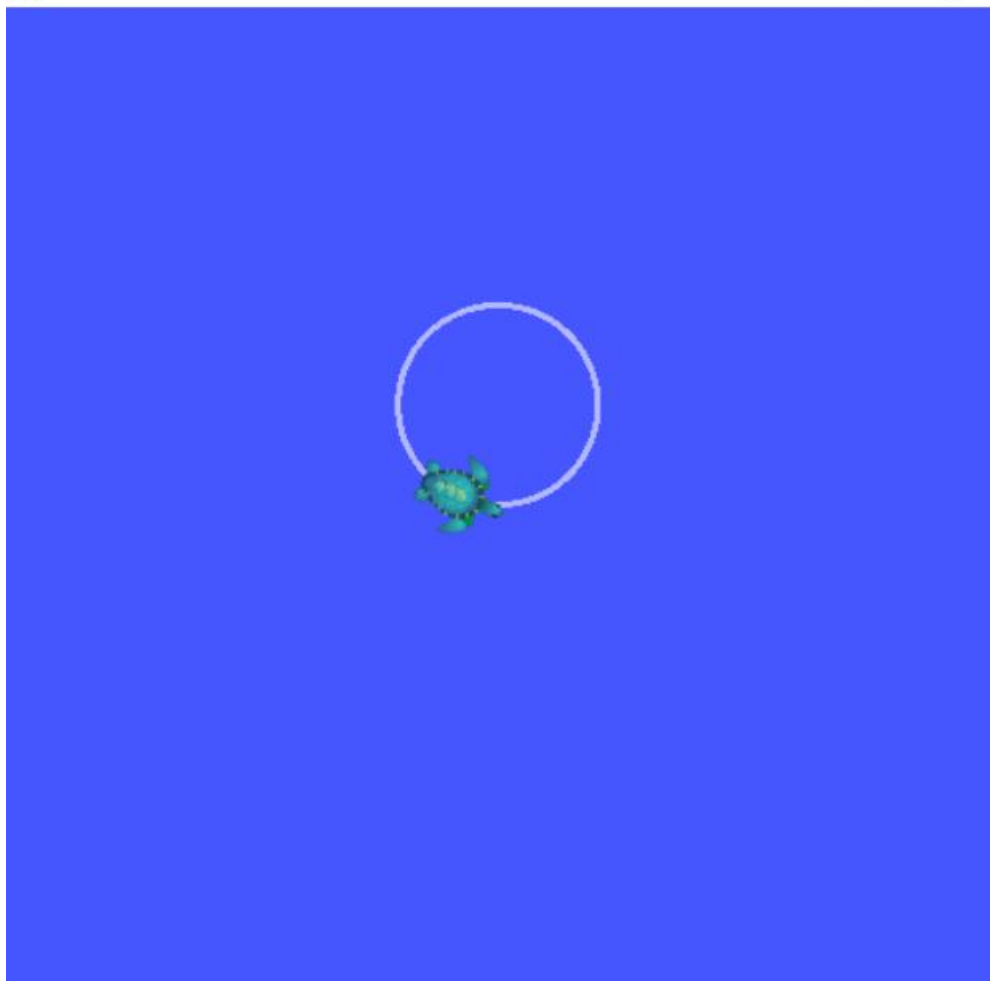
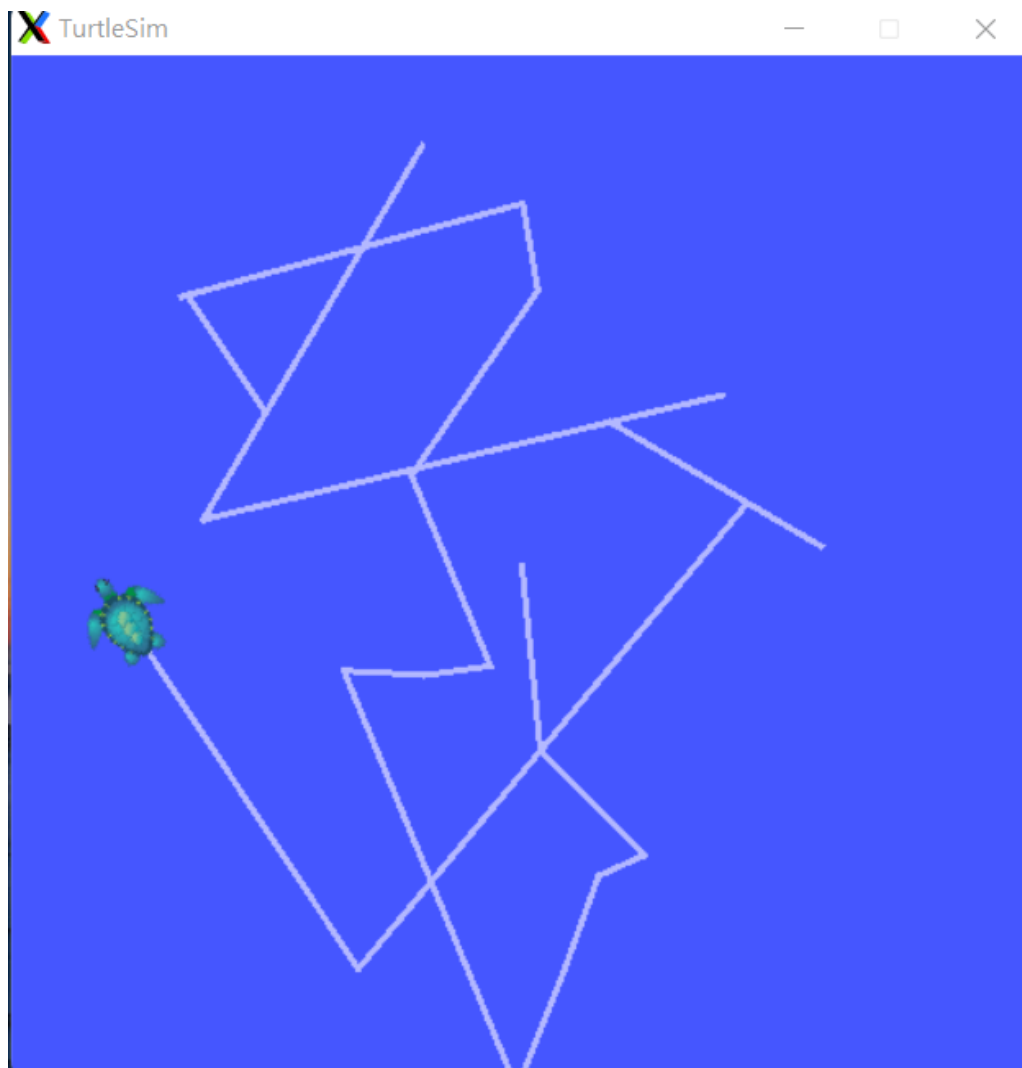


