Lab7 description

System A

- For System A, you can perform the lab portion using only a Launchpad board.
- When the '1' key is pressed, display the menu on the serial terminal once as follows:

```
1. List
2. Name
3. Temp
4. Center
5. Left
6. Right
```

- If a '2' key is pressed, display "ESET 369: " plus your name(s) on the serial terminal.
- If a '3' key is pressed, read the ADC value from the internal temperature sensor and display it on the serial terminal in Fahrenheit (°F) once.
- Fill out the following table when measured. Take two measurements. Take a photo showing one of these values when measured. Make sure to include this (1) table and (2) photo showing the value in your lab report.

	Temperature (°F)
Case 1	
Case 2	

(Note) Take a photo showing this value

System B

- For safety, please, remember and make sure to unplug your Launchpad from the USB port before making any hardware changes.
- Connect jumper wires as shown in Figure 1.

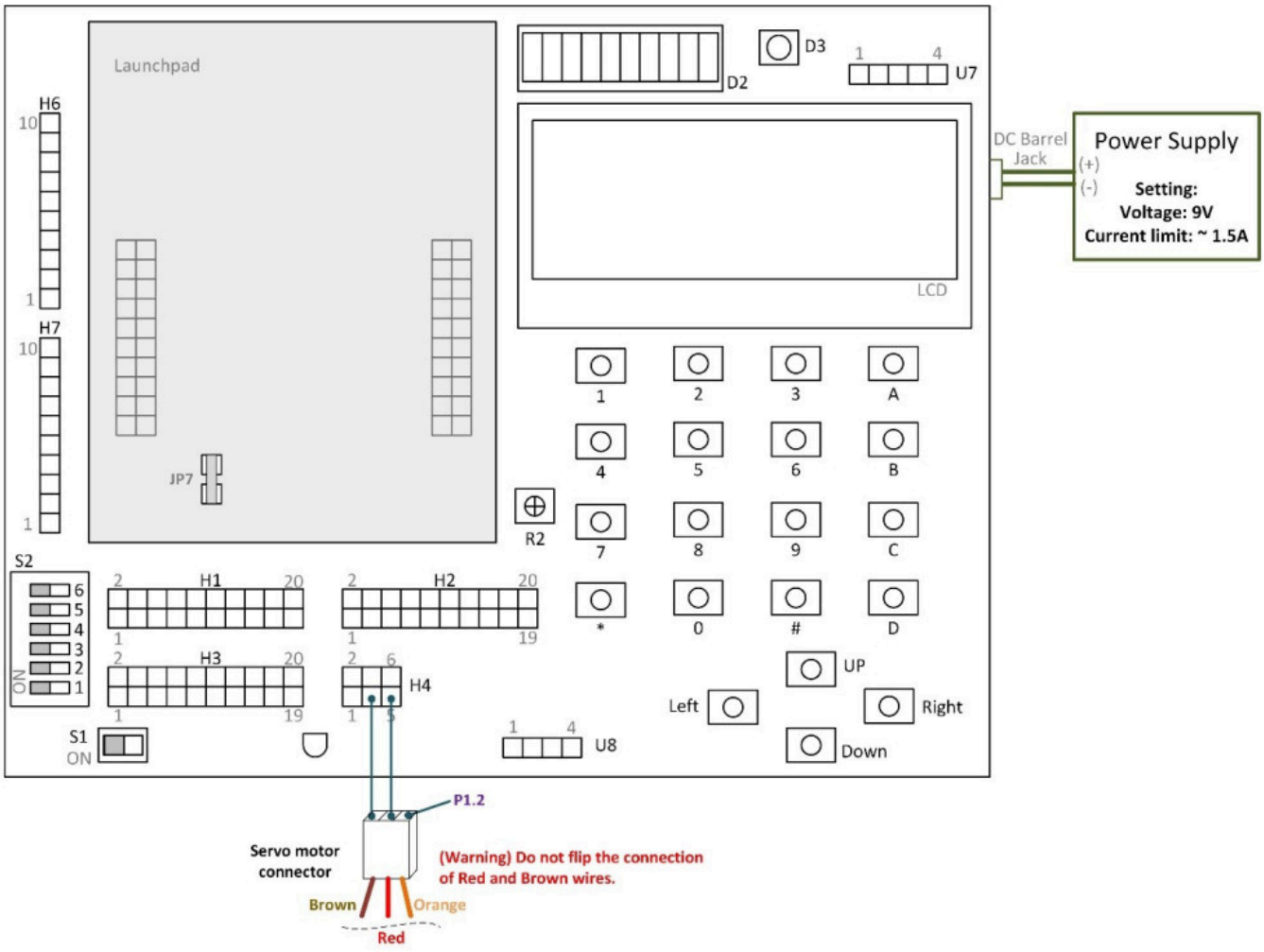

Figure 1. Connection diagram

- Students need to write a C/C++ program to read the input character from their serial terminal and to perform the relevant functions in Table 1.

Keyboard input	Functions
'1' key	When the '1' key is pressed, display the menu on the serial terminal once as follows: 1. List 2. Temp 3. Name 4. Center 5. Left 6. Right
'2' key	Display "ESET 369: " plus your name(s) on the serial terminal.
'3' key	Read the ADC value from the internal temperature sensor and display it on the serial terminal in Fahrenheit (°F)
'4' key	Servo motor shaft at a neutral position. Let's say this is 0 degrees.
'5' key	Control the servo motor shaft to rotate about −45 degrees.
'6' key	Control the servo motor shaft to rotate about +45 degrees.

Table 1. Functions

- There is an empty battery pack in the lab kit box. If the system is functional, you don't need to use a power supply once the hardware connection and the function are initially checked and confirmed. You can switch to a battery pack instead. It needs 6 AA batteries. Please bring your own batteries.
- Make sure to complete the lab check-off assignment (Lab7-50X) posted on CANVAS before the given deadline. The code files should be submitted as a part of the lab check-off assignment. Laboratory assignment deadlines are 15 minutes before the end of your registered laboratory session.

Reference

- B. Hur, "Learning Embedded Systems with MSP430 FRAM microcontrollers", 2nd ed. 2023.