

# MARS LAB 2

**NAME - ROSHIT SHARMA**  
**SRN - PES1UG23CS489**

## SCREENSHOTS

```
GNU nano 7.2                  /home/pes1ug23cs489/.bashrc *
# ~/.bashrc: executed by bash(1) for non-login shells.
# see /usr/share/doc/bash/examples/startup-files (in the package bash-doc)
# for examples

# If not running interactively, don't do anything
case $- in
  *i*) ;;
  *) return;;
esac

# don't put duplicate lines or lines starting with space in the history.
# See bash(1) for more options
HISTCONTROL=ignoreboth

# append to the history file, don't overwrite it
shopt -s histappend

# for setting history length see HISTSIZE and HISTFILESIZE in bash(1)
HISTSIZE=1000
HISTFILESIZE=2000
```

```
GNU nano 7.2                               /home/pes1ug23cs489/.bashrc *
# ~/.bash_aliases, instead of adding them here directly.
# See /usr/share/doc/bash-doc/examples in the bash-doc package.

if [ -f ~/.bash_aliases ]; then
    . ~/.bash_aliases
fi

# enable programmable completion features (you don't need to enable
# this, if it's already enabled in /etc/bash.bashrc and /etc/profile
# sources /etc/bash.bashrc).
if ! shopt -oq posix; then
    if [ -f /usr/share/bash-completion/bash_completion ]; then
        . /usr/share/bash-completion/bash_completion
    elif [ -f /etc/bash_completion ]; then
        . /etc/bash_completion
    fi
fi
source /opt/ros/jazzy/setup.bash
export ROS_DOMAIN_ID=42
export ROS_LOCALHOST_ONLY=1
```

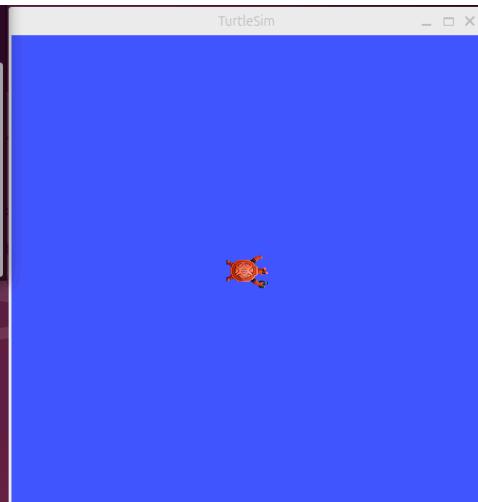
```
pes1ug23cs489@pes1ug23cs489-Lenovo-IdeaPad-S340-14API:~$ source /opt/ros/jazzy/s
etup.bash
pes1ug23cs489@pes1ug23cs489-Lenovo-IdeaPad-S340-14API:~$ echo $ROS_DISTRO
jazzy
```

```
pes1ug23cs489@pes1ug23cs489-Lenovo-IdeaPad-S340-14API:~$ sudo apt update
[sudo] password for pes1ug23cs489:
Hit:1 http://in.archive.ubuntu.com/ubuntu noble InRelease
Hit:2 http://in.archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:3 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:4 http://in.archive.ubuntu.com/ubuntu noble-backports InRelease
Hit:5 http://packages.ros.org/ros2/ubuntu noble InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
```

```
pes1ug23cs489@pes1ug23cs489-Lenovo-IdeaPad-S340-14API:~$ sudo apt install ros-jazzy-turtlesim
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
ros-jazzy-turtlesim is already the newest version (1.8.3-1noble.20251025.084845)
.
The following package was automatically installed and is no longer required:
  libllvm19
Use 'sudo apt autoremove' to remove it.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
```

```
pes1ug23cs489@pes1ug23cs489-Lenovo-IdeaPad-S340-14API:~$ ros2 pkg executables turtlesim
turtlesim draw_square
turtlesim mimic
turtlesim turtle_teleop_key
turtlesim turtlesim_node
```

```
pes1ug23cs489@pes1ug23cs489-Lenovo-IdeaPad-S340-14API:~$ ros2 run turtlesim turtlesim_node
QSocketNotifier: Can only be used with threads started with QThread
[WARN] [1768925323.432920142] [rcl]: ROS_LOCALHOST_ONLY is deprecated but still honored if it is enabled. Use ROS_AUTOMATIC_DISCOVERY_RANGE and ROS_STATIC_PEERS instead.
[WARN] [1768925323.432971116] [rcl]: 'localhost_only' is enabled, 'automatic_discovery_range' and 'static_peers' will be ignored.
[INFO] [1768925323.475133383] [turtlesim]: Starting turtlesim with node name /turtlesim
[INFO] [1768925323.488935943] [turtlesim]: Spawning turtle [turtle1] at x=[5.544445], y=[5.544445], theta=[0.000000]
```



