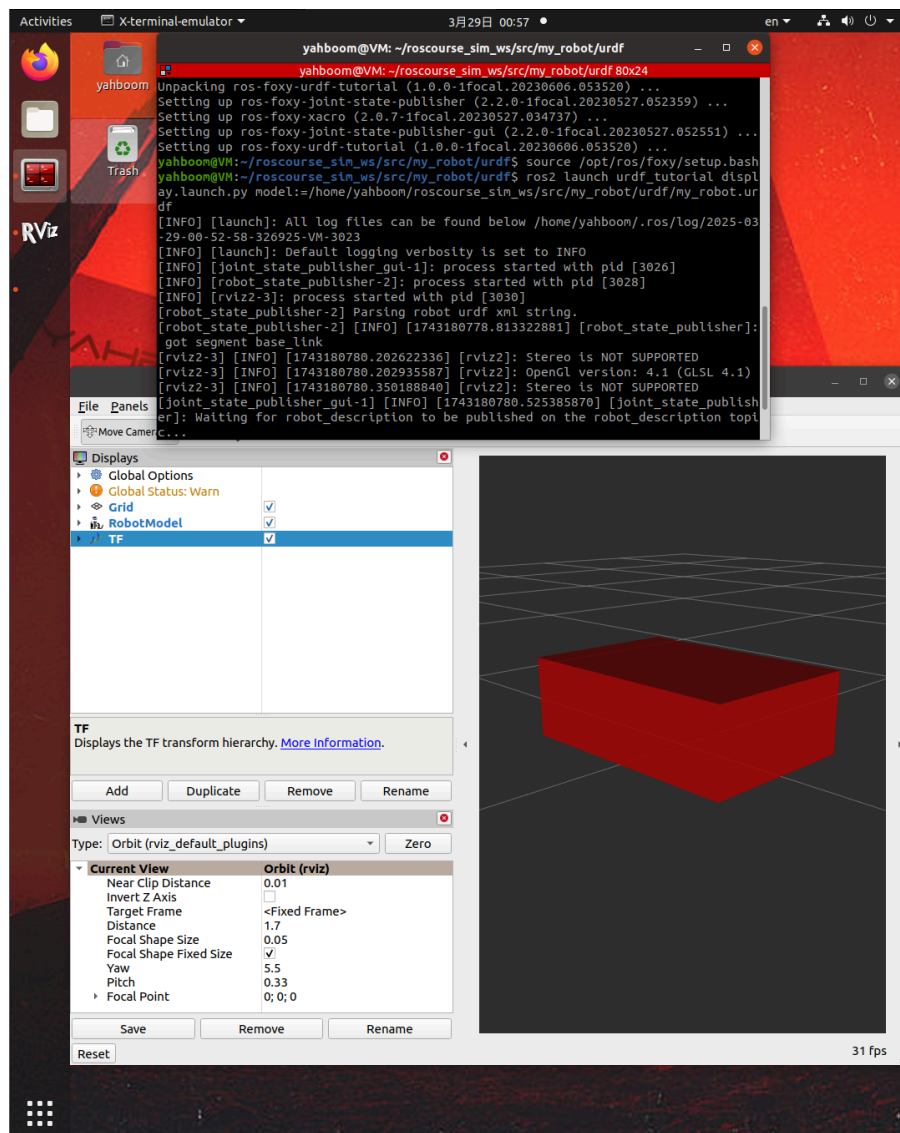


# Task1

step8:

```
yahboom@VM: ~/roscourse_sim_ws/src/my_robot/urdf
yahboom@VM: ~/roscourse_sim_ws/src/my_robot/urdf 80x24
GNU nano 4.8 my_robot.urdf
<?xml version="1.0"?>
<robot name="my_robot">
  <link name="base_link">
    <visual>
      <geometry>
        <box size="0.6 0.4 0.2" />
      </geometry>
      <origin xyz="0 0 0.1" rpy="0 0 0" />
    </visual>
  </link>
</robot>
```



