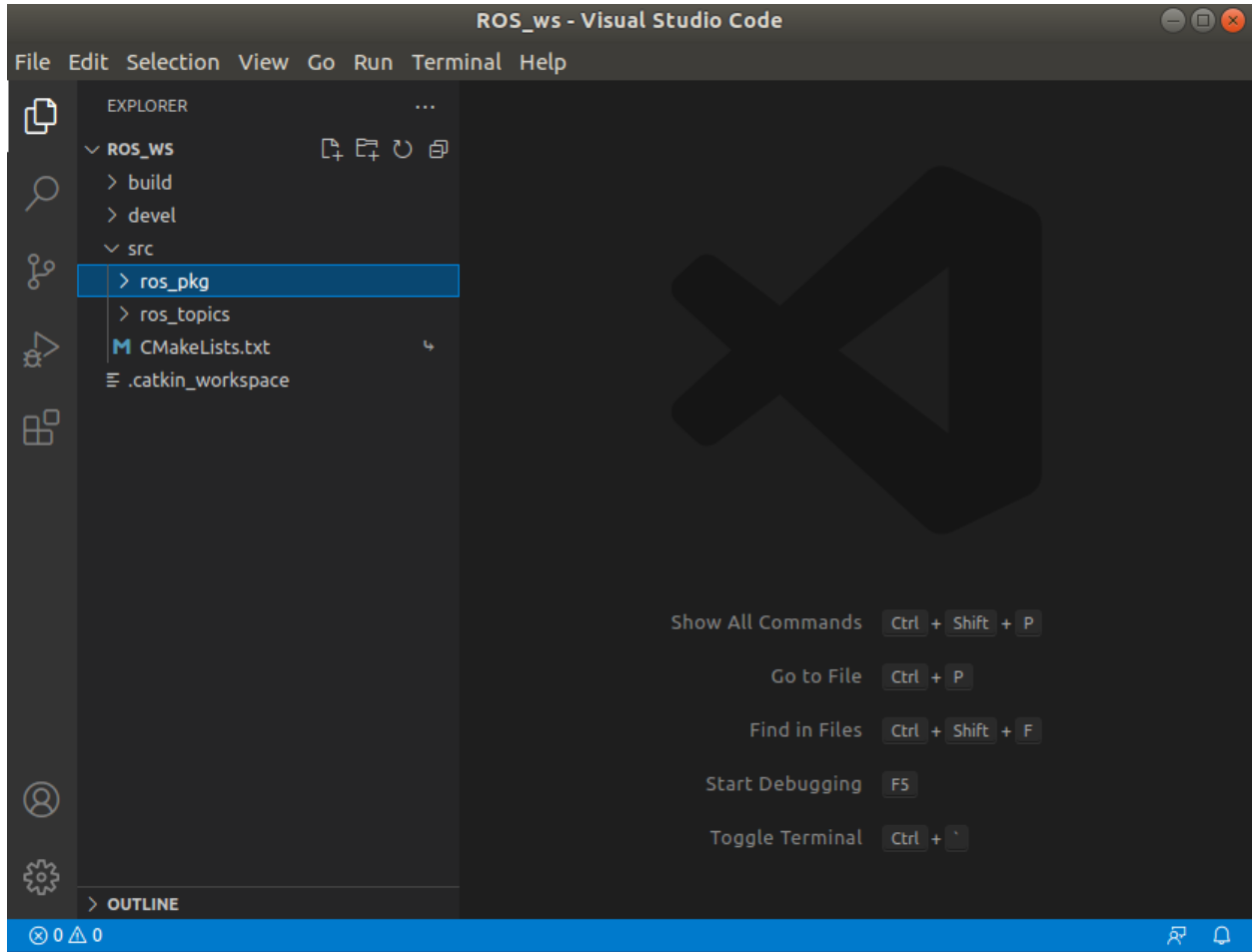Vivek Ponnala

ROS assignment 3

Figure 1. Creating ROS_WS workspace and ros_pkg package

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


rospy.init_node("node_one")
print("This is first node")
```

Figure 2: First node in ros_pkg

```
#! /usr/bin/env python
import rospy
rospy.init_node("node_two")
print("This is the second node")
```

Figure 3: Second node in ros_pkg

```
#! /usr/bin/env python
import rospy
rospy.init_node("node_three")
print("This is the third node")
```

Figure 4: Third node in ros_pkg

```
src > ros_pkg > launch >  my_first_launch.launch
 1    <launch>
 2
 3    <!--My first launch file-->
 4
 5    <node pkg = "ros_pkg" type="first.py" name="node_one" output="screen">
 6    </node>
 7
 8    <node pkg = "ros_pkg" type="second.py" name="node_two" output="screen">
 9    </node>
10
11    <node pkg = "ros_pkg" type="third.py" name="node_three" output="screen">
12    </node>
13
14    </launch>
15
16
17
```

Figure 5: Launch file for ros_pkg

