https://github.com/sohicode/ros2_basics/



```
package
패키지 생성
 $ cd ~/Workspaces/ros2 ws/src
 $ ros2 pkg create rpm_topic_pkg --build-type
   ament_python --dependencies rclpy std_msgs
                                    Float32.msg
메시지 인터페이스
참고사이트: https://github.com/ros2/common interfaces/blob
               /foxy/std_msgs/msg/Float32.msg
float32 data
                                     rpm_pub.py
rpm값 토픽 발행 프로그램 파일
```

```
$my_ws/src/rpm_topic_pkg/rpm_topic_pkg/rpm_pub.py
import rclpy
from rclpy.node import Node
from std msgs.msg import Float32
RPM = 10
class RpmPublisher(Node):
   def __init__(self):
        super().__init__('rpm_pub_node')
        self.pub = self.create_publisher(Float32,
'rpm_topic', 10)
        self.timer = self.create_timer(2,
self.rpm pub cb)
        self.get logger().info('RPM Publisher Node
Running...')
   def rpm_pub_cb(self):
        msg = Float32()
        msg.data = float(RPM)
        self.pub.publish(msg)
        self.get_logger().info('Published message: '
+ str(msg.data))
def main(args=None):
   rclpy.init(args=args)
   node = RpmPublisher()
   try:
        rclpy.spin(node)
   except KeyboardInterrupt:
        node.get_logger().info('Keyboard Interrupt')
   finally:
        node.destroy_node()
        rclpy.shutdown()
if __name__ == '__main__':
   main()
```

```
setup.py
파이썬 패키지 설정 파일
$my_ws/src/rpm_topic_pkg
'console_scripts': [
  'rpm_pub_script = rpm_topic_pkg.rpm_pub:main',
  'speed_calc_script = <mark>rpm_topic_pkg.speed_calc</mark>:main'
],
```

```
speed calc.py
rpm 토픽 수신 &
rpm으로 계산한 speed 토픽 발생 프로그램 파일
$my ws/src/rpm topic pkg/rpm topic pkg/speed calc.py
import rclpy
from rclpy.node import Node
from std msgs.msg import Float32
WHEEL RADIUS = 12.5 / 100
class SpeedCalculator(Node):
    def __init__(self):
        super().__init__('speed_calc_node')
        self.sub = self.create subscription(Float32,
'rpm_topic', self.speed_calc_cb, 10)
        self.pub = self.create publisher(Float32,
'speed_topic', 10)
        self.get_logger().info('Speed Calculator Node
Started...')
    def speed calc cb(self, rpm msg):
        self.get_logger().info('Received rpm message:
 + str(rpm msg.data))
        speed = rpm_msg.data * WHEEL_RADIUS * 2 *
3.14159 / 60 # speed in m/s
        speed_msg = Float32()
        speed msg.data = float(speed)
        self.pub.publish(speed msg)
        self.get logger().info('Published speed
message: ' + str(speed_msg.data))
def main(args=None):
    rclpy.init(args=args)
    node = SpeedCalculator()
    try:
        rclpy.spin(node)
    except KeyboardInterrupt:
        node.get logger().info('Keyboard Interrupt')
    finally:
        node.destroy node()
        rclpy.shutdown()
if __name__ == '__main__':
    main()
```

```
build.
$ cd ~/Workspaces/ros2_ws
```

\$ colcon build \$ source ./install/setup.bash

```
run
노드 실행
 $ ros2 pkg executables rpm_topic_pkg
 $ ros2 run rpm_topic_pkg speed_calc_script
 $ ros2 run rpm_topic_pkg rpm_pub_script
 두 개의 창에 각각 실행함
```