ROB314 – Session 1 - Exo 1

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.

Console Tab Nr. 1 – Starting a *roscore*

- Start a roscore with

```
> roscore
```

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

Console Tab Nr. 2 – Starting a *talker* node

- Run a talker demo node with

```
> rosrun 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

Console Tab Nr. 3 – Analyze *talker* node

- See the list of active nodes

```
> rosnode list
```

- We find the talker node in the list

- Show information about the *talker* node

```
> rosnode info /talker
```

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

- 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*

Console Tab Nr. 3 – Analyze *chatter* topic

- 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
```

Console Tab Nr. 4 – Starting a *listener* node

- Run a *listener* demo node with

```
> rosrun roscpp_tutorials listener
```

Console Tab Nr. 3 – Analyze

- See the new *listener* node with

```
> rosnode list
```

- We have a new element */listener*

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

```
> rostopic info /chatter
```

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

Console Tab Nr. 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 &
```

Console Tab Nr. 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: '****** ENSTA ROS Course
********'"
```

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