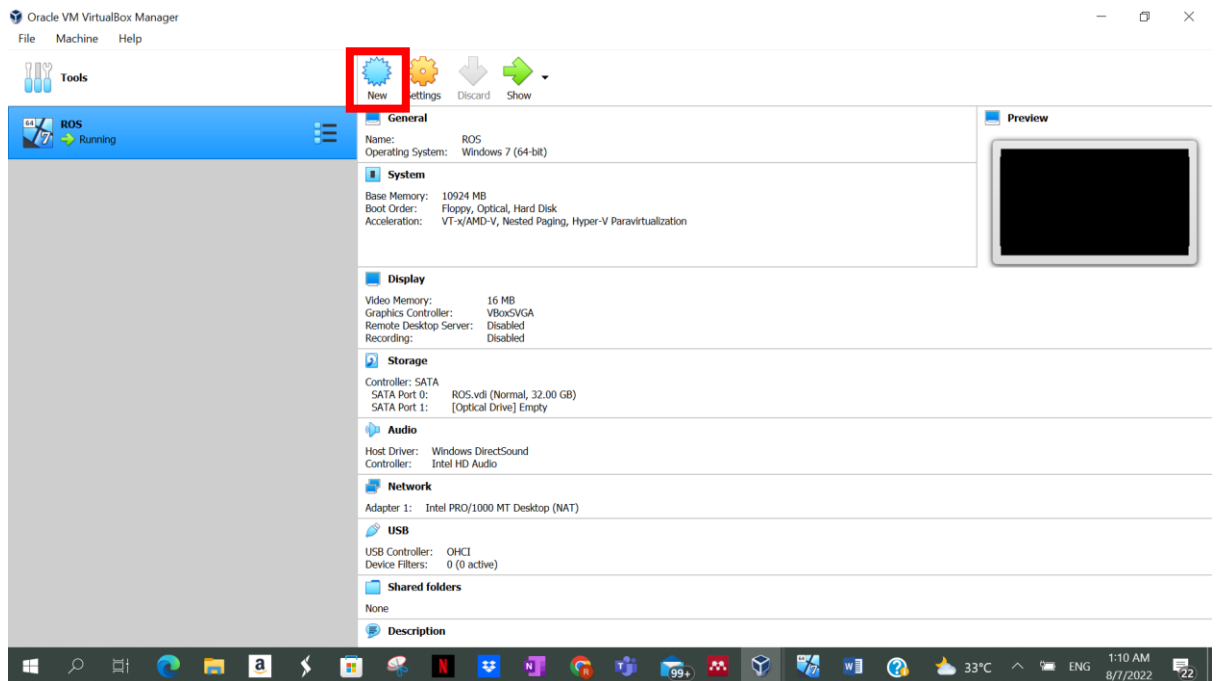
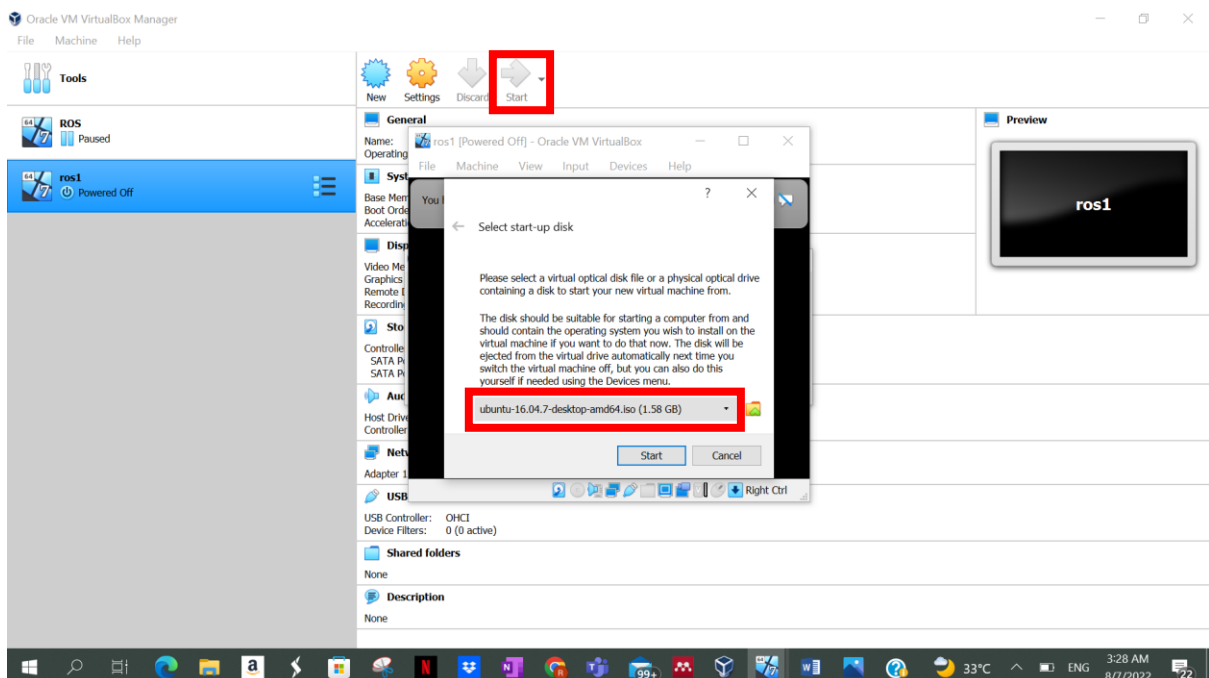


