

ECE 4175

Project Seven

RPG Add-on

Complete by:
Wednesday Feb. 25 for an A+

References:
RPG Add-on Schematic.pdf
RPG Add-on.jpg
RPG Add-on wiring

Wiring

Obtain an RPG and three 22 k Ω resistors from the two parts drawers in the lab. Using #30 AWG (wirewrap) wire, wire the circuit onto your Q&L Devel. Bd. using the attached photos and schematic as a guide. The parts are shown pushed to the top of the board so as to keep as much of the prototyping area as possible available for future additions to the board.

The #30 wire, a #30 wire stripper, tweezers for helping with the connections, and a diagonal cutter for cutting wire are available in the 4175 lab as well as in the Senior Design Lab. Do a neat job with wires routed close to the surface of the board. No rats nests please!

Display Function

Change the name of the DisplayC function to Display. Remove the “const” parameter. Now all strings will be assigned to RAM, whether considered variable or constant. You will be able to modify the bytes of a string, as for example

```
RPGstr[5] = '0';
```

Display of Pushbutton and RPG states

Develop a new P7.c program. Every tenth of a second, query both the pushbutton and the RPG. Display the pushbutton state in the left half of the second line of the LCD as “Pressed” or Released. You can send either of two strings to the display to do this. For example, using

```
char PressedStr[] = "\xc3 Pressed";
```

you can write

```
Display(PressedStr);
```

For the RPG, you might have a string defined as

```
char RPGstr[] = "\xcc RPG=00";
```

where the two bits echo the state of RB4 and RB3. After modifying both bits, call

```
Display(RPGstr);
```