

# ROB314 – Session 1 - Exo 1

## Chatter / Listener

### Configuration

You will use the package *roscpp\_tutorials* that should be already installed.

You will need to use 4 terminals. With *terminator*, it is easier: you can split it in 4 terminals.

In each terminals, before using ROS command, you have to launch the command :

```
> source /opt/ros/melodic/setup.bash
```

Or add this command at the end of the file *~/.bashrc*

### In the terminal #1 – Starting a *roscore*

- Start a *roscore* with

```
> roscore
```

- Take the time to look at what's on display.

### In the terminal #2 – Starting a *talker* node

- Run a talker demo node with

```
> rosruncpp roscpp_tutorials talker
```

- The node *talker* of the package *roscpp\_tutorials* is launched.
- His work is to :
  - print « hello world » + a incremental number
  - send a message via a topic with the same information

### In the terminal #3 – Analyze *talker* node

- See the list of active nodes

```
> rostopic list
```

- We find the *talker* node in the list

- Show information about the *talker* node

```
> rostopic info /talker
```

- We see that the node */talker* have a *publication* : the topic */chatter*

### In the terminal #3 – Analyze *chatter* topic

- See information about the *chatter* topic

```
> rostopic info /chatter
```

- We see the *publishers* of this topic: here the node */talker*
- We see that the topic has no *subscriber*

- Check the type of the chatter topic

```
> rostopic type /chatter
```

- Here the type of *chatter* is *std\_msgs/String* (*std\_msgs* = *standard messages*)

- Show the message contents of the topic

```
> rostopic echo /chatter
```

- Analyze the frequency

```
> rostopic hz /chatter
```

## In the terminal #4 – Starting a *listener* node

- Run a *listener* demo node with

```
> rosruncpp tutorials listener
```

## In the terminal #3 – Analyze

- See the new *listener* node with

```
> rosnode list
```

- We have a new element, the node */listener*

- Show the connection of the nodes over the *chatter* topic with

```
> rostopic info /chatter
```

- We see the *publishers* nodes of this topic: here the node */talker*
- We see the *subscribers* nodes of this topic: here the node */listener*

## In the terminal #3 – *rqt\_graph*

- The tool *rqt\_graph* provides a visualization of the ROS computation graph. It is useful to understand what happens in our ROS project.

```
> rqt_graph &
```

## In the terminal #3 – Publish my own message from Console

- Close the talker node in console nr. 2 with Ctrl + C

- Publish your own message with

```
> rostopic pub /chatter std_msgs/String "data: 'ROB314'"
```

- Check the output of the listener in console nr. 4