Downloading ROS and robot arm package

1. Install virtual box (<https://www.virtualbox.org/wiki/Downloads>)
2. Download Ubuntu([64-bit PC \(AMD64\) desktop image](#))
3. Create a new virtual machine in a virtual box



4. Press start and install Ubuntu in the VirtualBox



5. Create an account in Ubuntu
6. Search for (<https://s-m.com.sa/ros.txt>)
7. Open Ubuntu Terminal then copy and paste the following instructions one by one.

Codes:

```
sudo sh -c 'echo "deb http://packages.ros.org/ros/ubuntu $(lsb_release -sc)
main" > /etc/apt/sources.list.d/ros-latest.list'
```

Then Enter the Password

```
sudo apt-key adv --keyserver 'hkp://keyserver.ubuntu.com:80' --recv-key
C1CF6E31E6BADE8868B172B4F42ED6FBAB17C654
```

```
sudo apt-get update
```

```
sudo apt-get install ros-kinetic-desktop-full
```

```
apt-cache search ros-kinetic
```

```
echo "source /opt/ros/kinetic/setup.bash" >> ~/.bashrc
source ~/.bashrc
```

```
sudo apt install python-rosdep python-rosinstall python-rosinstall-
generator python-wstool build-essential
```

```
sudo apt install python-rosdep
```

```
sudo rosdep init
```

```
rosdep update
```

```
sudo apt-get install ros-noetic-catkin
```

```
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
```

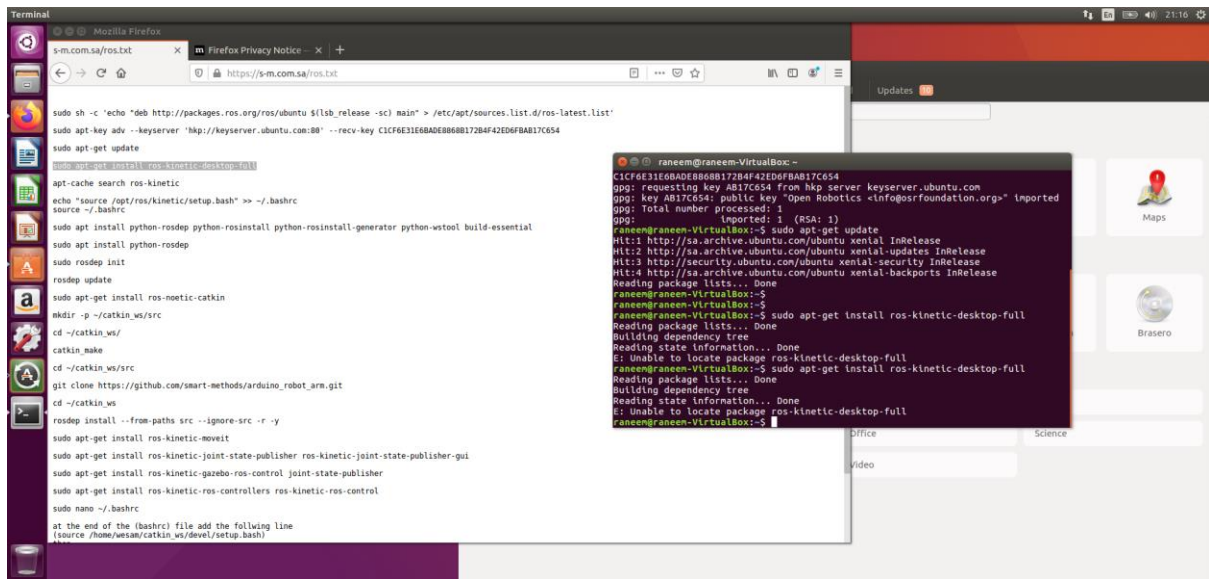
```
rosdep install --from-paths src --ignore-src -r -y
```

```
sudo apt-get install ros-kinetic-moveit
```

```
sudo apt-get install ros-kinetic-joint-state-publisher ros-kinetic-joint-
state-publisher-gui
```

