

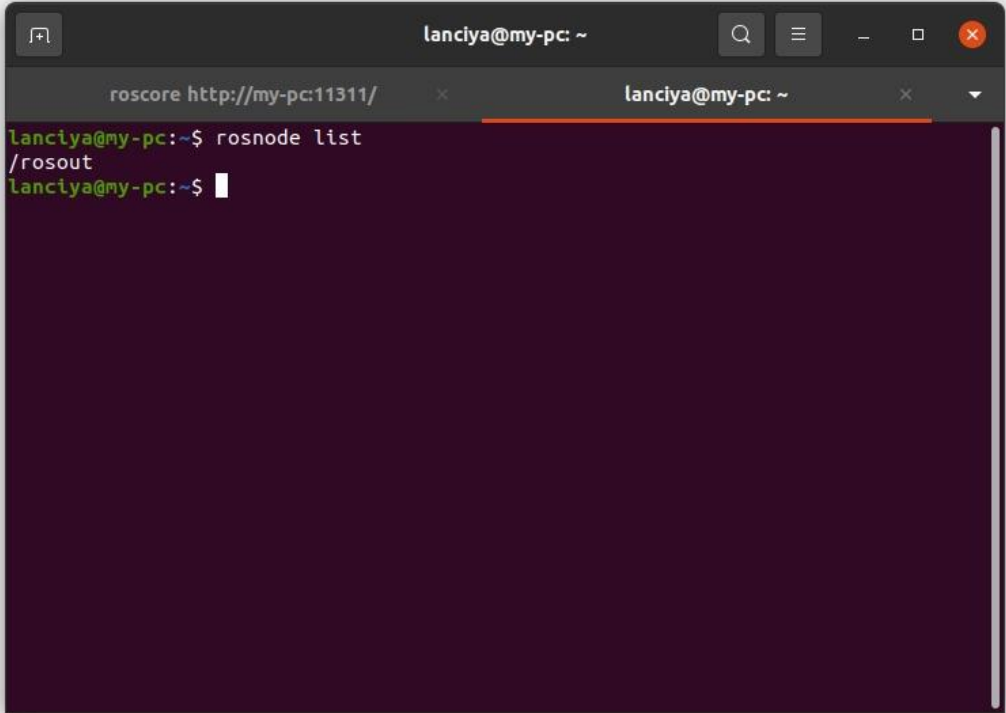
## ROBOTICS LAB ASSIGNMENT 1

### ANSWERS

LANCIYA L  
M1 RAA ROLL  
NO:09

#### 1.ROS Nodes

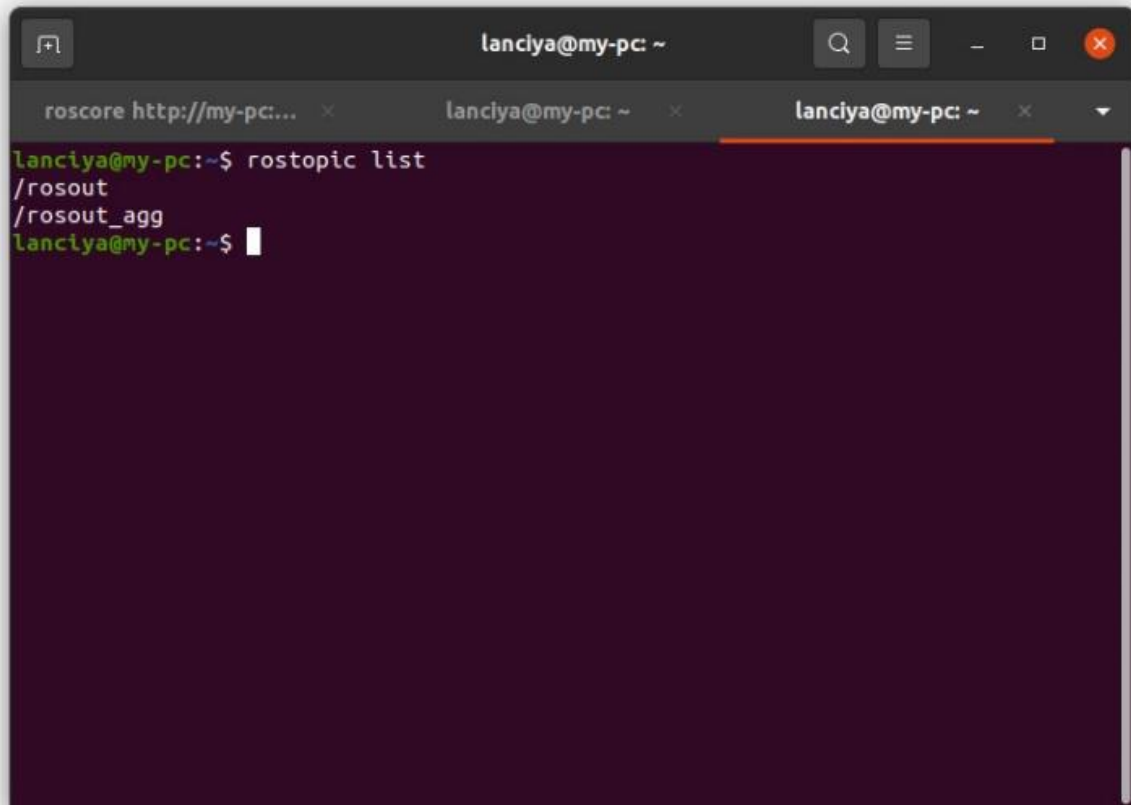
##### a) /rosout



```
lanciya@my-pc: ~  
roscore http://my-pc:11311/ x lanciya@my-pc: ~  
lanciya@my-pc:~$ rosnode list  
/rosout  
lanciya@my-pc:~$
```

