AI-Task3-arm

after installing ROS successfully next is installing the arm package. Following the instruction in this link.

Starting from this step "mkdir -p ~/catkin_ws/src" https://s-m.com.sa/ros.txt and changing the version form kinetic to noetic

also changing this step (source /home/wesam/catkin_ws/devel/setup.bash)

To

(source /home/walaa/catkin_ws/devel/setup.bash)

The steps; mkdir -p ~/catkin_ws/src

cd ~/catkin_ws/

catkin_make

cd ~/catkin_ws/src

git clone https://github.com/smart-methods/arduino_robot_arm.git

cd ~/catkin_ws

rosdep install --from-paths src --ignore-src -r -y

sudo apt-get install ros-noetic-moveit

sudo apt-get install ros-noetic-joint-state-publisher ros-noetic-joint-state-publisher-gui

sudo apt-get install ros-noetic-gazebo-ros-control joint-state-publisher

sudo apt-get install ros-noetic-ros-controllers ros-noetic-ros-control

sudo nano ~/.bashrc

at the end of the (bashrc) file add the follwing line (source /home/walaa/catkin_ws/devel/setup.bash) then ctrl + o

source ~/.bashrc

roslaunch robot_arm_pkg check_motors.launch

Terminal / Displays panel (top screenshot)

```
Global Options
    Fixed Frame              base
    Background Color         48; 48; 48
    Frame Rate               ٣٠
    Default Light            ✓
Global Status: Ok
    Fixed Frame              OK
Grid                         ✓
Axes                         ✓
    Status: Ok
    Reference Frame          <Fixed Frame>
    Length                   ١
    Radius                   ٠,٠١٠
    Show Trail               ☐
    Alpha                    ١
RobotModel                   ✓
    Status: Ok
    Visual Enabled           ✓
    Collision Enabled        ☐
    Update Interval          ٠
    Alpha                    ٠,٠
    Robot Description        robot_description
    TF Prefix
    Links
        Link Tree Style      Links in Alphabetic O...
        Expand Link D...     ✓
        All Links Enabl...   ✓
        arm1                 ✓
```

Terminal output (top right)

```
/home/walaa/catkin_ws/src/arduino_robot_arm/robot_arm_pkg/lau...

SUMMARY
========

PARAMETERS
 * /robot_description: <?xml version="1....
 * /rosdistro: noetic
 * /rosversion: 1.15.14

NODES
 /
    joint_state_publisher_gui (joint_state_publisher_gui/joint_state_publisher_gui)
    robot_state_publisher (robot_state_publisher/robot_state_publisher)
    rviz (rviz/rviz)

auto-starting new master
process[master]: started with pid [7883]
ROS_MASTER_URI=http://localhost:11311

setting /run_id to 53c0ed46-0ba9-11ed-ba84-a77280d1018f
process[rosout-1]: started with pid [7893]
started core service [/rosout]
process[robot_state_publisher-2]: started with pid [7896]
process[rviz-3]: started with pid [7897]
process[joint_state_publisher_gui-4]: started with pid [7902]
[ WARN] [1658705740.978943387]: The root link base has an inertia specified in the URDF, but KDL does not support a root link with an inertia. As a workaround, you can add an extra dummy link to your URDF.
[INFO] [1658705742.543422]: Centering
```

RViz window (bottom screenshot)

File   Panels   Help

Interact | Move Camera | Select | Focus Camera | Measure | 2D Pose Estimate | 2D Nav Goal | Publish Point

Displays

```
Global Options
    Fixed Frame              base
    Background Color         48; 48; 48
    Frame Rate               ٣٠
    Default Light            ✓
Global Status: Ok
    Fixed Frame              OK
Grid                         ✓
Axes                         ✓
    Status: Ok
    Reference Frame          <Fixed Frame>
    Length                   ١
    Radius                   ٠,٠١٠
    Show Trail               ☐
    Alpha                    ١
RobotModel                   ✓
    Status: Ok
    Visual Enabled           ✓
    Collision Enabled        ☐
    Update Interval          ٠
    Alpha                    ٠,٠
    Robot Description        robot_description
    TF Prefix
    Links
        Link Tree Style      Links in Alphabetic O...
        Expand Link D...     ✓
        All Links Enabl...   ✓
        arm1                 ✓
```

Add | Duplicate | Remove | Rename

Views

Type: Orbit (rviz)   Zero

```
Current View         Orbit (rviz)
    Near Clip ...    ٠,٠١
    Invert Z Axis    ☐
    Target Fra...    <Fixed Frame>
    Distance         ٤,٩٤٩٨٢
    Focal Shap...    ٠,٠٥
    Focal Shap...    ✓
    Yaw              ١,١١٥٤
    Pitch            ٠,٥٢٠٣٩٨
    Field of Vi...   ٠,٧٨٥٣٩٨
    Focal Point      -1.2241; -2.4556;...
```

Save | Remove | Rename