

Task2

In the first Preparing ROS

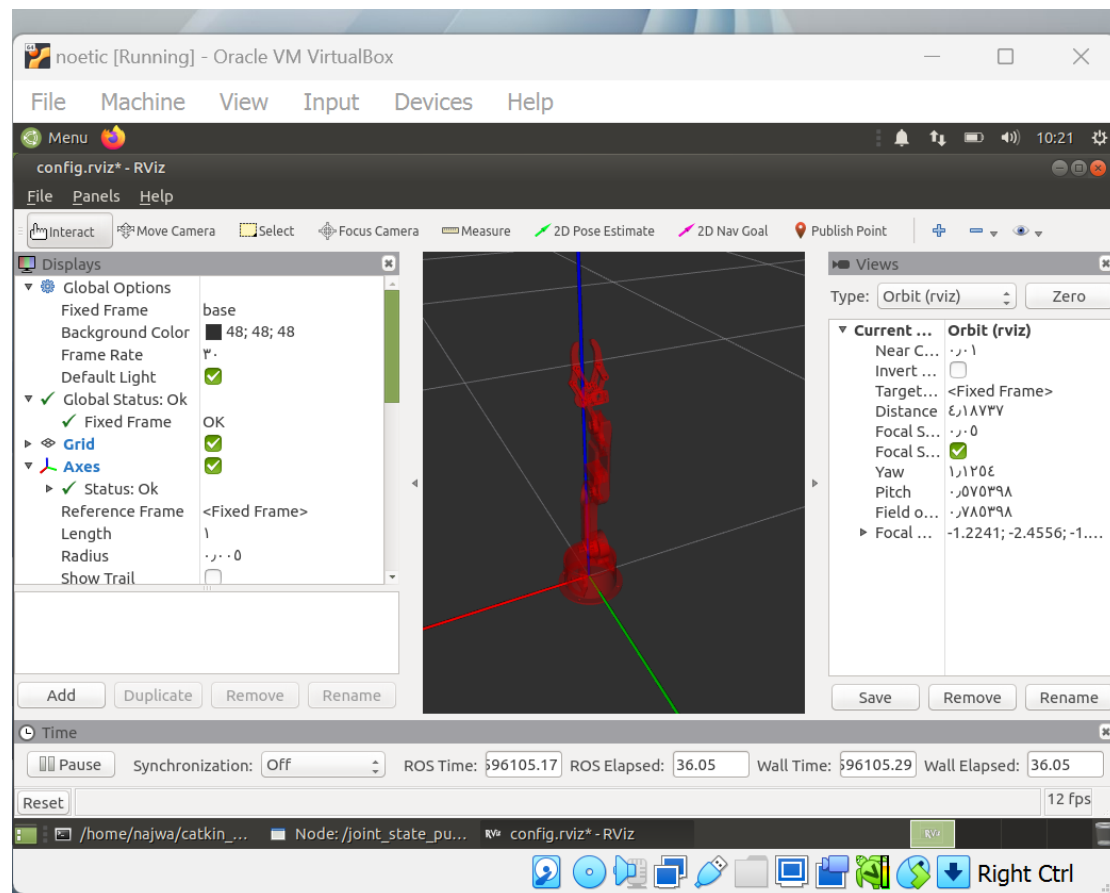
```
najwa@najwa-VirtualBox:~$ source /opt/ros/noetic/setup.bash
najwa@najwa-VirtualBox:~$ mkdir -p ~/catkin_ws/src
najwa@najwa-VirtualBox:~$ cd ~/catkin_ws/
najwa@najwa-VirtualBox:~/catkin_ws$ catkin_make
Base path: /home/najwa/catkin_ws
Source space: /home/najwa/catkin_ws/src
Build space: /home/najwa/catkin_ws/build
Devel space: /home/najwa/catkin_ws/devel
Install space: /home/najwa/catkin_ws/install
Creating symlink "/home/najwa/catkin_ws/src/CMakeLists.txt" pointing to "/opt/ros/noetic/share/catkin/cmake/toplevel.cmake"
####
#### Running command: "cmake /home/najwa/catkin_ws/src -DCATKIN_DEVEL_PREFIX=/home/najwa/catkin_ws/devel -DCMAKE_INSTALL_PREFIX=/home/najwa/catkin_ws/install -G Unix Makefiles" in "/home/najwa/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
```

