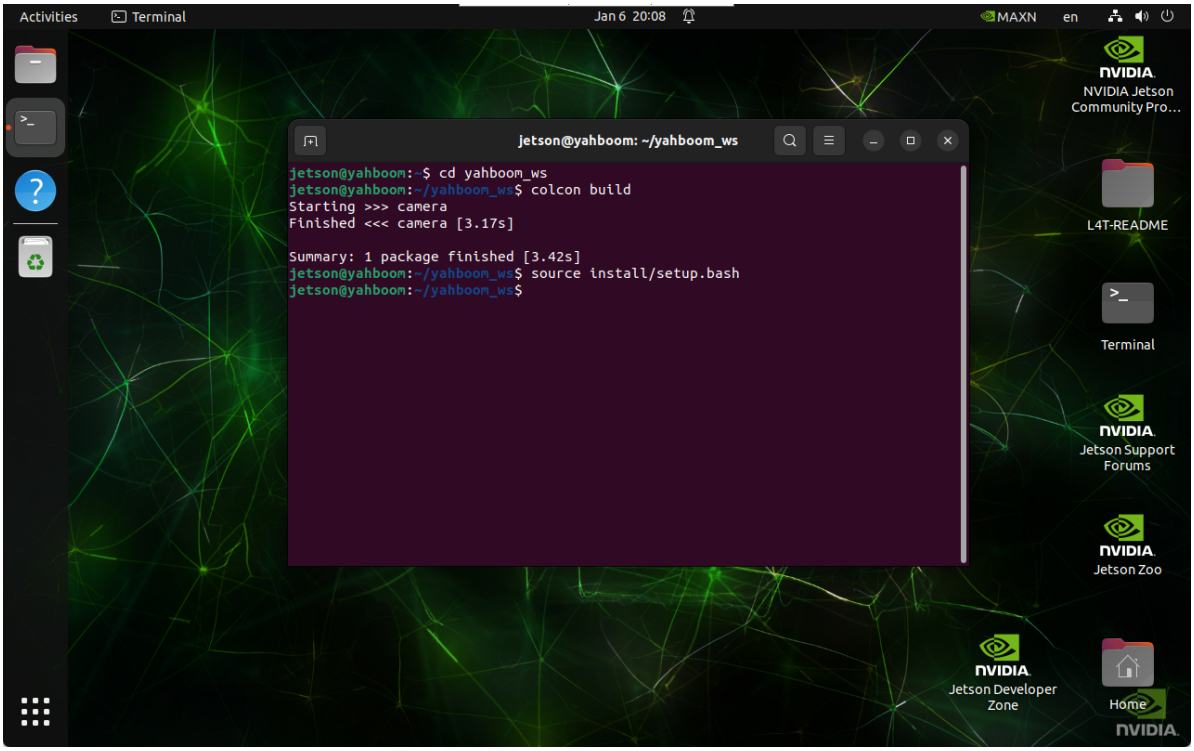
Camera Preview (USB)