```
setting /run_id to 7622fb66-e3d9-11eb-95d4-080027a9b938
process[rosout-1]: started with pid [7833]
started core service [/rosout]
process[node_one-2]: started with pid [7840]
process[node_two-3]: started with pid [7841]
process[node_three-4]: started with pid [7842]
This is the third node
This is the second node
This is first node
[node_two-3] process has finished cleanly
log file: /home/vivek/.ros/log/7622fb66-e3d9-11eb-95d4-080027a9b938/node_two-3*.log
[node_one-2] process has finished cleanly
log file: /home/vivek/.ros/log/7622fb66-e3d9-11eb-95d4-080027a9b938/node_one-2*.log
[node_three-4] process has finished cleanly
log file: /home/vivek/.ros/log/7622fb66-e3d9-11eb-95d4-080027a9b938/node_three-4*.log
```

Figure 6: Launching three nodes at once output

```python
src > ros_topics > src > scripts > 🐍 publisher.py > ...
  1    #! /usr/bin/env python
  2
  3    import rospy
  4    from std_msgs.msg import String
  5
  6    def publish():
  7        pub = rospy.Publisher('chatter',String,queue_size=10)
  8        rospy.init_node("publisher",anonymous=True)
  9        rate = rospy.Rate(20)
 10        while not rospy.is_shutdown():
 11            hello_str = "hello world %s" % rospy.get_time()
 12            rospy.loginfo(hello_str)
 13            pub.publish(hello_str)
 14            rate.sleep()
 15
 16    if __name__ == '__main__':
 17        try:
 18            publish()
 19        except rospy.ROSInterruptException:
 20            pass
 21
 22
```

Figure 7: publisher.py

```python
#! /usr/bin/env python
import rospy
from std_msgs.msg import String


def callback(data):
    rospy.loginfo(rospy.get_caller_id() + "I heard %s", data.data)

def subscribe():
    rospy.init_node("subscriber", anonymous=True)
    rospy.Subscriber("chatter",String,callback)
    rospy.spin()

if __name__ == '__main__':
    subscribe()
```

Figure 8: subscriber.py

```xml
<launch>

<!--My second launch file-->

<node pkg = "ros_topics" type="publisher.py" name="publisher" output="screen">
</node>

<node pkg = "ros_topics" type="subscriber.py" name="subscriber" output="screen">
</node>

</launch>
```

Figure 9: launch file for publisher and subscriber

```
[INFO] [1626182130.237394]: /subscriberI heard hello world 1626182130.23
[INFO] [1626182130.285890]: hello world 1626182130.29
[INFO] [1626182130.288044]: /subscriberI heard hello world 1626182130.29
[INFO] [1626182130.337706]: hello world 1626182130.34
[INFO] [1626182130.340447]: /subscriberI heard hello world 1626182130.34
[INFO] [1626182130.384580]: hello world 1626182130.38
[INFO] [1626182130.386750]: /subscriberI heard hello world 1626182130.38
[INFO] [1626182130.434258]: hello world 1626182130.43
[INFO] [1626182130.437945]: /subscriberI heard hello world 1626182130.43
[INFO] [1626182130.484512]: hello world 1626182130.48
[INFO] [1626182130.487171]: /subscriberI heard hello world 1626182130.48
[INFO] [1626182130.534280]: hello world 1626182130.53
[INFO] [1626182130.536363]: /subscriberI heard hello world 1626182130.53
[INFO] [1626182130.584533]: hello world 1626182130.58
[INFO] [1626182130.586704]: /subscriberI heard hello world 1626182130.58
[INFO] [1626182130.635340]: hello world 1626182130.64
[INFO] [1626182130.637756]: /subscriberI heard hello world 1626182130.64
[INFO] [1626182130.684592]: hello world 1626182130.68
[INFO] [1626182130.686823]: /subscriberI heard hello world 1626182130.68
[INFO] [1626182130.737870]: hello world 1626182130.74
[INFO] [1626182130.740744]: /subscriberI heard hello world 1626182130.74
[INFO] [1626182130.784610]: hello world 1626182130.78
[INFO] [1626182130.786647]: /subscriberI heard hello world 1626182130.78
[INFO] [1626182130.834393]: hello world 1626182130.83
[INFO] [1626182130.836467]: /subscriberI heard hello world 1626182130.83
[INFO] [1626182130.884763]: hello world 1626182130.88
[INFO] [1626182130.886909]: /subscriberI heard hello world 1626182130.88
[INFO] [1626182130.937902]: hello world 1626182130.94
[INFO] [1626182130.940692]: /subscriberI heard hello world 1626182130.94
[INFO] [1626182130.984280]: hello world 1626182130.98
[INFO] [1626182130.986863]: /subscriberI heard hello world 1626182130.98
[INFO] [1626182131.034557]: hello world 1626182131.03
[INFO] [1626182131.036941]: /subscriberI heard hello world 1626182131.03
```

Figure 10: Output for publisher and subscriber node