**ROS Rviz Assignment Source Code**

**Task1 :**

**STEP 1: Install and Use RVIZ and Other Packages**

**To install the RVIZ in Noetic:**

sudo apt-get install ros-noetic-rviz

**To start, open a new terminal and stan (make sure that ROS is properly sourced)**

roscore

**Then, open a new terminal and start RVIZ (make sure that ROS is properly sourced)**

rosrun rviz rviz

**INSTALL FOR URDF MODELING**

sudo apt-get install ros-noetic-urdf

**To check the urdf file we need to install**

sudo apt-get install liburdfdom-tools

**STEP 2: CREATE THE WORKSPACE AND CATKIN PACKAGE**

**Navigate to Your ROS Workspace:**

cd ~/catkin\_ws/src

**Create a Package:**

catkin\_create\_pkg *rviz\_assignment* rospy tf2 geometry\_msgs urdf ryiz joint\_state\_publisher\_gui

cd rviz\_assignment

mkdir urdf

mkdir launch

**Create a URDF File:**

cd urdf

gedit *single\_link.urdf*

**Add the following code to it:**

<?xml version="1.0"?>

<robot name="single\_link\_robot">

<link name="link1">

<visual>

<geometry>

<box size="1 1 1"/> <!-- A cube of 1x1x1 dimensions -->

</geometry>

<material name="blue">

<color rgba="0 0 1 1"/> <!-- Blue color -->

</material>

</visual>

</link>

</robot>

**Go back to catkin\_ws/src/rviz\_assignment:**

cd ..

**Create a launch file:**

cd launch

gedit single\_link.launch

**Add the following code to it:**

<?xml version="1.0"?>

<launch>

<!-- Run RViz with the configuration file -->

<node name="rviz" pkg="rviz" type="rviz" args="-d $(find rviz\_assignment)/single\_link.rviz" required="true" />

<!-- Load the URDF file into the parameter server -->

<param name="robot\_description" textfile="$(find rviz\_assignment)/urdf/single\_link.urdf"/>

<!-- Run a dummy joint\_state\_publisher node (if needed) -->

<node name="joint\_state\_publisher" pkg="joint\_state\_publisher" type="joint\_state\_publisher"/>

</launch>

**Go back to the original workspace:**

cd ~/catkin\_ws

**Then do:**

catkin\_make

**In another terminal do:**

roscore

**Go back to original terminal:**

roslaunch rviz\_assignment single\_link.launch