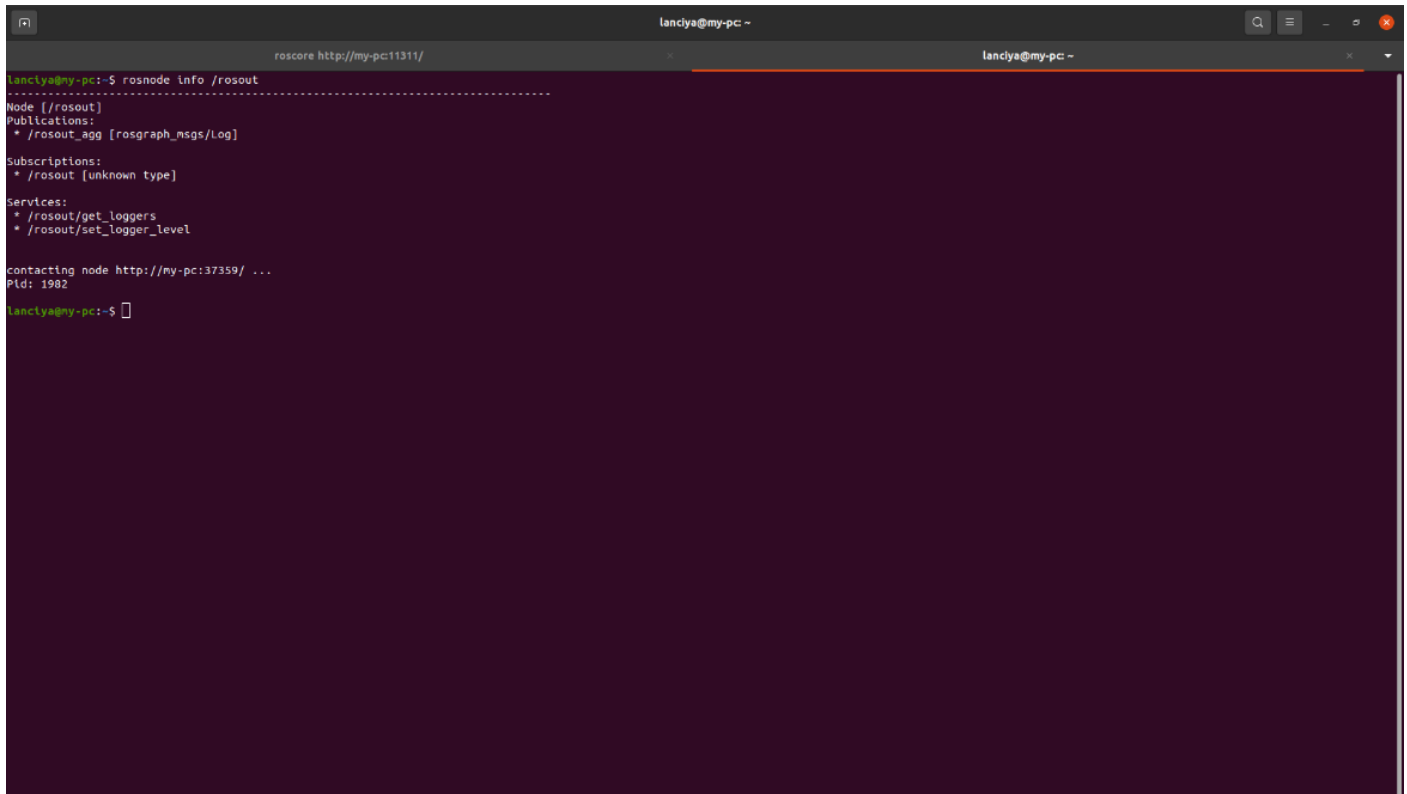
- b) The /rosout node is used for subscribing, logging, and republishing the messages. It serves as a centralized message topic for logging and monitoring within a ROS ecosystem. It allows various nodes in the system to publish log messages, categorized by severity levels, such as INFO, WARNING, ERROR, and FATAL. These log messages provide essential information about the system's operation, making it easier for developers and operators to diagnose issues, track events, and assess the system's health. ROS tools and graphical interfaces can subscribe to /rosout to display and analyze log messages, facilitating troubleshooting and system analysis.

c) /rosout  
/rosout\_agg



```
lanciya@my-pc: ~  
roscore http://my-pc:... x lanciya@my-pc: ~ x lanciya@my-pc: ~ x  
lanciya@my-pc:~$ rostopic list  
/rosout  
/rosout_agg  
lanciya@my-pc:~$
```