TurtleSim





1

```

Reading state information... Done
libboost-all-dev is already the newest version (1.71.0-0ubuntu2).
libeigen3-dev is already the newest version (3.3.7-2).
libcxx-abi-dev is already the newest version (1.14.0-4ubuntu1.1).
0 upgraded, 0 newly installed, 0 to remove and 131 not upgraded.
yu@LAPTOP-5VJSTI2E:~$ echo "alias source_ros1=\"source /opt/ros/$ROS1_DISTRO/setup.bash\" >> ~/.bashrc"
yu@LAPTOP-5VJSTI2E:~$ source ~/.bashrc
yu@LAPTOP-5VJSTI2E:~$ source_ros1
yu@LAPTOP-5VJSTI2E:~$ sudo apt-get install ros-noetic-turtlesim
Reading package lists... Done
Building dependency tree
Reading state information... Done
ros-noetic-turtlesim is already the newest version (0.10.2-1focal.20220106.234424).
0 upgraded, 0 newly installed, 0 to remove and 131 not upgraded.
yu@LAPTOP-5VJSTI2E:~$ source_ros1
yu@LAPTOP-5VJSTI2E:~$ roscore
... logging to /home/yu/.ros/log/49830ad6-d1dd-11ec-9773-00155d5fb51e/roslaunch-LAPTOP-5VJSTI2E-832.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://LAPTOP-5VJSTI2E:38123/
ros_comm version 1.15.14

SUMMARY
=====

PARAMETERS
* /rostdistro: noetic
* /rosversion: 1.15.14

NODES

auto-starting new master
process[master]: started with pid [843]
ROS_MASTER_URI=http://LAPTOP-5VJSTI2E:11311/

setting /run_id to 49830ad6-d1dd-11ec-9773-00155d5fb51e
process[rosout-1]: started with pid [853]
started core service [/rosout]

