

## Twā subscriber node



```
1  #!/usr/bin/env python3
2
3  import rclpy
4  from rclpy.node import Node
5
6  from std_msgs.msg import String
7  from sensor_msgs.msg import LaserScan
8
9  import math
10
11 class Lidar_scan_660610840(Node):
12
13     def __init__(self):
14         super().__init__('lidar_scan_660610840')
15         self.subscription = self.create_subscription(
16             LaserScan,
17             '/scan',
18             self.scan_callback,
19             10)
20         self.yaw_deg = 180.0
21
22     def rotate_ranges(self, msg, yaw_deg):
23         ranges = list(msg.ranges)
24         yaw_rad = math.radians(yaw_deg)
25
26         # คำนวณจำนวน index ที่ต้อง shift
27         shift = int(yaw_rad / msg.angle_increment)
28
29         # ทำให้ shift อยู่ในช่วง 0..N-1
30         N = len(ranges)
31         shift = shift % N
32
33         rotated_ranges = ranges[-shift:] + ranges[:-shift]
34         return rotated_ranges
35
36     def scan_callback(self, msg):
37
38         rotated_ranges = self.rotate_ranges(msg, self.yaw_deg)
39
40         # ช่วงที่ตรวจสอบ (0 ± 5°)
41         angle_start = math.radians(-5.0)
42         angle_end = math.radians(5.0)
43
44         start_index = int((angle_start - msg.angle_min) / msg.angle_increment)
45         end_index = int((angle_end - msg.angle_min) / msg.angle_increment)
46
47         start_index = max(0, start_index)
48         end_index = min(len(rotated_ranges)-1, end_index)
49
50         selected_ranges = rotated_ranges[start_index:end_index+1]
51         valid_ranges = [r for r in selected_ranges if math.isfinite(r) and r > 0.0]
52
53         msg_out:String = f''
54
55         if valid_ranges:
56             avg_distance = sum(valid_ranges) / len(valid_ranges)
57             msg_out = f"Average distance (0° ± 5°): {avg_distance:.3f} m"
58         else:
59             msg_out = f"No valid distance values in (0° ± 5°)"
60
61         self.get_logger().info('LIDAR SCAN DATA: \n'
62             f'angle minimum: {msg.angle_min} \n'
63             f'angle maximum: {msg.angle_max} \n'
64             f'range minimum: {msg.range_min} \n'
65             f'range maximum: {msg.range_max} \n'
66             f'{msg_out}')
67
68
69
70
71 def main(args=None):
72     rclpy.init(args=args)
73     lidar_scan_660610840 = Lidar_scan_660610840()
74     rclpy.spin(lidar_scan_660610840)
75     lidar_scan_660610840.destroy_node()
76     rclpy.shutdown()
77
78
79 if __name__ == '__main__':
80     main()
81
```

## terminal ตอนรับ เหวาะ node

```
mannaja@mannaja: ~/study/ros_name_sensei_ws 122x51
[ros2run]: Interrupt
mannaja@mannaja:~/study/ros_name_sensei_ws$ ros2 run assign6_660610840 lidar_listener
[INFO] [1767942683.663622859] [lidar_scan_660610840]: LIDAR SCAN DATA:
angle minimum: -3.1415927410125732
angle maximum: 3.1415927410125732
range minimum: 0.05000000074505806
range maximum: 25.0
Average distance (0° ± 5°): 0.436 m
[INFO] [1767942683.664452825] [lidar_scan_660610840]: LIDAR SCAN DATA:
angle minimum: -3.1415927410125732
angle maximum: 3.1415927410125732
range minimum: 0.05000000074505806
range maximum: 25.0
Average distance (0° ± 5°): 0.436 m
[INFO] [1767942683.665043829] [lidar_scan_660610840]: LIDAR SCAN DATA:
angle minimum: -3.1415927410125732
angle maximum: 3.1415927410125732
range minimum: 0.05000000074505806
range maximum: 25.0
Average distance (0° ± 5°): 0.435 m
[INFO] [1767942683.665671642] [lidar_scan_660610840]: LIDAR SCAN DATA:
angle minimum: -3.1415927410125732
angle maximum: 3.1415927410125732
range minimum: 0.05000000074505806
range maximum: 25.0
Average distance (0° ± 5°): 0.156 m
[INFO] [1767942683.666244116] [lidar_scan_660610840]: LIDAR SCAN DATA:
angle minimum: -3.1415927410125732
angle maximum: 3.1415927410125732
range minimum: 0.05000000074505806
range maximum: 25.0
Average distance (0° ± 5°): 0.156 m
[INFO] [1767942683.666798619] [lidar_scan_660610840]: LIDAR SCAN DATA:
angle minimum: -3.1415927410125732
angle maximum: 3.1415927410125732
range minimum: 0.05000000074505806
range maximum: 25.0
Average distance (0° ± 5°): 0.156 m
