tf_listener (learning_tf/tf_listener)

auto-starting new master
process[master]: started with pid [4105]
ROS_MASTER_URI=http://localhost:11311

setting /run_id to 56d0631c-6bc5-11ea-8d08-283a4d5fae9d
WARNING: Package name "HW_Chapter3" does not follow the naming conventions. It should start with a lower case letter and only
contain lower case letters, digits, underscores, and dashes.
process[rosout-1]: started with pid [4116]
started core service [/rosout]
process[tf_broadcaster-2]: started with pid [4119]
process[tf_listener-3]: started with pid [4124]
[ INFO] [1584830591.590527899]: base_laser: (1.00, 0.20, 0.00) ----> base_link: (1.10, 0.20, 0.20) at time 1584830591.59
[ INFO] [1584830592.590341725]: base_laser: (1.00, 0.20, 0.00) ----> base_link: (1.10, 0.20, 0.20) at time 1584830592.59
[ INFO] [1584830593.590831083]: base_laser: (1.00, 0.20, 0.00) ----> base_link: (1.10, 0.20, 0.20) at time 1584830593.59
[ INFO] [1584830594.590314032]: base_laser: (1.00, 0.20, 0.00) ----> base_link: (1.10, 0.20, 0.20) at time 1584830594.59
[ INFO] [1584830595.590910571]: base_laser: (1.00, 0.20, 0.00) ----> base_link: (1.10, 0.20, 0.20) at time 1584830595.59
[ INFO] [1584830596.590461948]: base_laser: (1.00, 0.20, 0.00) ----> base_link: (1.10, 0.20, 0.20) at time 1584830596.59
[ INFO] [1584830597.591054059]: base_laser: (1.00, 0.20, 0.00) ----> base_link: (1.10, 0.20, 0.20) at time 1584830597.59
[ INFO] [1584830598.590622791]: base_laser: (1.00, 0.20, 0.00) ----> base_link: (1.10, 0.20, 0.20) at time 1584830598.59
[ INFO] [1584830599.591186225]: base_laser: (1.00, 0.20, 0.00) ----> base_link: (1.10, 0.20, 0.20) at time 1584830599.59
[ INFO] [1584830600.590699796]: base_laser: (1.00, 0.20, 0.00) ----> base_link: (1.10, 0.20, 0.20) at time 1584830600.59
[ INFO] [1584830601.591073755]: base_laser: (1.00, 0.20, 0.00) ----> base_link: (1.10, 0.20, 0.20) at time 1584830601.59
[ INFO] [1584830602.590584399]: base_laser: (1.00, 0.20, 0.00) ----> base_link: (1.10, 0.20, 0.20) at time 1584830602.59
[ INFO] [1584830603.591180998]: base_laser: (1.00, 0.20, 0.00) ----> base_link: (1.10, 0.20, 0.20) at time 1584830603.59
[ INFO] [1584830604.590574266]: base_laser: (1.00, 0.20, 0.00) ----> base_link: (1.10, 0.20, 0.20) at time 1584830604.59
[ INFO] [1584830605.591116151]: base_laser: (1.00, 0.20, 0.00) ----> base_link: (1.10, 0.20, 0.20) at time 1584830605.59
[ INFO] [1584830606.590672676]: base_laser: (1.00, 0.20, 0.00) ----> base_link: (1.10, 0.20, 0.20) at time 1584830606.59
```

4. Reference

- 4.1. 胡春旭 《ROS机器人开发实践》
- 4.2. ROS wiki
 - 4.2.1. <http://wiki.ros.org/roslaunch>
 - 4.2.2. <http://wiki.ros.org/tf>
- 4.3. 古月居 《ROS探索总结二十二》