**Folder Structure**

mini\_arm\_urdf/

├── launch/

│ └── display.launch

├── urdf/

│ └── mini\_arm.urdf

├── meshes/ (optional, if you want to add STL or DAE models)

└── package.xml

**🦿 Step 1: URDF File — urdf/mini\_arm.urdf**

<?xml version="1.0"?>

<robot name="mini\_arm">

<!-- Base Link -->

<link name="base\_link">

<visual>

<geometry>

<box size="0.2 0.2 0.05"/>

</geometry>

<material name="gray">

<color rgba="0.6 0.6 0.6 1"/>

</material>

</visual>

</link>

<!-- First Arm Link -->

<link name="link1">

<visual>

<geometry>

<cylinder length="0.4" radius="0.03"/>

</geometry>

<material name="blue">

<color rgba="0 0 1 1"/>

</material>

</visual>

</link>

<!-- Second Arm Link -->

<link name="link2">

<visual>

<geometry>

<cylinder length="0.3" radius="0.025"/>

</geometry>

<material name="green">

<color rgba="0 1 0 1"/>

</material>

</visual>

</link>

<!-- Joint 1: Revolute -->

<joint name="joint1" type="revolute">

<parent link="base\_link"/>

<child link="link1"/>

<origin xyz="0 0 0.05" rpy="0 0 0"/>

<axis xyz="0 0 1"/>

<limit effort="10" velocity="1.0" lower="-1.57" upper="1.57"/>

</joint>

<!-- Joint 2: Revolute -->

<joint name="joint2" type="revolute">

<parent link="link1"/>

<child link="link2"/>

<origin xyz="0 0 0.4" rpy="0 0 0"/>

<axis xyz="0 0 1"/>

<limit effort="10" velocity="1.0" lower="-1.57" upper="1.57"/>

</joint>

</robot>

**🚀 Step 2: Launch File — launch/display.launch**

<launch>

<arg name="model" default="$(find mini\_arm\_urdf)/urdf/mini\_arm.urdf"/>

<param name="robot\_description" command="$(find xacro)/xacro $(arg model)"/>

<node pkg="rviz" type="rviz" name="rviz" args="-d $(find mini\_arm\_urdf)/rviz\_config/mini\_arm.rviz" required="false"/>

</launch>

*(You can also visualize using roslaunch mini\_arm\_urdf display.launch)*

**🧠 Step 3: Run it**

If you’re using **ROS Noetic** or similar:

cd ~/catkin\_ws/src

catkin\_create\_pkg mini\_arm\_urdf urdf rviz

# Place files inside mini\_arm\_urdf folder

cd ~/catkin\_ws

catkin\_make

source devel/setup.bash

roslaunch mini\_arm\_urdf display.launch