**ChEn 475 LabVIEW Assignment**

Names: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Using the LabVIEW program created in class, wire the pressure and flowrate sensors to the correct channels on the board. Once done, turn the pump on and run LabVIEW to measure the pressure and flowrate. Take a screenshot of the working LabVIEW and paste it below as evidence that your wiring and programming are correct.
2. After watching the pressure gauges for a short time, describe the behavior seen and what causes the behavior. What could you do to improve the readout? Place another instrument on your **Front Panel** that more clearly measures the behavior. Obtain a screenshot of this new instrument working and paste it below.
3. Accuracy and precision are two important considerations when measuring any quantity. What accuracy and precision would you report for the flowrate and the pressure measurements? Why did you select theses? How will you determine the accuracy and precision of the measurements made on the labs done in this class?
4. Carefully shut the valve (partially) to see the effect on the pressure and flowrate. Be careful not to shut off the valve completely or go above 30 psig. Describe and explain the behavior observed for both the pressure and the flowrate. (Does the observed behavior make sense?)
5. The measurement devices used in this lab send a voltage to the board which is then interpreted by LabVIEW. Industrial applications usually send current rather than voltage. Why would you use current instead of voltage?
6. Change the LabVIEW program to read a thermocouple, and then connect the thermocouple. The thermocouples are Type K. Run the experiment and the program that includes the temperature measurement, take a screen shot, and paste it below