1. Compile the function package

```
cd ~/yahboom_ws
```

```
colcon build
```

```
source install/setup.bash
```



2. Start the camera

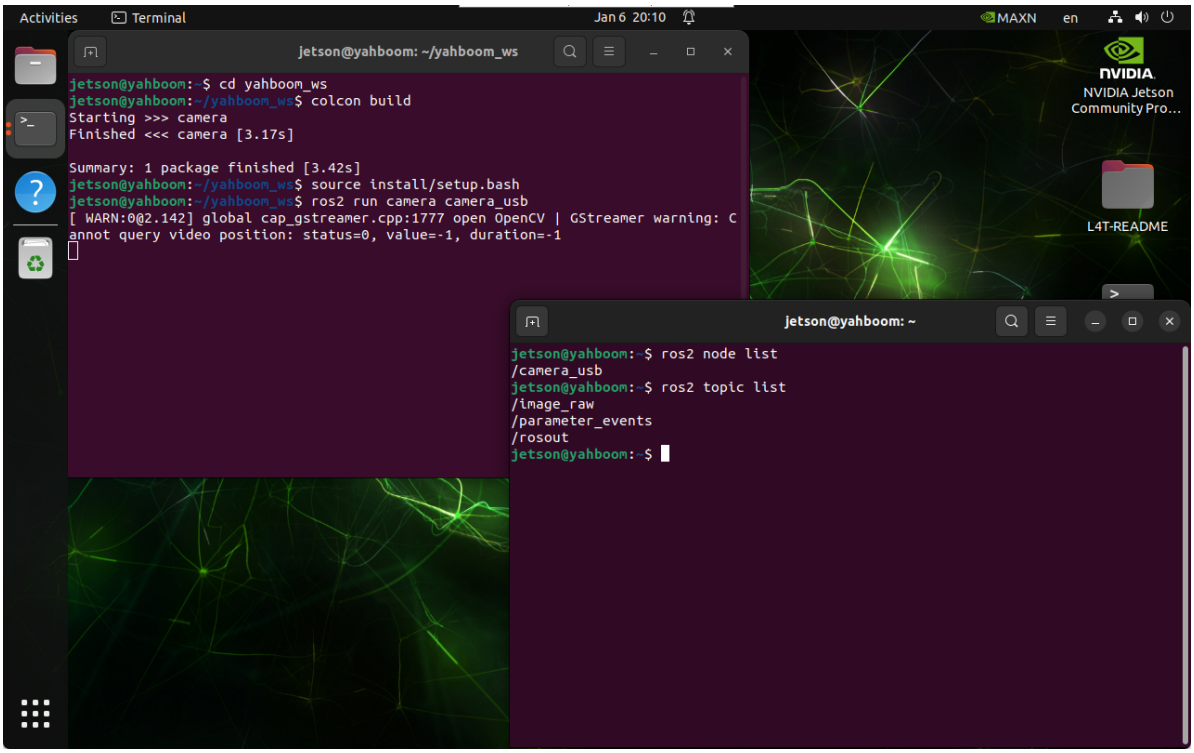
> Start the camera

```
ros2 run camera camera_usb
```

