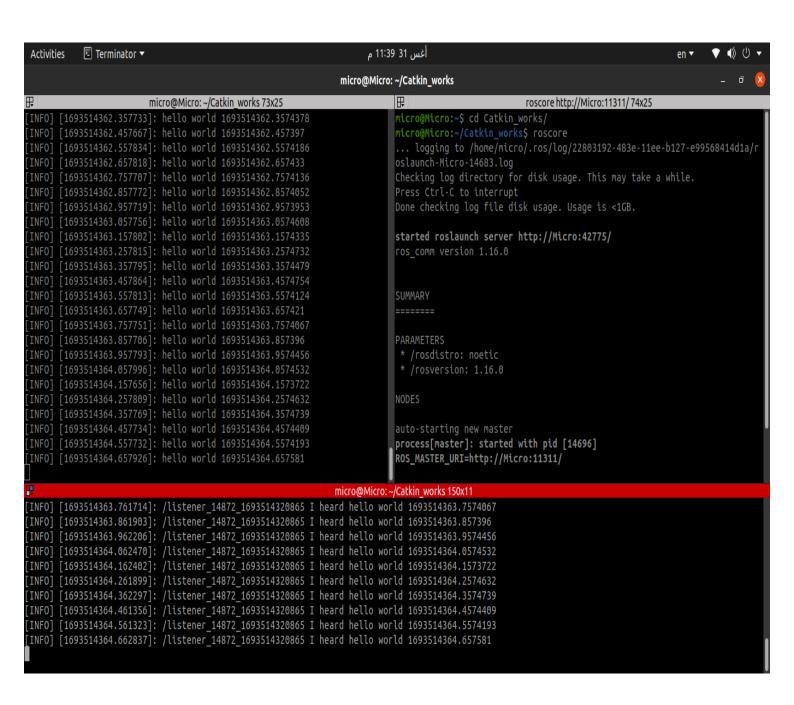# Some command lines I used to start with ROS

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 t
o "/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
```