

Some command lines I used to start with ROS

```
Activities Terminator 11:39 31 أغسطس en [system icons]
micro@Micro: ~/Catkin_works

micro@Micro: ~/Catkin_works 73x25
[INFO] [1693514362.357733]: hello world 1693514362.3574378
[INFO] [1693514362.457667]: hello world 1693514362.457397
[INFO] [1693514362.557834]: hello world 1693514362.5574186
[INFO] [1693514362.657818]: hello world 1693514362.657433
[INFO] [1693514362.757707]: hello world 1693514362.7574136
[INFO] [1693514362.857772]: hello world 1693514362.8574052
[INFO] [1693514362.957719]: hello world 1693514362.9573953
[INFO] [1693514363.057756]: hello world 1693514363.0574608
[INFO] [1693514363.157802]: hello world 1693514363.1574335
[INFO] [1693514363.257815]: hello world 1693514363.2574732
[INFO] [1693514363.357795]: hello world 1693514363.3574479
[INFO] [1693514363.457864]: hello world 1693514363.4574754
[INFO] [1693514363.557813]: hello world 1693514363.5574124
[INFO] [1693514363.657749]: hello world 1693514363.657421
[INFO] [1693514363.757751]: hello world 1693514363.7574067
[INFO] [1693514363.857706]: hello world 1693514363.857396
[INFO] [1693514363.957793]: hello world 1693514363.9574456
[INFO] [1693514364.057996]: hello world 1693514364.0574532
[INFO] [1693514364.157656]: hello world 1693514364.1573722
[INFO] [1693514364.257809]: hello world 1693514364.2574632
[INFO] [1693514364.357769]: hello world 1693514364.3574739
[INFO] [1693514364.457734]: hello world 1693514364.4574409
[INFO] [1693514364.557732]: hello world 1693514364.5574193
[INFO] [1693514364.657926]: hello world 1693514364.657581

micro@Micro: ~/Catkin_works 150x11
[INFO] [1693514363.761714]: /listener_14872_1693514320865 I heard hello world 1693514363.7574067
[INFO] [1693514363.861903]: /listener_14872_1693514320865 I heard hello world 1693514363.857396
[INFO] [1693514363.962206]: /listener_14872_1693514320865 I heard hello world 1693514363.9574456
[INFO] [1693514364.062470]: /listener_14872_1693514320865 I heard hello world 1693514364.0574532
[INFO] [1693514364.162402]: /listener_14872_1693514320865 I heard hello world 1693514364.1573722
[INFO] [1693514364.261899]: /listener_14872_1693514320865 I heard hello world 1693514364.2574632
[INFO] [1693514364.362297]: /listener_14872_1693514320865 I heard hello world 1693514364.3574739
[INFO] [1693514364.461356]: /listener_14872_1693514320865 I heard hello world 1693514364.4574409
[INFO] [1693514364.561323]: /listener_14872_1693514320865 I heard hello world 1693514364.5574193
[INFO] [1693514364.662837]: /listener_14872_1693514320865 I heard hello world 1693514364.657581
```

first I need to create a catkin workspace :

I use 'mkdir' command to create a folder and '-p' to create a child folder 'src'

```
micro@Micro:~$ mkdir -p ~/Catkin_works/src
micro@Micro:~$
```

just we create our workspace :

I use 'cd' command to change the current directory of the terminal, and use 'catkin_make' to create directories and run cmake command.

```
micro@Micro:~$ mkdir -p ~/Catkin_works/src
micro@Micro:~$ cd Catkin_works/
micro@Micro:~/Catkin_works$ catkin_make
Base path: /home/micro/Catkin_works
Source space: /home/micro/Catkin_works/src
Build space: /home/micro/Catkin_works/build
Devel space: /home/micro/Catkin_works/devel
Install space: /home/micro/Catkin_works/install
Creating symlink "/home/micro/Catkin_works/src/CMakeLists.txt" pointing to
"/opt/ros/noetic/share/catkin/cmake/toplevel.cmake"
####
#### Running command: "cmake /home/micro/Catkin_works/src -DCATKIN_DEVEL_
PREFIX=/home/micro/Catkin_works/devel -DCMAKE_INSTALL_PREFIX=/home/micro/
Catkin_works/install -G Unix Makefiles" in "/home/micro/Catkin_works/buil
d"
####
-- The C compiler identification is GNU 9.4.0
-- The CXX compiler identification is GNU 9.4.0
```

Now, we need to check if our directories is created. And then sourcing the setup.bash files.

I use 'ls' command to list directory contents of files.

```
micro@Micro:~/Catkin_works$ ls
build  devel  src
micro@Micro:~/Catkin_works$ source devel/setup.bash
micro@Micro:~/Catkin_works$ cd src/
```

Now I need to create my first Package to start. Using the command 'catkin_create_pkg'.

```
micro@Micro:~/Catkin_works/src$ catkin_create_pkg microo_pkg std_msgs ros
py roscpp
```

To build the ROS package, I use 'catkin_make' command again. But first I should change the current directory using 'cd' command.

```
micro@Micro:~/Catkin_works/src$ cd ..
micro@Micro:~/Catkin_works$ catkin_make
```

I create two basic python nodes, one to send a message and the another on to receive this message.

Now I must make these two files executable.

I use 'chmod a+x' command to change nodes mode to executable.

```
micro@Micro:~/Catkin_works/src/microo_pkg/scripts$ chmod a+x talker.py
micro@Micro:~/Catkin_works/src/microo_pkg/scripts$ chmod a+x listener.py
micro@Micro:~/Catkin_works/src/microo_pkg/scripts$
```

Again I need to compile the workspace. Using 'catkin_make' command, before that I change the current directory to the workspace 'Catkin_works' using 'cd' command.

To run ROS master . Using 'roscore' command

```
micro@Micro:~$ cd Catkin_works/
micro@Micro:~/Catkin_works$ roscore
```

Run the publisher .

```
^Cmicro@Micro:~/Catkin_works$ rosrun microo_pkg talker.py
```

Run the subscriber .

```
^Cmicro@Micro:~/Catkin_works$ rosrun microo_pkg listener.py
```