[INFO] [1767942683.685643776] [lidar_scan_660610840]: LIDAR SCAN DATA:
angle minimum: -3.1415927410125732
angle maximum: 3.1415927410125732
range minimum: 0.05000000074505806
range maximum: 25.0
Average distance (0° ± 5°): 0.156 m
[INFO] [1767942683.765258392] [lidar_scan_660610840]: LIDAR SCAN DATA:
angle minimum: -3.1415927410125732
angle maximum: 3.1415927410125732
range minimum: 0.05000000074505806
range maximum: 25.0
Average distance (0° ± 5°): 0.171 m
[INFO] [1767942683.844882043] [lidar_scan_660610840]: LIDAR SCAN DATA:
angle minimum: -3.1415927410125732
angle maximum: 3.1415927410125732
range minimum: 0.05000000074505806
range maximum: 25.0
Average distance (0° ± 5°): 0.171 m
mannaja@mannaja:~/study/ros_name_sensei_ws 122x16
mannaja@mannaja:~/study/ros_name_sensei_ws$ ros2 launch sllidar_ros2 sllidar_a3_launch.py
[INFO] [launch]: All log files can be found below /home/mannaja/.ros/log/2026-01-09-14-10-56-041589-mannaja-26046
[INFO] [launch]: Default logging verbosity is set to INFO
[INFO] [sllidar_node-1]: process started with pid [26049]
[sllidar_node-1] [INFO] [1767942656.130365826] [sllidar_node]: SLLidar running on ROS2 package SLLidar.ROS2 SDK Version:1.0.1, SLLIDAR SDK Version:2.1.0
[sllidar_node-1] [INFO] [1767942656.136776698] [sllidar_node]: SLLidar S/N: 9CC5ED93C0EA98C9A5E698F2091B4669
[sllidar_node-1] [INFO] [1767942656.136802500] [sllidar_node]: Firmware Ver: 1.32
[sllidar_node-1] [INFO] [1767942656.136806891] [sllidar_node]: Hardware Rev: 6
[sllidar_node-1] [INFO] [1767942656.137794586] [sllidar_node]: SLLidar health status : 0
[sllidar_node-1] [INFO] [1767942656.137805651] [sllidar_node]: SLLidar health status : OK.
[sllidar_node-1] [INFO] [1767942656.345764928] [sllidar_node]: current scan mode: Sensitivity, sample rate: 16 Khz, max_distance: 25.0 m, scan frequency:10.0 Hz,
```

# launch file

```
1 from launch import LaunchDescription
2 from launch_ros.actions import Node
3 from launch_ros.substitutions import FindPackageShare
4 from launch.substitutions import PathJoinSubstitution
5 from launch.launch_description_sources import PythonLaunchDescriptionSource
6 from launch.actions import IncludeLaunchDescription
7 from ament_index_python.packages import get_package_share_directory
8 import os
9
10 def generate_launch_description():
11     ld = LaunchDescription()
12
13     lidar_dir = get_package_share_directory('sllidar_ros2')
14
15     lidar_launch = IncludeLaunchDescription(
16         PythonLaunchDescriptionSource(
17             os.path.join(lidar_dir, 'launch', 'sllidar_a3_launch.py')
18         ),
19     )
20
21     lidar_listener = Node(
22         package="assign6_660610840",
23         executable="lidar_listener",
24         name="lidar_listener",
25         output="screen",
26     )
27
28     ld.add_action(lidar_listener)
29     ld.add_action(lidar_launch)
30
31     return ld
32
33 if __name__ == '__main__':
34     generate_launch_description()
35
```

## terminal ตอนรับ launch file

```
mannaja@mannaja: ~/study/ros_name_sensei_ws 122x68
mannaja@mannaja:~/study/ros_name_sensei_ws$ ^C
mannaja@mannaja:~/study/ros_name_sensei_ws$ ros2 launch assign6_660610840 name_sensei_launch.py
[INFO] [launch]: All log files can be found below /home/mannaja/.ros/log/2026-01-09-14-09-16-825792-mannaja-25859
[INFO] [launch]: Default logging verbosity is set to INFO
[INFO] [lidar_listener-1]: process started with pid [25862]
[INFO] [sllidar_node-2]: process started with pid [25863]
[sllidar_node-2] [INFO] [1767942556.916695521] [sllidar_node]: SLLidar running on ROS2 package SLLidar.ROS2 SDK Version:1.0.1, SLLIDAR SDK Version:2.1.0
[sllidar_node-2] [INFO] [1767942556.922115245] [sllidar_node]: SLLidar S/N: 9CC5ED93C0EA98C9A5E698F2091B4669
[sllidar_node-2] [INFO] [1767942556.922141100] [sllidar_node]: Firmware Ver: 1.32
[sllidar_node-2] [INFO] [1767942556.922145487] [sllidar_node]: Hardware Rev: 6
[sllidar_node-2] [INFO] [1767942556.922837345] [sllidar_node]: SLLidar health status : 0
[sllidar_node-2] [INFO] [1767942556.922851922] [sllidar_node]: SLLidar health status : OK.