- d) `*/rosout [unknown type]`
- e) `*/rosout_agg[rosgraph_msgs/Log]`
- f) `*/rosout/get_loggers`  
`*/rosout/set_logger_level`



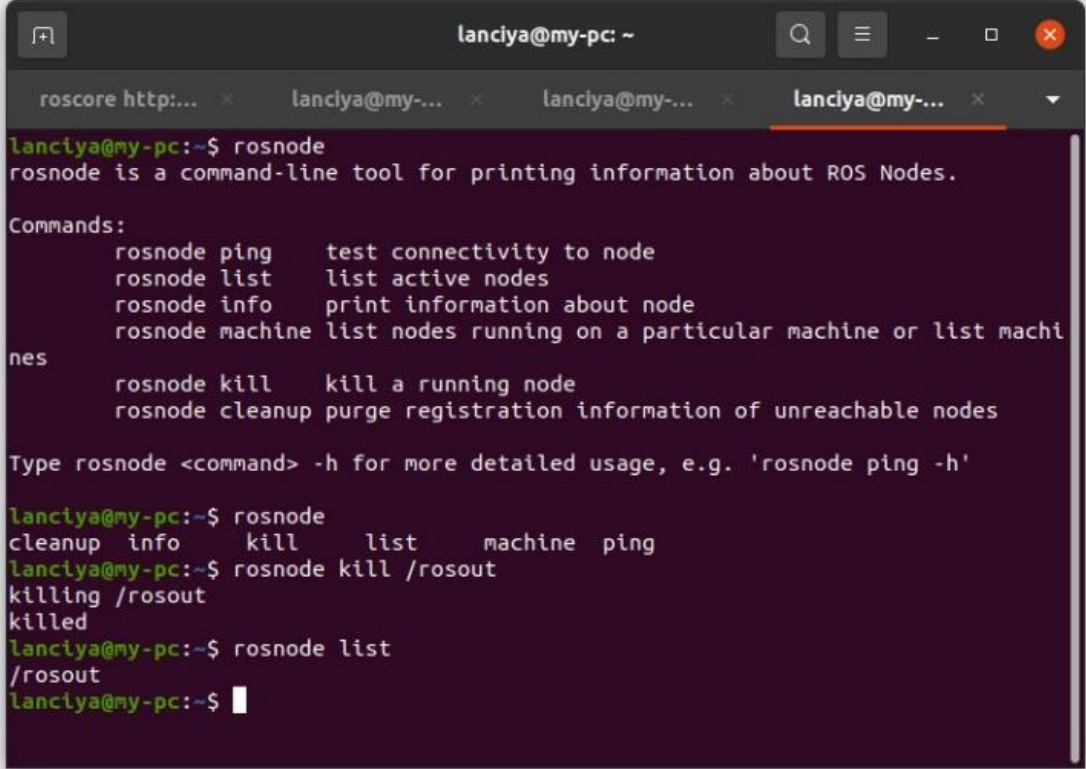
```
lanctya@my-pc: ~$ rosnode info /rosout
-----
Node [/rosout]
Publications:
 * /rosout_agg [rosgraph_msgs/Log]

Subscriptions:
 * /rosout [unknown type]

Services:
 * /rosout/get_loggers
 * /rosout/set_logger_level

contacting node http://my-pc:37359/ ...
Pid: 1982
lanctya@my-pc: ~$
```

- g) **Killing of node /rosout is done successfully and the when we again check for the current running node, we got /rosout.**



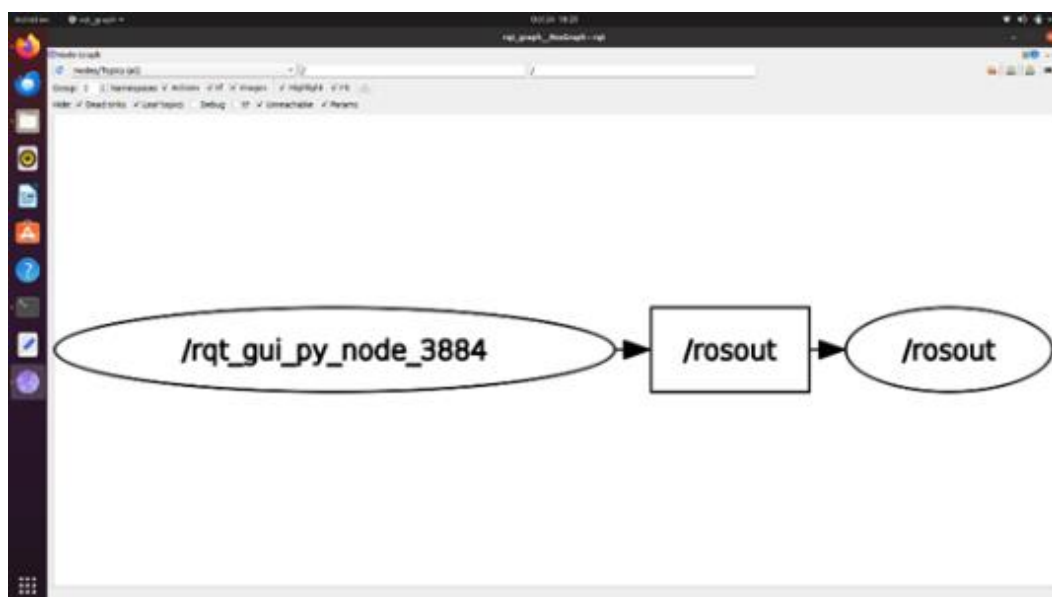
```
lanciya@my-pc: ~  
roscore http:... x lanciya@my-... x lanciya@my-... x lanciya@my-... x  
lanciya@my-pc:~$ rosnode  
rosnode is a command-line tool for printing information about ROS Nodes.  
  
Commands:  
    rosnode ping      test connectivity to node  
    rosnode list      list active nodes  
    rosnode info      print information about node  
    rosnode machine   list nodes running on a particular machine or list machi  
nes  
    rosnode kill      kill a running node  
    rosnode cleanup   purge registration information of unreachable nodes  
  
Type rosnode <command> -h for more detailed usage, e.g. 'rosnode ping -h'  
  
lanciya@my-pc:~$ rosnode  
cleanup info      kill      list      machine ping  
lanciya@my-pc:~$ rosnode kill /rosout  
killing /rosout  
killed  
lanciya@my-pc:~$ rosnode list  
/rosout  
lanciya@my-pc:~$
```