Then Installing the package arduino_robot_arm

```
bash: /opt/ros/noetic/setup.bash: No such file or directory
najwa@najwa-VirtualBox:~$ cd ~/catkin_ws/src
najwa@najwa-VirtualBox:~/catkin_ws/src$ sudo apt install git
[sudo] password for najwa:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  gir1.2-goa-1.0 libfwupdplugin1 libxmlb1
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  git-man liberror-perl
Suggested packages:
  git-daemon-run | git-daemon-sysvinit git-doc git-el git-email git-gui gitk
  gitweb git-cvs git-mediawiki git-svn
The following NEW packages will be installed:
  git git-man liberror-perl
0 upgraded, 3 newly installed, 0 to remove and 0 not upgraded.
Need to get 5525 kB of archives.
After this operation, 38.8 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://sa.archive.ubuntu.com/ubuntu focal/main amd64 liberror-perl all 0.1
7029-1 [26.5 kB]
```

```
Processing triggers for libc-bin (2.31-0ubuntu1) ...
najwa@najwa-VirtualBox:~/catkin_ws/src$ sudo apt-get install ros-noetic-joint-st
ate-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.20
230620.191426).
ros-noetic-joint-state-publisher set to manually installed.
ros-noetic-joint-state-publisher-gui is already the newest version (1.15.1-1foca
l.20230620.193630).
ros-noetic-joint-state-publisher-gui set to manually installed.
The following packages were automatically installed and are no longer required:
  gir1.2-goa-1.0 libfwupdplugin1 libxmlb1
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
najwa@najwa-VirtualBox:~/catkin_ws/src$ sudo apt-get install ros-noetic-gazebo-r
os-control joint-state-publisher
```

1-Controlling the robot arm by joint_state_publisher



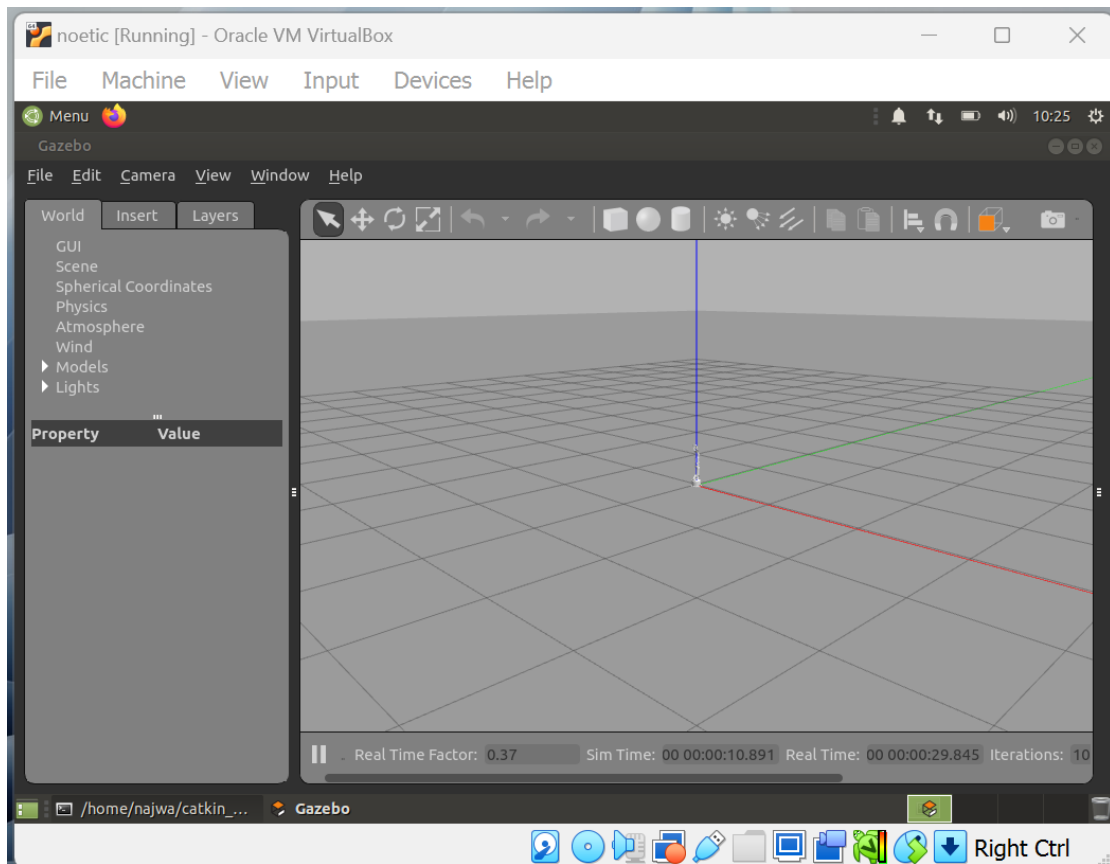
```
najwa@najwa-VirtualBox: ~/catkin_ws
File Edit View Search Terminal Help
oup_node
[100%] Built target move_group_node
najwa@najwa-VirtualBox:~/catkin_ws$ roslaunch robot_arm_pkg check_motors.launch
... logging to /home/najwa/.ros/log/f650893c-3e8c-11ef-8381-ddf2689890d4/roslau
ch-najwa-VirtualBox-36241.log
Checking log directory for disk usage. This may take a while.
Press Ctrl-C to interrupt
Done checking log file disk usage. Usage is <1GB.

started roslaunch server http://najwa-VirtualBox:37621/

SUMMARY
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PARAMETERS
* /robot_description: <?xml version="1...
* /roscdistro: noetic
* /rosversion: 1.16.0

NODES
/
  joint_state_publisher_gui (joint_state_publisher_gui/joint_state_publisher_g
  ui)
  robot_state_publisher (robot_state_publisher/robot_state_publisher)
```



2-Controlling the robot arm by Moveit and kinematics

