**51.508 Secure Cyber Physical Systems – CPS Control**

**Group members**

* Herman Nuradhy Wijaya – 1003975
* He Junwei – 1004014
* Lee Sharon – 1003986

# Exercise 1

Perform the following exercise using Studio 5000 and IDLE separately:

**Attack**

* The button DO\_10 is supposed to stay lit at all times. Perform an attack to switch off the light of the button DO\_10.

**Defence**

* If the button DO\_10 is switched off, display an alert to the administrator.

# Exercise 2

Perform the following exercise using Studio 5000 and IDLE separately:

**Attack**

* The button DO\_10 is supposed to light up if the temperature rises above the threshold temperature of 30 degrees Celsius. Perform an attack to alter the threshold temperature to a different value (e.g. 40 degrees Celsius).

**Defence**

* If the threshold temperature is suspiciously different, display an alert to the administrator.

# Exercise 3

* **Use pycomm code to launch an attack on MV201, P301, LIT301, LIT401, respectively, with the permission of instructor.**
* **Check the response on the invariant-based monitor and report to the instructor.**

# Exercise 4

**Task: Implement the iterative equations for an estimator and find out the residual. Use mean, variance and mean average deviation of the resultant residual vector for FIT-101 and LIT- 101 for a chunk size of 100 to do a 3D scatter plot and see if both sensors could be uniquely identified.**