- h)
- |          |   |
|----------|---|
| Clean up | - Display information about a node that cannot be contacted immediately.<br>Prints list of unreachable nodes which has to be confirmed. |
| Info     | - Display information about a node including subscriptions and publications.  |
| Kill     | -To kill a running node   |
| List     | -Display a list of current nodes.   |
| Machine  | -List nodes running on a particular machine.  |
| Ping     | -Test connectivity to the node  |

i)

```
lanciya@my-pc: ~  
roscore http... x lanciya@my... x lanciya@my... x lanciya@my... x  
lanciya@my-pc:~$ roscore  
roscore is a command-line tool for printing information about ROS Nodes.  
Commands:  
  roscore ping    test connectivity to node  
  roscore list    list active nodes  
  roscore info    print information about node  
  roscore machine list nodes running on a particular machine or list machines  
  roscore kill    kill a running node  
  roscore cleanup purge registration information of unreachable nodes  
Type roscore <command> -h for more detailed usage, e.g. 'roscore ping -h'  
lanciya@my-pc:~$ roscore  
cleanup info kill list machine ping  
lanciya@my-pc:~$ roscore kill /rosout  
killing /rosout  
killed  
lanciya@my-pc:~$ roscore list  
/rosout  
lanciya@my-pc:~$
```

j)