```

```

? MobaXterm Personal Edition v22.0 ?
(SSH client, X server and network tools)

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> For more info, ctrl+click on help or visit our website.

yu@LAPTOP-5VJSTI2E:~$ source_ros1
yu@LAPTOP-5VJSTI2E:~$ rosnode list
/roscout
yu@LAPTOP-5VJSTI2E:~$ rosnode info /roscout
-----
Node [/roscout]
Publications:
* /roscout_agg [rosgraph_msgs/Log]

Subscriptions:
* /roscout [unknown type]

Services:
* /roscout/get_loggers
* /roscout/set_logger_level

contacting node http://LAPTOP-5VJSTI2E:36405/ ...
Pid: 853

yu@LAPTOP-5VJSTI2E:~$ rostopic list
/roscout
/roscout_agg
yu@LAPTOP-5VJSTI2E:~$ source_ros1
yu@LAPTOP-5VJSTI2E:~$ █

```

```
? MobaXterm Personal Edition v22.0 ?
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> For more info, ctrl+click on help or visit our website.

yu@LAPTOP-5VJSTI2E:~$ source_ros1
yu@LAPTOP-5VJSTI2E:~$ roslaunch turtlesim turtlesim_key
Reading from keyboard
-----
Use arrow keys to move the turtle. 'q' to quit.
```

```
? MobaXterm Personal Edition v22.0 ?
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> WSL DISPLAY is automatically redirected to Windows desktop
> WSL filesystem is accessible in the sidebar browser
> For more info, ctrl+click on help or visit our website.

yu@LAPTOP-5VJSTI2E:~$ source_ros1
yu@LAPTOP-5VJSTI2E:~$ rostopic echo /turtle1/cmd_vel
linear:
  x: 2.0
  y: 0.0
  z: 0.0
angular:
  x: 0.0
  y: 0.0
  z: 1.8
---
linear:
  x: 2.0
  y: 0.0
  z: 0.0
angular:
  x: 0.0
  y: 0.0
  z: 1.8
---
linear:
  x: 2.0
  y: 0.0
  z: 0.0
angular:
  x: 0.0
  y: 0.0
  z: 1.8
---
linear:
  x: 2.0
```

```
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> WSL filesystem is accessible in the sidebar browser
> For more info, ctrl+click on help or visit our website.

yu@LAPTOP-5VJSTI2E:~$ source _ros1
yu@LAPTOP-5VJSTI2E:~$ rostopic pub -r 1 /turtle1/cmd_vel geometry_msgs/Twist -- '[2.0, 0.0, 0.0]' '[0.0, 0.0, 1.8]'
```

