# Laboratory 5

# CST 8244

# Professor: Dr. Douglas King

# Due: Nov 4, 2016

## Introduction

You will be building two programs: **myController** and **myDevice.** The programs will run independently, but synchronize by having the **myDevice** program install a device driver (or resource manager) within QNX.

The device status will then be visible to the **myController** by reading directly from the device**.**

## Running the Programs

Startup the device: **# myDevice &**

Startup the controller: **# myController &**

Then you will be able to test your programs using a command scripts containing commands such as

echo status open > /dev/local/mydevice

echo pulse 1 > /dev/local/mydevice

echo status closed > /dev/local/mydevice

echo pulse 2 > /dev/local/mydevice

The device should operate as follows:

1. update its internal status buffer for the case of a write with value “open” or “closed”. This value will then be available to the controller if the device is read (e.g., using fscanf(….)).
2. send a pulse to the controller to notify that the event with the given small\_integer value has happened for the case of a write with value “pulse small\_integer”. The value of small\_integer must be in the range 1 to 10, inclusive.

Upon startup, the **myController** program should read the status of the device, and then whenever a pulse is received, the **myController** program should output the value of the integer sent with the pulse, read the status of the device again, and output a message to the console with the current device status.

## Marking Scheme

You should demo the programs during the lab period, and submit screen dumps showing **myController and myDevice** input/output for an appropriate command script.

The assignment is marked out of 30 points.

* 10 marks for **myController**
* 10 marks for **myDevice**
* 5 marks for error checking.
* 5 marks for useful console output.

Marks will be deducted for not checking return codes for errors or not properly freeing any dynamic memory you allocate. Comments are not necessary but they are always welcome, especially if you do not fully complete the programs and want to receive partial marks for what you have completed.

## Submission Guideline

You will submit your entire project directory to Blackboard, and the 4 screen dumps showing correct operation of the programs.

This means I want all the directories, source files, and makefiles you used for this assignment. Marks will be deducted for submissions that do not follow these guidelines. If you have any questions about this please contact me early.