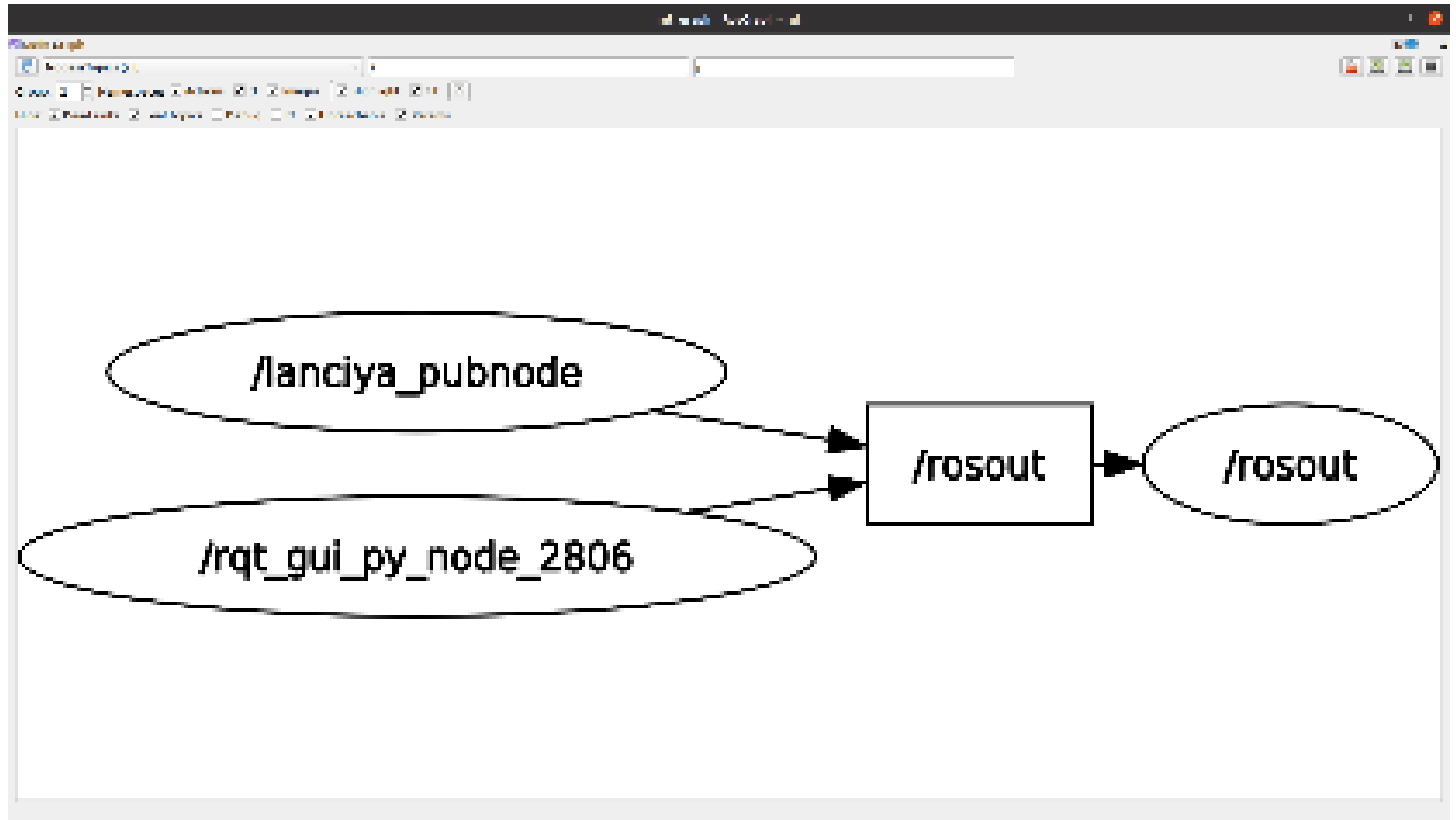


## 2.ROS Publisher Node

a)

```
lanctya@my-pc:~$ rosrun lab1_sub_pub publisher.py
[INFO] [1698883476.365052]: publishing test
[INFO] [1698883476.368824]: data: "Hello,I am lanctya"
[INFO] [1698883476.465071]: data: "Hello,I am lanctya"
[INFO] [1698883476.565742]: data: "Hello,I am lanctya"
[INFO] [1698883476.665045]: data: "Hello,I am lanctya"
[INFO] [1698883476.765629]: data: "Hello,I am lanctya"
[INFO] [1698883476.865588]: data: "Hello,I am lanctya"
[INFO] [1698883476.965705]: data: "Hello,I am lanctya"
[INFO] [1698883477.065603]: data: "Hello,I am lanctya"
[INFO] [1698883477.165764]: data: "Hello,I am lanctya"
[INFO] [1698883477.265648]: data: "Hello,I am lanctya"
[INFO] [1698883477.365609]: data: "Hello,I am lanctya"
[INFO] [1698883477.465608]: data: "Hello,I am lanctya"
[INFO] [1698883477.565713]: data: "Hello,I am lanctya"
[INFO] [1698883477.665658]: data: "Hello,I am lanctya"
[INFO] [1698883477.765623]: data: "Hello,I am lanctya"
[INFO] [1698883477.865644]: data: "Hello,I am lanctya"
[INFO] [1698883477.965647]: data: "Hello,I am lanctya"
[INFO] [1698883478.065608]: data: "Hello,I am lanctya"
[INFO] [1698883478.165687]: data: "Hello,I am lanctya"
[INFO] [1698883478.265802]: data: "Hello,I am lanctya"
[INFO] [1698883478.365643]: data: "Hello,I am lanctya"
[INFO] [1698883478.465641]: data: "Hello,I am lanctya"
[INFO] [1698883478.565692]: data: "Hello,I am lanctya"
[INFO] [1698883478.665656]: data: "Hello,I am lanctya"
[INFO] [1698883478.765630]: data: "Hello,I am lanctya"
[INFO] [1698883478.865749]: data: "Hello,I am lanctya"
[INFO] [1698883478.965778]: data: "Hello,I am lanctya"
[INFO] [1698883479.065692]: data: "Hello,I am lanctya"
[INFO] [1698883479.165648]: data: "Hello,I am lanctya"
[INFO] [1698883479.265474]: data: "Hello,I am lanctya"
[INFO] [1698883479.365609]: data: "Hello,I am lanctya"
[INFO] [1698883479.465678]: data: "Hello,I am lanctya"
[INFO] [1698883479.565664]: data: "Hello,I am lanctya"
[INFO] [1698883479.665741]: data: "Hello,I am lanctya"
[INFO] [1698883479.765621]: data: "Hello,I am lanctya"
[INFO] [1698883479.865847]: data: "Hello,I am lanctya"
[INFO] [1698883479.965818]: data: "Hello,I am lanctya"
[INFO] [1698883480.065812]: data: "Hello,I am lanctya"
[INFO] [1698883480.165599]: data: "Hello,I am lanctya"
[INFO] [1698883480.265702]: data: "Hello,I am lanctya"
[INFO] [1698883480.365828]: data: "Hello,I am lanctya"
[INFO] [1698883480.465857]: data: "Hello,I am lanctya"
[INFO] [1698883480.565883]: data: "Hello,I am lanctya"
[INFO] [1698883480.665711]: data: "Hello,I am lanctya"
[INFO] [1698883480.765731]: data: "Hello,I am lanctya"
[INFO] [1698883480.865699]: data: "Hello,I am lanctya"
[INFO] [1698883480.965687]: data: "Hello,I am lanctya"
[INFO] [1698883481.065833]: data: "Hello,I am lanctya"
[INFO] [1698883481.165614]: data: "Hello,I am lanctya"
[INFO] [1698883481.265659]: data: "Hello,I am lanctya"
[INFO] [1698883481.365618]: data: "Hello,I am lanctya"
[INFO] [1698883481.465722]: data: "Hello,I am lanctya"
```