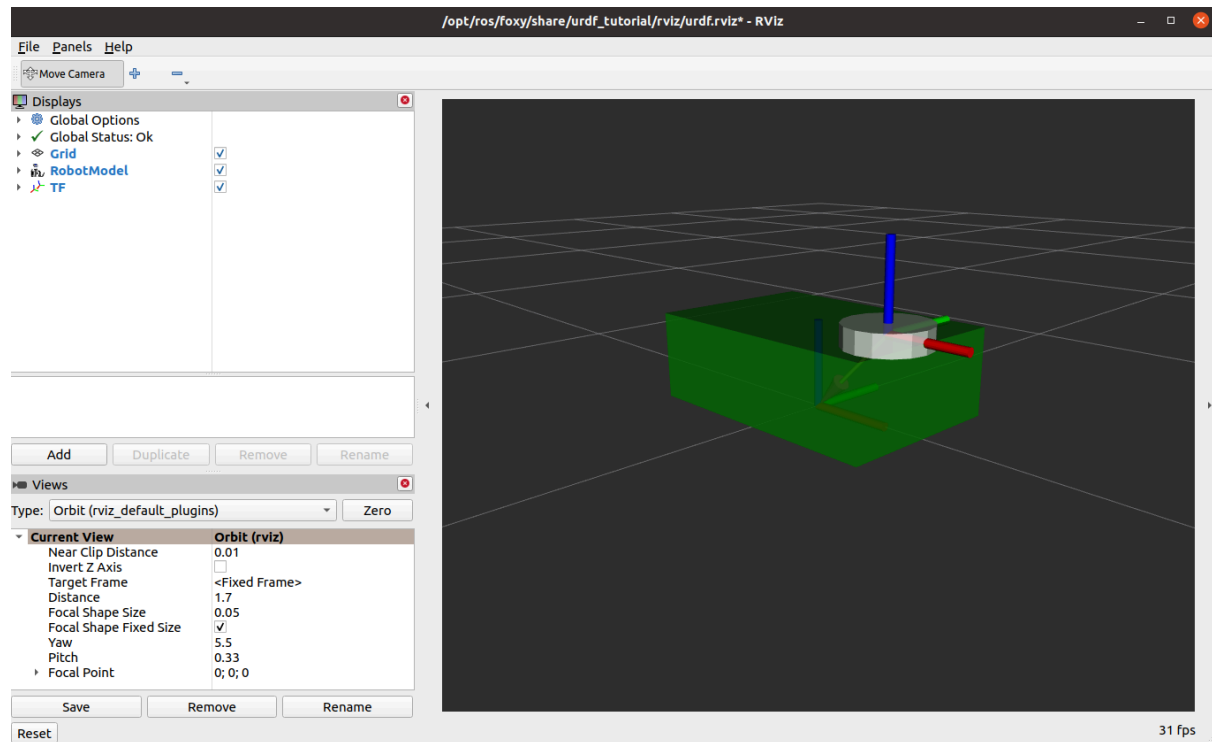
## Required question: What happens if you try to run the demo now? Why?

If you run the demo now, Rviz will only show one link, and the other link will not be shown.

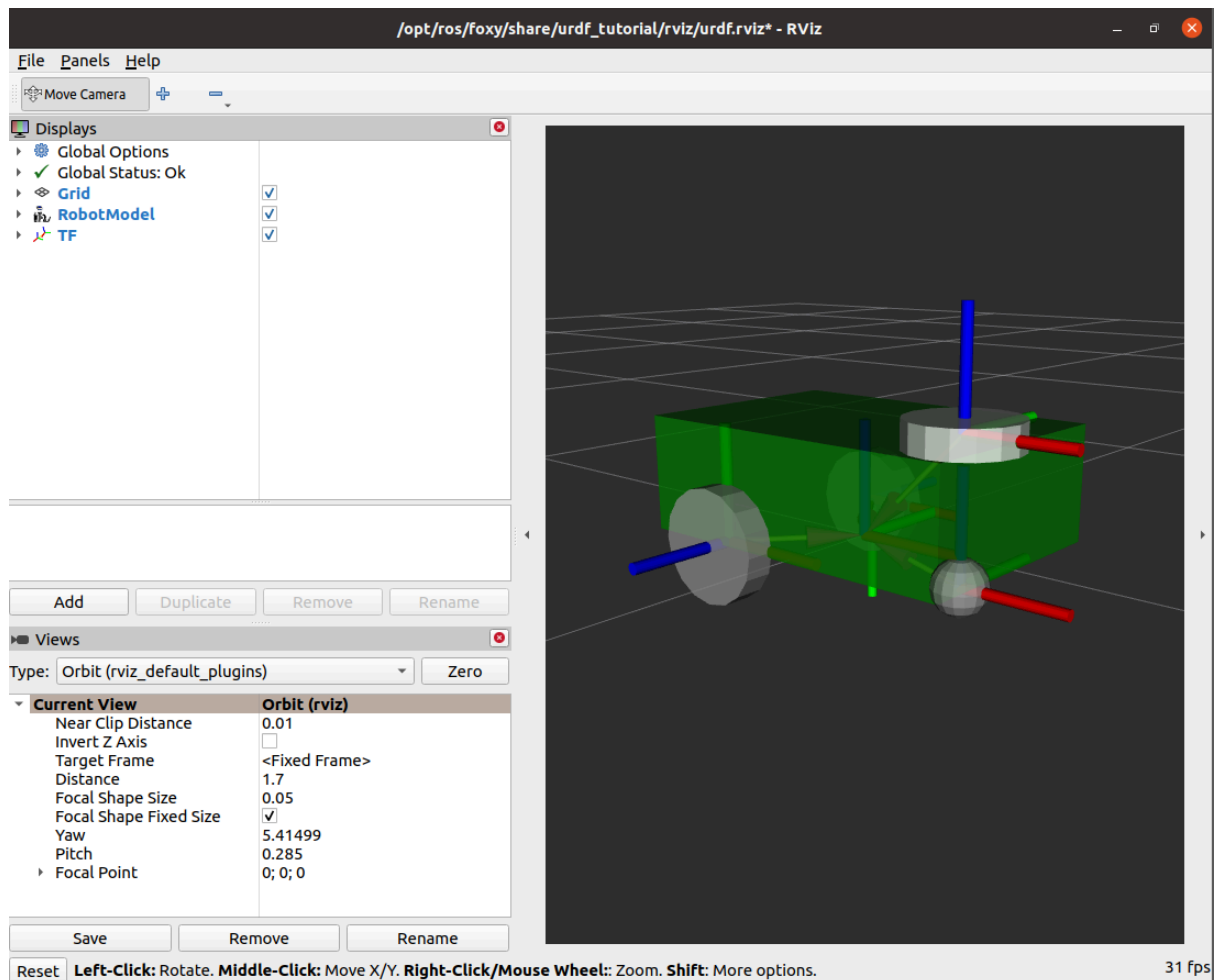
This is because there is no joint connecting the two links in the URDF file.