[sllidar_node-2] [INFO] [1767942557.128498278] [sllidar_node]: current scan mode: Sensitivity, sample rate: 16 Khz, max_distance: 25.0 m, scan frequency:10.0 Hz,
[lidar_listener-1] [INFO] [1767942558.639334184] [lidar_listener]: LIDAR SCAN DATA:
[lidar_listener-1] angle minimum: -3.1415927410125732
[lidar_listener-1] angle maximum: 3.1415927410125732
[lidar_listener-1] range minimum: 0.05000000074505806
[lidar_listener-1] range maximum: 25.0
[lidar_listener-1] Average distance (0° ± 5°): 0.417 m
[lidar_listener-1] [INFO] [1767942558.736883831] [lidar_listener]: LIDAR SCAN DATA:
[lidar_listener-1] angle minimum: -3.1415927410125732
[lidar_listener-1] angle maximum: 3.1415927410125732
[lidar_listener-1] range minimum: 0.05000000074505806
[lidar_listener-1] range maximum: 25.0
[lidar_listener-1] Average distance (0° ± 5°): 0.417 m
[lidar_listener-1] [INFO] [1767942558.841197488] [lidar_listener]: LIDAR SCAN DATA:
[lidar_listener-1] angle minimum: -3.1415927410125732
[lidar_listener-1] angle maximum: 3.1415927410125732
[lidar_listener-1] range minimum: 0.05000000074505806
[lidar_listener-1] range maximum: 25.0
[lidar_listener-1] Average distance (0° ± 5°): 0.417 m
[lidar_listener-1] [INFO] [1767942558.939359019] [lidar_listener]: LIDAR SCAN DATA:
[lidar_listener-1] angle minimum: -3.1415927410125732
[lidar_listener-1] angle maximum: 3.1415927410125732
[lidar_listener-1] range minimum: 0.05000000074505806
[lidar_listener-1] range maximum: 25.0
[lidar_listener-1] Average distance (0° ± 5°): 0.417 m
[lidar_listener-1] [INFO] [1767942559.037618026] [lidar_listener]: LIDAR SCAN DATA:
[lidar_listener-1] angle minimum: -3.1415927410125732
[lidar_listener-1] angle maximum: 3.1415927410125732
[lidar_listener-1] range minimum: 0.05000000074505806
[lidar_listener-1] range maximum: 25.0
[lidar_listener-1] Average distance (0° ± 5°): 0.418 m
[lidar_listener-1] [INFO] [1767942559.135675691] [lidar_listener]: LIDAR SCAN DATA:
[lidar_listener-1] angle minimum: -3.1415927410125732
[lidar_listener-1] angle maximum: 3.1415927410125732
[lidar_listener-1] range minimum: 0.05000000074505806
[lidar_listener-1] range maximum: 25.0
[lidar_listener-1] Average distance (0° ± 5°): 0.418 m
[lidar_listener-1] [INFO] [1767942559.234182031] [lidar_listener]: LIDAR SCAN DATA:
[lidar_listener-1] angle minimum: -3.1415927410125732
[lidar_listener-1] angle maximum: 3.1415927410125732
[lidar_listener-1] range minimum: 0.05000000074505806
[lidar_listener-1] range maximum: 25.0
[lidar_listener-1] Average distance (0° ± 5°): 0.417 m
[lidar_listener-1] [INFO] [1767942559.326610065] [lidar_listener]: LIDAR SCAN DATA:
[lidar_listener-1] angle minimum: -3.1415927410125732
[lidar_listener-1] angle maximum: 3.1415927410125732
[lidar_listener-1] range minimum: 0.05000000074505806
[lidar_listener-1] range maximum: 25.0
[lidar_listener-1] Average distance (0° ± 5°): 0.417 m
[lidar_listener-1] [INFO] [1767942559.418227173] [lidar_listener]: LIDAR SCAN DATA:
[lidar_listener-1] angle minimum: -3.1415927410125732
[lidar_listener-1] angle maximum: 3.1415927410125732
[lidar_listener-1] range minimum: 0.05000000074505806
[lidar_listener-1] range maximum: 25.0
[lidar_listener-1] Average distance (0° ± 5°): 0.416 m
```