> View nodes and topics

```
ros2 node list
```

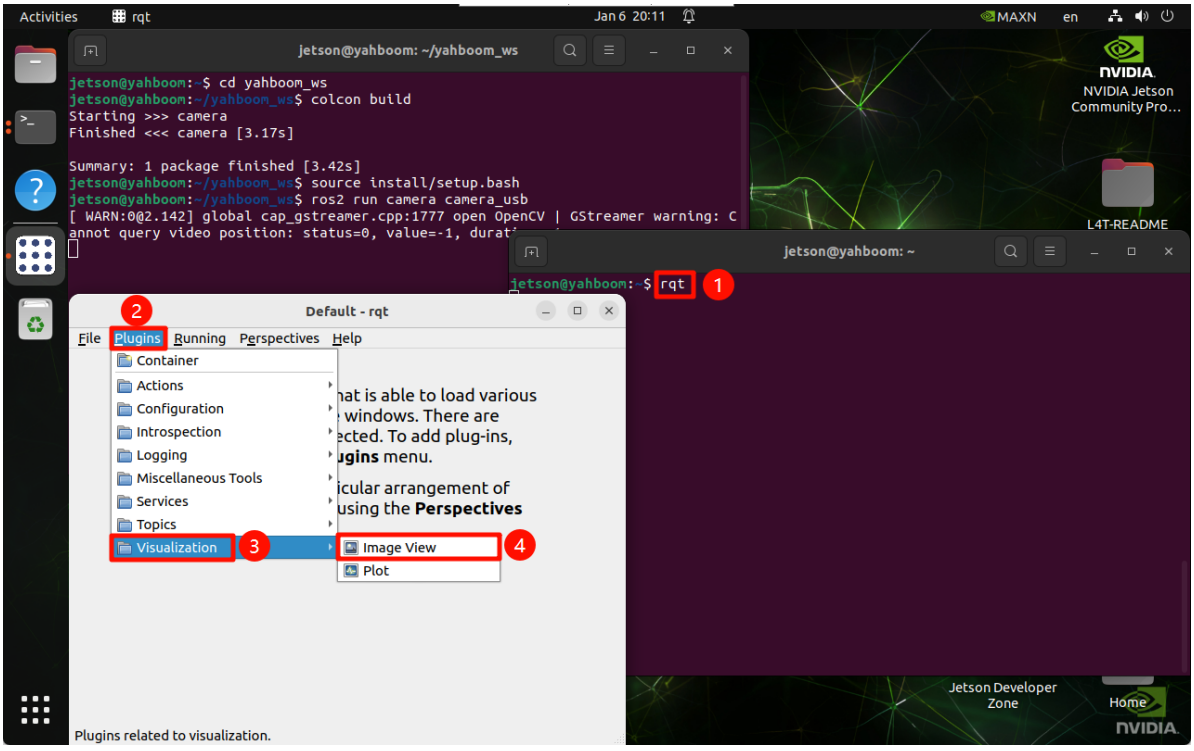
```
ros2 topic list
```

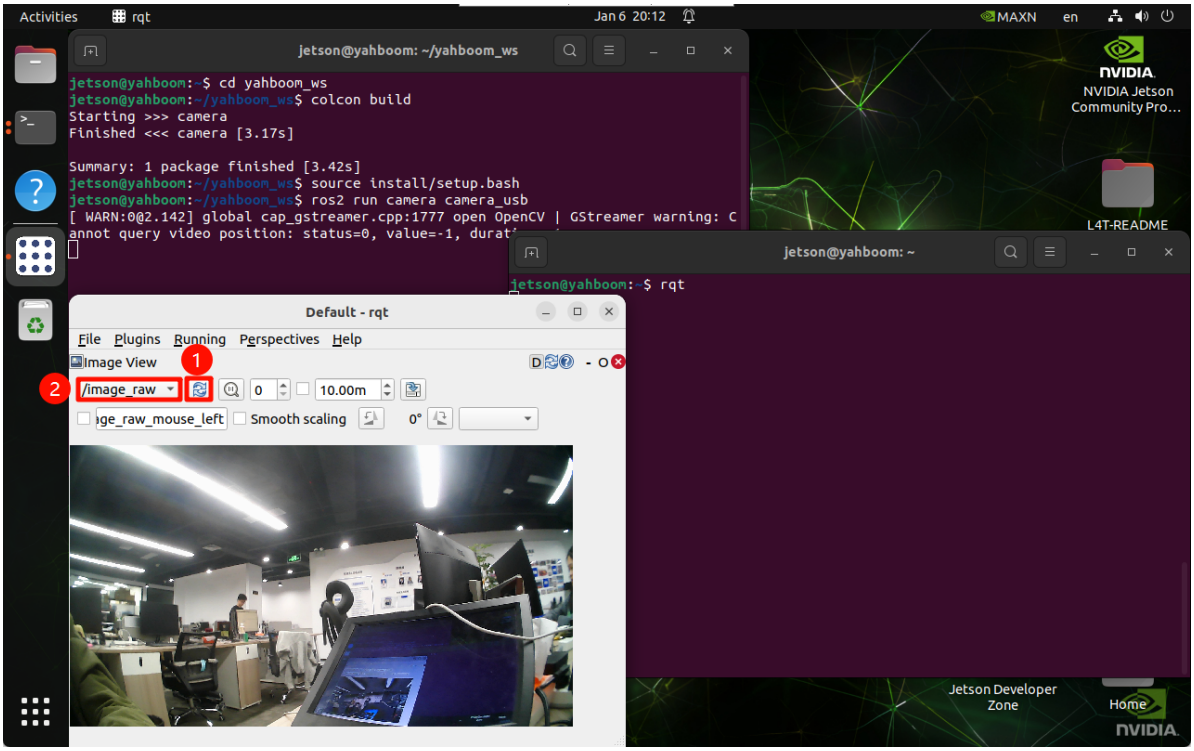


3. Preview screen

Use rqt to view the screen corresponding to the camera: rqt → Plugins → Visualization → Image View

```
rqt
```





4. Main code

```
import rclpy
from rclpy.node import Node
from sensor_msgs.msg import Image
from cv_bridge import CvBridge
import cv2

class CameraNode(Node):
    def __init__(self):
        super().__init__('camera_usb')
        self.publisher = self.create_publisher(Image, 'image_raw', 10)
        self.bridge = CvBridge()

        self.cap = cv2.VideoCapture(0)
        if not self.cap.isOpened():
            self.get_logger().error('Unable to open camera')
            return

        self.timer = self.create_timer(0.05, self.timer_callback)

    def timer_callback(self):
        ret, frame = self.cap.read()
        if ret:
            image_msg = self.bridge.cv2_to_imgmsg(frame, encoding="bgr8")
            self.publisher.publish(image_msg)
        else:
            self.get_logger().warn('Failed to capture image')

def main(args=None):
    rclpy.init(args=args)
    node = CameraNode()
    rclpy.spin(node)

    node.cap.release()
```

```
    rclpy.shutdown()

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