Spring 2024 Advanced PLC Midterm

Objective:

This midterm is a create it yourself type midterm. You and 1 other partner can work together with the goal of creating something interesting (you can do this by yourself if you'd like). I want you to use one piece of equipment that we have not used before in this class or the normal PLC class, do something interesting with it, and document it.You are welcome to use any of the IEC standard languages if you want to learn one of those but help will be limited.

New/ unused Equipment:

- Schneider Electric Modicon M172 Expansion Module:
    - https://www.se.com/us/en/product/TM172PBG42RI/expansion-module-modicon-m172-performance-blind-42-io-ethernet-isolated/
- Schneider Electric Modicon M172 PLC:
    - https://www.se.com/us/en/product/TM172PDG07R/modicon-m172-performance-display-7-i-os-ethernet-modbus/
- Schneider Electric Modicon Display Color TouchScreen:
    - https://www.se.com/us/en/product/TM172DCLWTHP/modicon-m172-display-color-touchscreen-temperature-humidity-builtin-sensors/

Important Dates (Midterm Week is March 4-8):

- Submittal Due Date: February 5th
- Project Code, Documentation, etc: March 5th
- Presentation: March 7th

Requirements:

- Submit an idea of what your project will be about and who you are working with (if anybody)
    - This can be a rough idea, but I need this to setup the hardware for you
- Use a new piece of equipment that we have not used in this class or the regular PLC class.
- You will need to document the process of you learning how to use this device
- You will be giving a presentation to Dr. Shovic and myself explaining what you did and what you learned throughout the process

Grading:

- With this midterm being unstructured I will be lenient with grading, all I care about is you putting in the effort
- This project will be worth 50 points

Example Projects:

- Send data back and forth between either of the existing PLCs (Click/ BRX) and the new Modicon PLC. This can be expanded out to control some of the minifactory (avoid the MPO currently)
- Read in sensor data from the Schneider Electric Smart Touchpad into any of the PLCs and display that on an HMI
- Establish three way communications between devices (can be any devices but need to include 1 new device)