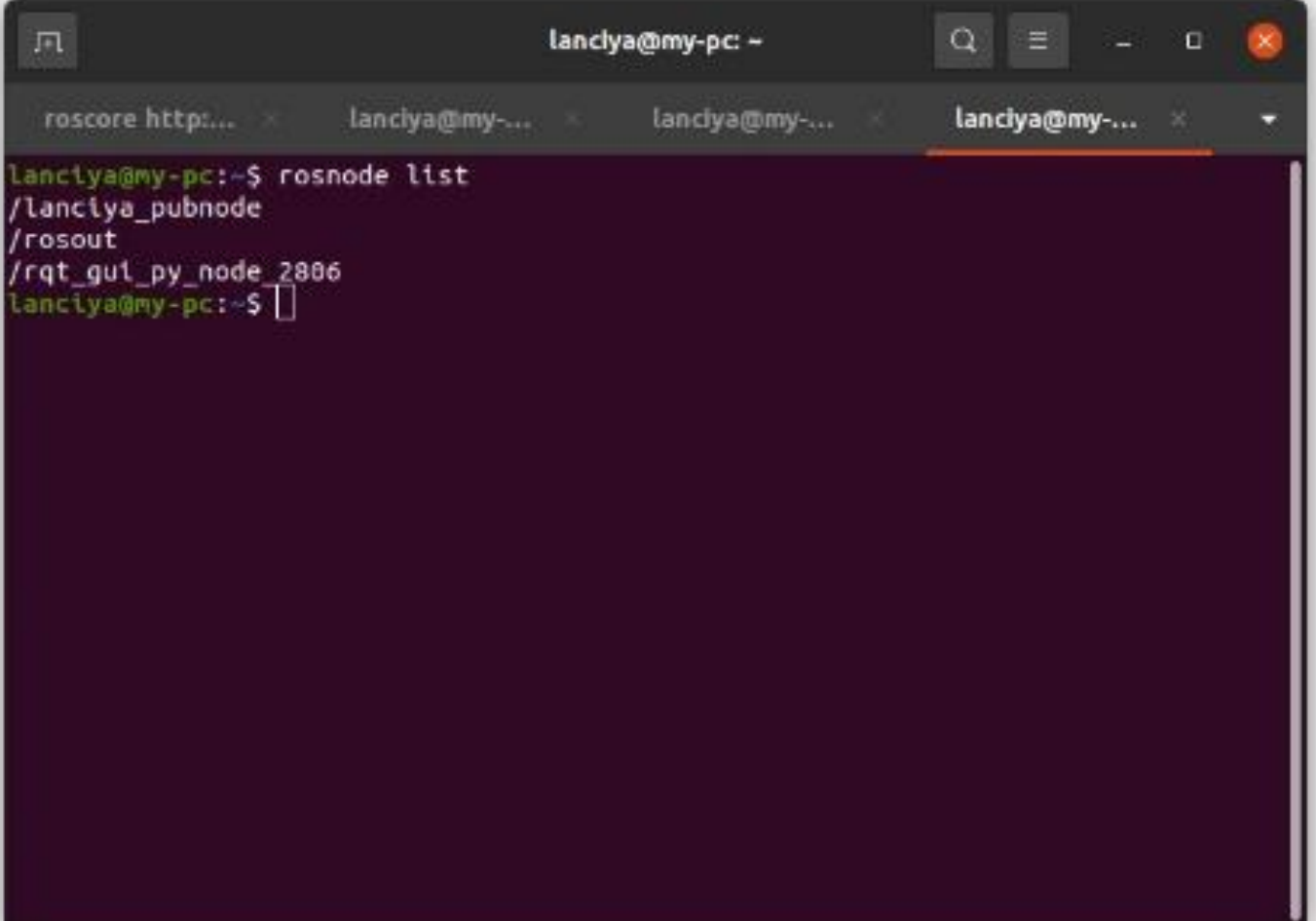
b)



## OBSERVATIONS

From the rqt graph obtained here, we observed that the nodes `/lanciya_pubnode` and `/rqt_gui_py_node_2806` are sending messages/data to the node `/rosout` through the `/rosout` topic.

