Installing the robotic arm package

1-


```
muhrah3@muhrah3-VirtualBox:~$ sudo apt-get install ros-noetic-catkin
[sudo] password for muhrah3:
Reading package lists... Done
Building dependency tree
Reading state information... Done
ros-noetic-catkin is already the newest version (0.8.10-1focal.20210423.221558)
.
ros-noetic-catkin set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 229 not upgraded.
muhrah3@muhrah3-VirtualBox:~$
```

2-


```
muhrah3@muhrah3-VirtualBox:~$ mkdir -p ~/catkin_ws/src
muhrah3@muhrah3-VirtualBox:~$ cd ~/catkin_ws/
muhrah3@muhrah3-VirtualBox:~/catkin_ws$
```

3-

```
muhrah3@muhrah3-VirtualBox:~/catkin_ws$ catkin_make
Base path: /home/muhrah3/catkin_ws
Source space: /home/muhrah3/catkin_ws/src
B          : /home/muhrah3/catkin_ws/build
  Rhythmbox
D          : /home/muhrah3/catkin_ws/devel
Install space: /home/muhrah3/catkin_ws/install
Creating symlink "/home/muhrah3/catkin_ws/src/CMakeLists.txt" pointing to "/opt
/ros/noetic/share/catkin/cmake/toplevel.cmake"
####
#### Running command: "cmake /home/muhrah3/catkin_ws/src -DCATKIN_DEVEL_PREFIX=
/home/muhrah3/catkin_ws/devel -DCMAKE_INSTALL_PREFIX=/home/muhrah3/catkin_ws/in
stall -G Unix Makefiles" in "/home/muhrah3/catkin_ws/build"
####
-- The C compiler identification is GNU 9.4.0
-- The CXX compiler identification is GNU 9.4.0
-- Check for working C compiler: /usr/bin/cc
-- Check for working C compiler: /usr/bin/cc -- works
-- Detecting C compiler ABI info
-- Detecting C compiler ABI info - done
-- Detecting C compile features
-- Detecting C compile features - done
-- Check for working CXX compiler: /usr/bin/c++
-- Check for working CXX compiler: /usr/bin/c++ -- works
-- Detecting CXX compiler ABI info
-- Detecting CXX compiler ABI info - done
-- Detecting CXX compile features
-- Detecting CXX compile features - done
-- Using CATKIN_DEVEL_PREFIX: /home/muhrah3/catkin_ws/devel
-- Using CMAKE PREFIX PATH: /opt/ros/noetic
```

4-

```
muhrah3@muhrah3-VirtualBox:~/catkin_ws$ cd ~/catkin_ws/src
muhrah3@muhrah3-VirtualBox:~/catkin_ws/src$ git clone https://github.com/smart-
methods/arduino_robot_arm.git
Cloning into 'arduino_robot_arm'...
remote: Enumerating objects: 206, done.
remote: Counting objects: 100% (164/164), done.
remote: Compressing objects: 100% (92/92), done.
remote: Total 206 (delta 82), reused 145 (delta 66), pack-reused 42
Receiving objects: 100% (206/206), 1.24 MiB | 486.00 KiB/s, done.
Resolving deltas: 100% (85/85), done.
muhrah3@muhrah3-VirtualBox:~/catkin_ws/src$ cd ~/catkin_ws
muhrah3@muhrah3-VirtualBox:~/catkin_ws$
```

5-

```
muhrah3@muhrah3-VirtualBox:~/catkin_ws$ rosdep install --from-paths src --ignor
e-src -r -y
executing command [sudo -H apt-get install -y ros-noetic-moveit-ros-planning]
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  ros-noetic-eigen-stl-containers ros-noetic-fcl ros-noetic-geometric-shapes
  ros-noetic-moveit-core ros-noetic-moveit-msgs
  ros-noetic-moveit-ros-occupancy-map-monitor
  ros-noetic-object-recognition-msgs ros-noetic-octomap
  ros-noetic-octomap-msgs ros-noetic-pybind11-catkin
  ros-noetic-random-numbers ros-noetic-srdfdom ros-noetic-urdfdom-py
The following NEW packages will be installed:
  ros-noetic-eigen-stl-containers ros-noetic-fcl ros-noetic-geometric-shapes
  ros-noetic-moveit-core ros-noetic-moveit-msgs
  ros-noetic-moveit-ros-occupancy-map-monitor ros-noetic-moveit-ros-planning
  ros-noetic-object-recognition-msgs ros-noetic-octomap
  ros-noetic-octomap-msgs ros-noetic-pybind11-catkin
  ros-noetic-random-numbers ros-noetic-srdfdom ros-noetic-urdfdom-py
0 upgraded, 14 newly installed, 0 to remove and 229 not upgraded.
Need to get 4975 kB of archives.
After this operation, 52.4 MB of additional disk space will be used.
Get:1 http://packages.ros.org/ros/ubuntu focal/main amd64 ros-noetic-eigen-stl-
containers amd64 0.1.8-1focal.20210423.224824 [6824 B]
Get:2 http://packages.ros.org/ros/ubuntu focal/main amd64 ros-noetic-octomap am
d64 1.9.8-1focal.20220514.014451 [195 kB]
Get:3 http://packages.ros.org/ros/ubuntu focal/main amd64 ros-noetic-fcl amd64
0.6.1-3focal.20220515.061114 [1188 kB]
```

