Names _____ & _____

Date_____

Assignment #4 – Inputs

Objectives

- Students will be able to use inputs to control LEDs.

Goal

Use a 6-position rotary switch to control multiple LEDs.

Materials

- Breadboard – wire w/ 5V power regulator, switch, and LED
- Jumpers
- Solid copper wire
- Wire strippers
- Non-serrated needle nose pliers
- 9 V battery clip
- PIC18F45K22
- 6 – 10 kΩ resistors
- 6 - 220 Ω resistor
- Resistors for LEDs
- 1 Rotary Switch (ST6-001-0604X)
- 6 - LEDs
- 9 V battery
- Computer w/ MPLAB XC8
- PICkit™ 3
- Digital multimeter

Directions

- You will be documenting your work in your lab notebook.
- Draw the schematic in your lab notebook of the circuit that you will build to connect the rotary switch and LEDs to your breadboard with the PIC18F45K22.
- Build the circuit that you drew. Have Mr. Evans review your circuit.
- Task 1
  - Write a program to efficiently turn on different LEDs as you turn the rotary switch. Position 1 of the switch will light up LED 1, position 2 of the switch will light up LED 2, etc.
  - Compile the program and test it. Have Mr. Evans review your functioning project
  - After you complete program with comments, put it in your lab notebook.
- Task 2
  - Write a program to efficiently turn on different LEDs as you turn the rotary switch. Position 1 of the switch will light up LED 1, position 2 of the switch will light up LED 1 and LED 2, etc.
  - Compile the program and test it. Have Mr. Evans review your functioning project
  - After you complete program with comments, put it in your lab notebook.
- If time permits, use the 6-position switch to dim one of the LEDs.

Grading

- When functioning as planned, have Mr. Evans inspect.
  - Task 1: _____ (*10 points*)
  - Task 2: _____ (*5 points*)
  - Wiring: _____ (*10 points*)
  - Efficiency of code: _____ (*5 points*)
  - Lab notebook: _____ _____ (*10 points*)
  - Turn this sheet in with your notebooks together.