- c) /lanciya\_pubnode  
/rqt\_gui\_py\_node\_2806  
/rosout

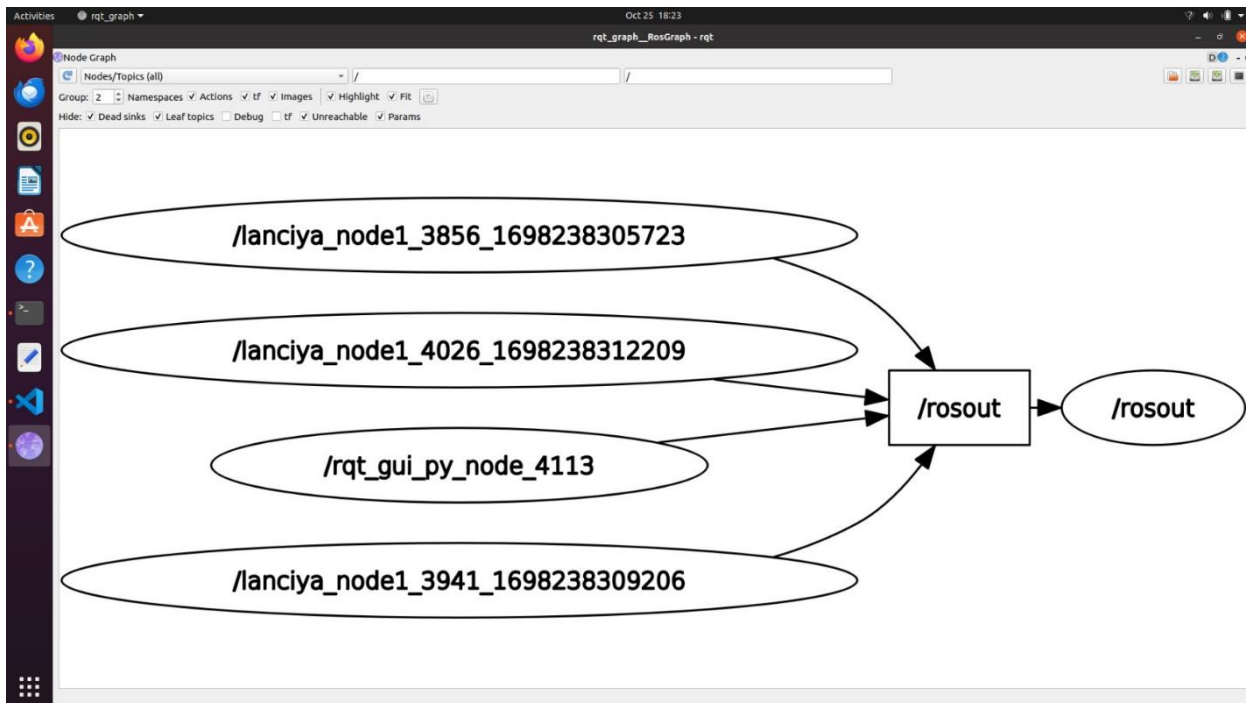


```
lanciya@my-pc: ~  
roscore http:... x lanciya@my-... x lanciya@my-... x lanciya@my-... x  
lanciya@my-pc:~$ rostopic list  
/lanciya_pubnode  
/rosout  
/rqt_gui_py_node_2806  
lanciya@my-pc:~$
```

The image shows a terminal window titled 'lanciya@my-pc: ~'. The window has a dark theme with a purple background. The terminal output shows the command 'rostopic list' being executed, which returns the following topics: '/lanciya\_pubnode', '/rosout', and '/rqt\_gui\_py\_node\_2806'. The prompt 'lanciya@my-pc:~\$' is visible at the bottom of the terminal.



d)



## OBSERVATIONS

From the rqt graph obtained here, we observed that, currently 3 publisher nodes are communicating with the /rosout through the /rosout topic.