6-

```
muhrah3@muhrah3-VirtualBox:~/catkin_ws$ sudo apt-get install ros-noetic-moveit
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  python3-pyassimp ros-noetic-chomp-motion-planner
  ros-noetic-moveit-commander ros-noetic-moveit-planners
  ros-noetic-moveit-planners-chomp ros-noetic-moveit-plugins
  ros-noetic-moveit-ros ros-noetic-moveit-ros-benchmarks
  ros-noetic-moveit-ros-control-interface
  ros-noetic-moveit-simple-controller-manager
  ros-noetic-pilz-industrial-motion-planner
The following NEW packages will be installed:
  python3-pyassimp ros-noetic-chomp-motion-planner ros-noetic-moveit
  ros-noetic-moveit-commander ros-noetic-moveit-planners
  ros-noetic-moveit-planners-chomp ros-noetic-moveit-plugins
  ros-noetic-moveit-ros ros-noetic-moveit-ros-benchmarks
  ros-noetic-moveit-ros-control-interface
  ros-noetic-moveit-simple-controller-manager
  ros-noetic-pilz-industrial-motion-planner
0 upgraded, 12 newly installed, 0 to remove and 229 not upgraded.
Need to get 1228 kB of archives.
After this operation, 6062 kB of additional disk space will be used.
Do you want to continue? [Y/n]
```

7-

```
muhrah3@muhrah3-VirtualBox:~/catkin_ws$ sudo apt-get install ros-noetic-joint-s
tate-publisher ros-noetic-joint-state-publisher-gui
Reading package lists... Done
Building dependency tree
Reading state information... Done
ros-noetic-joint-state-publisher is already the newest version (1.15.1-1focal.2
0220218.093002).
ros-noetic-joint-state-publisher set to manually installed.
ros-noetic-joint-state-publisher-gui is already the newest version (1.15.1-1foc
al.20220218.093511).
ros-noetic-joint-state-publisher-gui set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 229 not upgraded.
muhrah3@muhrah3-VirtualBox:~/catkin_ws$
```

8-

```
muhrah3@muhrah3-VirtualBox:~/catkin_ws$ sudo apt-get install ros-noetic-gazebo-
ros-control joint-state-publisher
Reading package lists... Done
Building dependency tree
Reading state information... Done
ros-noetic-gazebo-ros-control is already the newest version (2.9.2-1focal.20220
519.094658).
ros-noetic-gazebo-ros-control set to manually installed.
The following additional packages will be installed:
  joint-state-publisher-gui libactionlib0d libb64-0d libclass-loader1d
  libcpp-common0d libkdl-parser1d librobot-state-publisher-solver0d
  librosconsole-bridge0d librosconsole3d libroscpp-serialization0d
  libroscpp2d libroslib0d librospack0d librostime0d libtf1d libtf2-1d
  libtf2-ros0d liburdf0d libxmlrpcpp2d python3-catkin python3-genmsg
  python3-genpy python3-geometry-msgs python3-python-qt-binding
  python3-roscpp-msg python3-rosgraph python3-rosgraph-msgs python3-roslib
  python3-rospy python3-sensor-msgs python3-std-msgs
  ros-robot-state-publisher
The following NEW packages will be installed:
  joint-state-publisher joint-state-publisher-gui libactionlib0d libb64-0d
  libclass-loader1d libcpp-common0d libkdl-parser1d
  librobot-state-publisher-solver0d librosconsole-bridge0d librosconsole3d
  libroscpp-serialization0d libroscpp2d libroslib0d librospack0d librostime0d
  libtf1d libtf2-1d libtf2-ros0d liburdf0d libxmlrpcpp2d python3-catkin
  python3-genmsg python3-genpy python3-geometry-msgs
  python3-python-qt-binding python3-roscpp-msg python3-rosgraph
  python3-rosgraph-msgs python3-roslib python3-rospy python3-sensor-msgs
  python3-std-msgs ros-robot-state-publisher
```

9-

```
muhrah3@muhrah3-VirtualBox:~/catkin_ws$ sudo apt-get install ros-noetic-ros-con
trollers ros-noetic-ros-control
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  ros-noetic-ackermann-steering-controller ros-noetic-combined-robot-hw
  ros-noetic-effort-controllers ros-noetic-force-torque-sensor-controller
  ros-noetic-gripper-action-controller ros-noetic-imu-sensor-controller
  ros-noetic-joint-trajectory-controller ros-noetic-velocity-controllers
The following NEW packages will be installed:
  ros-noetic-ackermann-steering-controller ros-noetic-combined-robot-hw
  ros-noetic-effort-controllers ros-noetic-force-torque-sensor-controller
  ros-noetic-gripper-action-controller ros-noetic-imu-sensor-controller
  ros-noetic-joint-trajectory-controller ros-noetic-ros-control
  ros-noetic-ros-controllers ros-noetic-velocity-controllers
0 upgraded, 10 newly installed, 0 to remove and 229 not upgraded.
Need to get 754 kB of archives.
After this operation, 3495 kB of additional disk space will be used.
Do you want to continue? [Y/n]
```

10-