robot\_state\_publisher needs to know the relationship between them to publish the coordinate transformation. If there is no joint, there is no coordinate transformation between them.

### step18



## step36



```

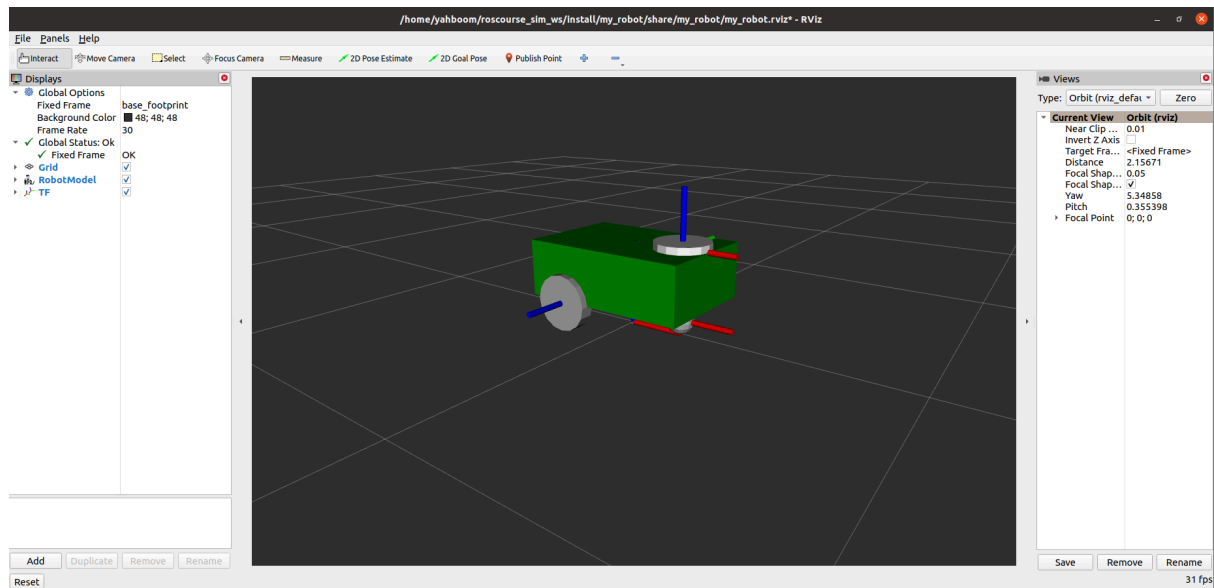
55 <link name="caster_wheel">
56   <visual>
57     <geometry>
58       <sphere radius="0.05" />
59     </geometry>
60     <origin xyz="0 0 0" rpy="0 0 0" />
61     <material name="gray" />
62   </visual>
63 </link>

85 <joint name="base_caster_wheel_joint" type="fixed">
86   <parent link="base_link"/>
87   <child link="caster_wheel"/>
88   <origin xyz="0.2 0 -0.05" rpy="0 0 0" />
89 </joint>

```

# Task2

## step6



**REQUIRED Question: What are some of the nodes in the launch file and what do they do?**

There are two nodes in the launch file: robot\_state\_publisher and rviz2.

robot\_state\_publisher will read the URDF file and publish the position relationship of each link. rviz2 will open the visualization interface to display the robot model.

# Task3

## step3