Turtlesim

```
pes1ug23cs489@pes1ug23cs489-Lenovo-IdeaPad-S340-14API:~$ source /opt/ros/jazzy/setup.bash
pes1ug23cs489@pes1ug23cs489-Lenovo-IdeaPad-S340-14API:~$ ros2 run turtlesim turtle_teleop_key
[WARN] [1768925746.664799513] [rcl]: ROS_LOCALHOST_ONLY is deprecated but still honored if it is enabled. Use ROS_AUTOMATIC_DISCOVERY_RANGE and ROS_STATIC_PEERS instead.
[WARN] [1768925746.664849657] [rcl]: 'localhost_only' is enabled, 'automatic_discovery_range' and 'static_peers' will be ignored.
Reading from keyboard
-----
Use arrow keys to move the turtle.
Use g|b|v|c|d|e|r|t keys to rotate to absolute orientations. 'f' to cancel a rotation.
'q' to quit.
```

```
pes1ug23cs489@pes1ug23cs489-Lenovo-IdeaPad-S340-14API:~$ ros2 node list
/teleop_turtle
/turtlesim
pes1ug23cs489@pes1ug23cs489-Lenovo-IdeaPad-S340-14API:~$ ros2 topic list
/parameter_events
/rosout
/turtle1/cmd_vel
/turtle1/color_sensor
/turtle1/pose
pes1ug23cs489@pes1ug23cs489-Lenovo-IdeaPad-S340-14API:~$ ros2 service list
/clear
/kill
/reset
/spawn
/teleop_turtle/describe_parameters
/teleop_turtle/get_parameter_types
/teleop_turtle/get_parameters
/teleop_turtle/get_type_description
/teleop_turtle/list_parameters
/teleop_turtle/set_parameters
/teleop_turtle/set_parameters_atomically
/turtle1/set_pen
/turtle1/teleport_absolute
/turtle1/teleport_relative
/turtlesim/describe_parameters
/turtlesim/get_parameter_types
```

```
'/turtlesim/get_parameters
/turtlesim/get_type_description
/turtlesim/list_parameters
/turtlesim/set_parameters
/turtlesim/set_parameters_atomically
pes1ug23cs489@pes1ug23cs489-Lenovo-IdeaPad-S340-14API:~$ ros2 action list
/turtle1/rotate_absolute
pes1ug23cs489@pes1ug23cs489-Lenovo-IdeaPad-S340-14API:~$
```

```
pes1ug23cs489@pes1ug23cs489-Lenovo-IdeaPad-S340-14API:~$ sudo apt update
[sudo] password for pes1ug23cs489:
Hit:1 http://in.archive.ubuntu.com/ubuntu noble InRelease
Hit:2 http://in.archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:3 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:4 http://in.archive.ubuntu.com/ubuntu noble-backports InRelease
Hit:5 http://packages.ros.org/ros2/ubuntu noble InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
pes1ug23cs489@pes1ug23cs489-Lenovo-IdeaPad-S340-14API:~$ sudo apt install '~nros
-humble-rqt'
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following package was automatically installed and is no longer required:
  libllvm19
Use 'sudo apt autoremove' to remove it.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
```