6.

```
? MobaXterm Personal Edition v22.0 ?
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> WSL DISPLAY is automatically redirected to Windows desktop
> WSL filesystem is accessible in the sidebar browser
> For more info, ctrl+click on help or visit our website.

yu@LAPTOP-5VJSTI2E:~$ source _ros1
yu@LAPTOP-5VJSTI2E:~$ roslaunch turtlesim turtlesim_node
[ INFO] [1652352391.257171900]: Starting turtlesim with node name /turtlesim
[ INFO] [1652352391.266219300]: Spawning turtle [turtle1] at x=[5.544445], y=[5.544445], theta=[0.000000]
```




```

| 461 kB 3.0 MB/s
Collecting pytest-repeat
  Downloading pytest_repeat-0.9.1-py2.py3-none-any.whl (4.3 kB)
Requirement already satisfied, skipping upgrade: EmPy in /usr/lib/python3/dist-packages (from colcon-core->colcon-common-extensions)
Requirement already satisfied, skipping upgrade: pytest in /usr/lib/python3/dist-packages (from colcon-core->colcon-common-extensions)
Collecting pytest-rerunfailures
  Downloading pytest_rerunfailures-10.2-py3-none-any.whl (11 kB)
Collecting pytest-cov
  Downloading pytest_cov-3.0.0-py3-none-any.whl (20 kB)
Requirement already satisfied, skipping upgrade: more-itertools>=4.0.0 in /usr/lib/python3/dist-packages (from pytest->colcon-core->colcon-common-extensions)
Collecting coverage[toml]>=5.2.1
  Downloading coverage-6.3.2-cp38-cp38-manylinux_2_5_x86_64.manylinux1_x86_64.manylinux_2_17_x86_64.manylinux2014_x86_64.whl (212 kB)
| 212 kB 3.3 MB/s
Collecting tomli; extra == "toml"
  Downloading tomli-2.0.1-py3-none-any.whl (12 kB)
ERROR: pytest-rerunfailures 10.2 has requirement pytest>=5.3, but you'll have pytest 4.6.9 which is incompatible.
Installing collected packages: distlib, pytest-repeat, pytest-rerunfailures, tomli, coverage, pytest-cov, colcon-core, colcon-pkg-conf, colcon-test-result, colcon-cmake, colcon-recursive-crawl, colcon-python-setup-py, colcon-ros, colcon-argcomplete, colcon-output, notify, colcon-package-information, colcon-bash, colcon-parallel-executor, colcon-devtools, colcon-powershell, colcon-defaults, colcon-metadata, colcon-package-selection, colcon-common-extensions
WARNING: The scripts coverage, coverage-3.8 and coverage3 are installed in '/home/you/.local/bin' which is not on PATH.
WARNING: The script colcon is installed in '/home/you/.local/bin' which is not on PATH.
Consider adding this directory to PATH or, if you prefer to suppress this warning, use --no-warn-script-location.
Successfully installed colcon-argcomplete-0.3.3 colcon-bash-0.4.2 colcon-cd-0.1.1 colcon-cmake-0.2.26 colcon-common-extensions-0.2.1 colcon-core-0.2.1 colcon-devtools-0.2.3 colcon-library-path-0.2.1 colcon-metadata-0.2.5 colcon-notification-0.2.13 colcon-output-0.2.12 colcon-package-information-0.2.10 colcon-package-selection-0.2.10 colcon-parallel-executor-0.2.4 colcon-pkg-config-0.1.0 colcon-powershell-0.3.7 colcon-python-setup-py-0.2.1 colcon-recursive-crawl-0.2.1 colcon-ros-0.3.23 colcon-test-result-0.3.8 colcon-zsh-0.4.0 coverage-6.3.2 distlib-0.3.4 notify-0.3.1 pytest-cov-3.0.0 pytest-rerunfailures-10.2 tomli-2.0.1
yu@LAPTOP-5VJSTI2E:~$ echo "alias source_ros2=\"source /opt/ros/$ROS2_DISTRO/setup.bash\" \">> ~/.bashrc
yu@LAPTOP-5VJSTI2E:~$ source ~/.bashrc
yu@LAPTOP-5VJSTI2E:~$ source ros2
yu@LAPTOP-5VJSTI2E:~$ ros2 multicast receive
Waiting for UDP multicast datagram...
^Cyu@LAPTOP-5VJSTI2E:~$ sudo ufw allow in proto udp to 224.0.0.0/4
Rules updated
yu@LAPTOP-5VJSTI2E:~$ sudo ufw allow in proto udp from 224.0.0.0/4
Rules updated
yu@LAPTOP-5VJSTI2E:~$ ros2 multicast send
Sending one UDP multicast datagram...
yu@LAPTOP-5VJSTI2E:~$

```

or MobaXterm by subscribing to this professional edition here: <https://mobaxterm.mobatek.net>

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- > For more info, ctrl+click on [help](#) or visit our [website](#).

```

yu@LAPTOP-5VJSTI2E:~$ source_ros2
yu@LAPTOP-5VJSTI2E:~$ ros2 node list
/turtlesim
yu@LAPTOP-5VJSTI2E:~$

```

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- > WSL DISPLAY is automatically redirected to Windows desktop
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- > For more info, ctrl+click on [help](#) or visit our [website](#).

```
yu@LAPTOP-5VJSTI2E:~$ source_ros2
```

```
yu@LAPTOP-5VJSTI2E:~$ ros2 run turtlesim turtle_teleop_key
```

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.

█

```
yu@LAPTOP-5VJSTI2E:~$ source_ros2
```

```
yu@LAPTOP-5VJSTI2E:~$ rostopic echo /turtle1/cmd_vel
```

