Lab 6 – Data Logging using Python II

Introduction

This is exactly the same as Lab #4, but instead of using the AT89LP51RC2, you must use a micro processor/controller that is not 8051 based.

For this lab you can work with a partner; only one submission is necessary on Canvas.

Laboratory

Temperature strip-chart using Python.   The script 'stripchart_sinewave.py' provided with Lab #4 shows how to implement strip-charts in Python. A strip-chart can be used to plot the temperature transmitted from an arbitrary micro controller/processor to Python in real time. For this lab you must use a micro controller/processor that is NOT based on the 8051 architecture. On Canvas you'll find instructions and examples using the following microcontrollers included in the **Project 2 kit**: ATMega328P, MSP430G2553, LPC824, SAMD20E16, and PIC32MX130F064B. You can use any other micro processor/controller, provided that is programmed in plain C without any operating system built in. Neither C++ nor Arduino's C++ like programming languages are acceptable.

Modify the provided script so it plots the data received from the serial port. Don't forget to add extra functionality and/or features for bonus marks! Upload to canvas:

a) Python code.

b) C code.

c) ONE good resolution picture of the microcontroller system with the LM335 attached.

d) A video of showing the temperature strip chart working.