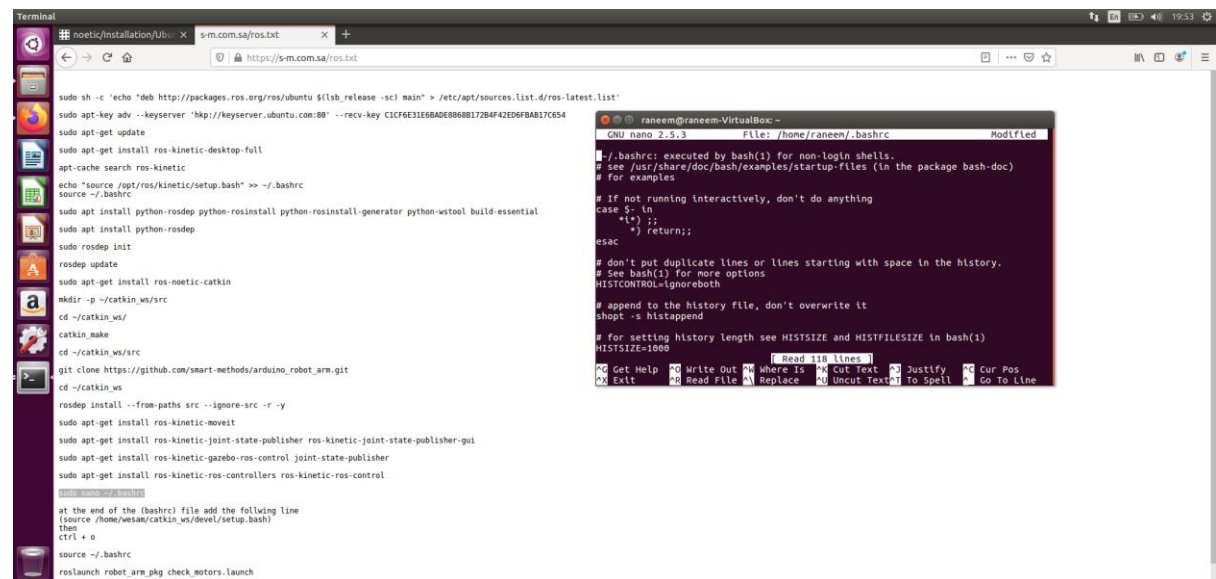
```
sudo apt-get install ros-kinetic-gazebo-ros-control joint-state-publisher
```

```
sudo apt-get install ros-kinetic-ros-controllers ros-kinetic-ros-control
```



8. Now open new Terminal window

`sudo nano ~/.bashrc`



Then add the following line

`(source /home/raneem/catkin_ws/devel/setup.bash)`

Then Press

- 1) `ctrl+o` to write out
- 2) `Enter`
- 3) `Ctrl+x` to exit the window

9. To update the source of bashrc file use the following instruction
`source ~/.bashrc`

10. Now use the following instruction to run the robot arm package
`roslaunch robot_arm_pkg check_motors.launch`