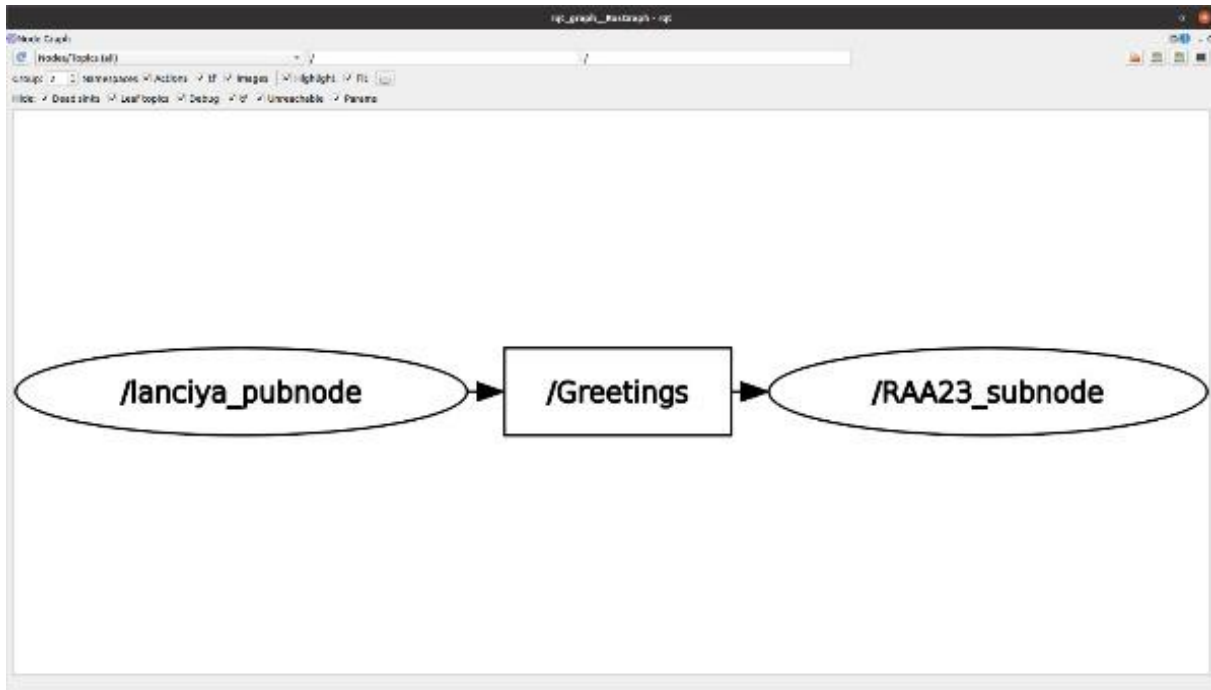
### 3.ROS Subscriber Node

a)

```
lancliya@my-pc: ~$ roscore http://my-pc:11311/
lancliya@my-pc:~$ roslaunch lab3_sub_pub publisher.py
[INFO] [1698083476.365052]: publishing test
[INFO] [1698083476.368224]: data: "Hello,I am lancliya"
[INFO] [1698083476.405071]: data: "Hello,I am lancliya"
[INFO] [1698083476.565742]: data: "Hello,I am lancliya"
[INFO] [1698083476.665645]: data: "Hello,I am lancliya"
[INFO] [1698083476.765629]: data: "Hello,I am lancliya"
[INFO] [1698083476.865588]: data: "Hello,I am lancliya"
[INFO] [1698083476.965705]: data: "Hello,I am lancliya"
[INFO] [1698083477.065683]: data: "Hello,I am lancliya"
[INFO] [1698083477.165764]: data: "Hello,I am lancliya"
[INFO] [1698083477.265640]: data: "Hello,I am lancliya"
[INFO] [1698083477.365689]: data: "Hello,I am lancliya"
[INFO] [1698083477.465608]: data: "Hello,I am lancliya"
[INFO] [1698083477.565713]: data: "Hello,I am lancliya"
[INFO] [1698083477.665658]: data: "Hello,I am lancliya"
[INFO] [1698083477.765623]: data: "Hello,I am lancliya"
[INFO] [1698083477.865644]: data: "Hello,I am lancliya"
[INFO] [1698083477.965647]: data: "Hello,I am lancliya"
[INFO] [1698083478.065608]: data: "Hello,I am lancliya"
[INFO] [1698083478.165687]: data: "Hello,I am lancliya"
[INFO] [1698083478.265682]: data: "Hello,I am lancliya"
[INFO] [1698083478.365643]: data: "Hello,I am lancliya"
[INFO] [1698083478.465641]: data: "Hello,I am lancliya"
[INFO] [1698083478.565697]: data: "Hello,I am lancliya"
[INFO] [1698083478.665656]: data: "Hello,I am lancliya"
[INFO] [1698083478.765638]: data: "Hello,I am lancliya"
[INFO] [1698083478.865749]: data: "Hello,I am lancliya"
[INFO] [1698083478.965778]: data: "Hello,I am lancliya"
[INFO] [1698083479.065692]: data: "Hello,I am lancliya"
[INFO] [1698083479.165648]: data: "Hello,I am lancliya"
[INFO] [1698083479.265474]: data: "Hello,I am lancliya"
[INFO] [1698083479.365609]: data: "Hello,I am lancliya"
[INFO] [1698083479.465678]: data: "Hello,I am lancliya"
[INFO] [1698083479.565664]: data: "Hello,I am lancliya"
[INFO] [1698083479.665741]: data: "Hello,I am lancliya"
```

```
lancliya@my-pc: ~$ roslaunch lab3_sub_pub subscriber.py
[INFO] [1698153120.477551]: Message received
[INFO] [1698153120.479849]: data: "Hello,I am lancliya"
[INFO] [1698153120.577929]: Message received
[INFO] [1698153120.580076]: data: "Hello,I am lancliya"
[INFO] [1698153120.677537]: Message received
[INFO] [1698153120.679938]: data: "Hello,I am lancliya"
[INFO] [1698153120.777971]: Message received
[INFO] [1698153120.779953]: data: "Hello,I am lancliya"
[INFO] [1698153120.877808]: Message received
[INFO] [1698153120.879672]: data: "Hello,I am lancliya"
[INFO] [1698153120.978081]: Message received
[INFO] [1698153120.980130]: data: "Hello,I am lancliya"
[INFO] [1698153121.078105]: Message received
[INFO] [1698153121.080169]: data: "Hello,I am lancliya"
[INFO] [1698153121.177896]: Message received
[INFO] [1698153121.179807]: data: "Hello,I am lancliya"
[INFO] [1698153121.278106]: Message received
[INFO] [1698153121.280208]: data: "Hello,I am lancliya"
[INFO] [1698153121.377940]: Message received
[INFO] [1698153121.379876]: data: "Hello,I am lancliya"
[INFO] [1698153121.478003]: Message received
[INFO] [1698153121.479956]: data: "Hello,I am lancliya"
[INFO] [1698153121.578016]: Message received
```

b)



## OBSERVATIONS

From the rqt graph obtained here, we observed that the publisher node ie, `/lanciya_pubnode` sends message data to the subscriber node ie, `/RAA23_subnode` through the topic ie, `Greeting`