Command 'rostopic' not found, but can be installed with:

```
sudo apt install python3-rostopic
```

```
yu@LAPTOP-5VJSTI2E:~$ ros2 topic echo /turtle1/cmd_vel
```

linear:

x: 0.0

y: 0.0

z: 0.0

angular:

x: 0.0

y: 0.0

z: -2.0

linear:

x: 0.0

y: 0.0

z: 0.0

angular:

x: 0.0

y: 0.0

z: -2.0

> WSL DISPLAY is [automatically redirected](#) to Windows desktop
> WSL filesystem is accessible in the [sidebar browser](#)
> For more [info](#), ctrl+click on [help](#) or visit our [website](#).

```
yu@LAPTOP-5VJSTI2E:~$ source ros2
yu@LAPTOP-5VJSTI2E:~$ ros2 run turtlesim turtlesim_node
[INFO] [1652365361.519889000] [turtlesim]: Starting turtlesim with node name /turtlesim
[INFO] [1652365361.522948900] [turtlesim]: Spawning turtle [turtle1] at x=[5.544445], y=[5.544445], theta=[0.000000]
[WARN] [1652365498.190455900] [turtlesim]: Rotation goal received before a previous goal finished. Aborting previous goal
[WARN] [1652365498.238282300] [turtlesim]: Rotation goal received before a previous goal finished. Aborting previous goal
[WARN] [1652365498.253893600] [turtlesim]: Rotation goal received before a previous goal finished. Aborting previous goal
[WARN] [1652365498.270747700] [turtlesim]: Rotation goal received before a previous goal finished. Aborting previous goal
[WARN] [1652365498.301963500] [turtlesim]: Rotation goal received before a previous goal finished. Aborting previous goal
[WARN] [1652365498.334209200] [turtlesim]: Rotation goal received before a previous goal finished. Aborting previous goal
[WARN] [1652365498.366426100] [turtlesim]: Rotation goal received before a previous goal finished. Aborting previous goal
[WARN] [1652365498.397957500] [turtlesim]: Rotation goal received before a previous goal finished. Aborting previous goal
[WARN] [1652365498.414293500] [turtlesim]: Rotation goal received before a previous goal finished. Aborting previous goal
[INFO] [1652365498.429914000] [turtlesim]: Rotation goal completed successfully
[WARN] [1652365499.310758000] [turtlesim]: Rotation goal received before a previous goal finished. Aborting previous goal
[WARN] [1652365499.342463000] [turtlesim]: Rotation goal received before a previous goal finished. Aborting previous goal
[WARN] [1652365499.374508100] [turtlesim]: Rotation goal received before a previous goal finished. Aborting previous goal
[WARN] [1652365499.405996800] [turtlesim]: Rotation goal received before a previous goal finished. Aborting previous goal
[WARN] [1652365499.438534000] [turtlesim]: Rotation goal received before a previous goal finished. Aborting previous goal
[WARN] [1652365499.453737400] [turtlesim]: Rotation goal received before a previous goal finished. Aborting previous goal
[WARN] [1652365499.485998700] [turtlesim]: Rotation goal received before a previous goal finished. Aborting previous goal
[WARN] [1652365499.519020000] [turtlesim]: Rotation goal received before a previous goal finished. Aborting previous goal
[WARN] [1652365499.550112700] [turtlesim]: Rotation goal received before a previous goal finished. Aborting previous goal
[INFO] [1652365499.550356400] [turtlesim]: Rotation goal completed successfully
[INFO] [1652365499.582445900] [turtlesim]: Rotation goal completed successfully
[INFO] [1652365499.630695200] [turtlesim]: Rotation goal completed successfully
[INFO] [1652365499.662688700] [turtlesim]: Rotation goal completed successfully
[INFO] [1652365499.7108219200] [turtlesim]: Rotation goal completed successfully
[INFO] [1652365499.710030300] [turtlesim]: Rotation goal completed successfully
[INFO] [1652365499.741807400] [turtlesim]: Rotation goal completed successfully
[WARN] [1652365501.499944900] [turtlesim]: Rotation goal received before a previous goal finished. Aborting previous goal
[WARN] [1652365501.523939600] [turtlesim]: Rotation goal received before a previous goal finished. Aborting previous goal
[WARN] [1652365501.568508600] [turtlesim]: Rotation goal received before a previous goal finished. Aborting previous goal
[WARN] [1652365501.587416400] [turtlesim]: Rotation goal received before a previous goal finished. Aborting previous goal
[WARN] [1652365501.625620700] [turtlesim]: Rotation goal received before a previous goal finished. Aborting previous goal
[WARN] [1652365501.670705300] [turtlesim]: Rotation goal received before a previous goal finished. Aborting previous goal
[WARN] [1652365501.686515300] [turtlesim]: Rotation goal received before a previous goal finished. Aborting previous goal
```