Lab 1

Due Feb 9 by 7:30pm **Points** 20 **Submitting** a file upload
File Types zip, tgz, and bz2 **Attempts** 1 **Allowed Attempts** 1
Available until Feb 12 at 7:30pm

This assignment was locked Feb 12 at 7:30pm.

In this first lab assignment you will create a simple workspace, a package, and two simple nodes exchanging information via a topic. You are encouraged to reuse as much as you want from the code samples made available to you from **https://github.com/stefanocarpin/MRTP (https://github.com/stefanocarpin/MRTP)** . This applies to both the package files (package.xml, CMakeLists.txt) as well as your source files. Everything you need to solve this assignment is presented in Chapters 2 and 3 in the textbook.

1. Create a workspace called CSE180.
2. Inside CSE180 create a package called `lab1`. This package will contain source files written in C++.
3. Create an executable called *intpublisher* that starts a node that publishes subsequent integers to a topic called *inttopic.* That is to say, the node starts publishing 0,1,2,.. etc. and stops only when you hit CTRL-C.
4. Create an executable called *intsubscriber* that starts a node that subscribes to *inttopic* and prints to the screen the sum of the last two integers received through the topic. The program continues indefinitely until you hit CTRL-C.
5. Modify the files manifest file and CMakeLists.txt to include all needed dependencies.
6. Build your workspace using colcon build and verify that the two nodes exchange data as requested.

Note: to see how you can send/receive an integer via a topic, see the example programs available in the MRTP package multipletopics (**https://github.com/stefanocarpin/MRTP/tree/main/MRTP/src/multipletopics (https://github.com/stefanocarpin/MRTP/tree/main/MRTP/src/multipletopics)**) and discussed in the textbook in section 3.5 (listings 3.6 and 3.7).

Submission: submit your entire workspace as a single zipped file. Before zipping the file, remove the folders build, install, log, otherwise your file will be way too big. You can zip your workspace with any program generating the file formats listed below (zip, tgz, bz2). No other formats will be accepted. If you do not follow these instructions we will apply a 10% penalty to your grade.

Administrative notes:

- This assignment **must** be solved individually. If we determine you have copied from other

students or from the web without proper attribution, all involved parties will receive a 0 for the assignment, and will be reported as per the CSE academic honesty policy discussed during the first lecture with all the associated consequences.

- Pay attention to the posted deadlines, as they will be enforced by CatCourses. This assignment is due seven days after it is released to your lab session. Assignments marked "late" with respect to the due deadline will receive a 50% penalty. Assignments submitted more than 72 hours after the posted deadline will receive a 0 grade. Do not wait until the last minute to submit your solution.