Name:_____
TA: _____
Section:_____

EECS 40/43
Prelab: Calbot Lab(1)

1. Go to the Calbot page
http://www-inst.eecs.berkeley.edu/~ee40/calbot/webpage/index.htm
and read
> Introduction to robotics and the CalBOT
> Microcontroller basics
> Understanding the components of your CalBOT kit
> Programming the C167

2. Buy wire wraps from the IEEE office in 204A Cory. You need 4 different colors of wire wraps.

Question 1
We want to use port 8 for input and output. Show how to initialize the port, the top 4 bits will be output, and the lower 4 bits input. Initialize the output to all zeroes. (Hint: This can be done in two lines).

Question 2
You would like to use the onboard LEDs as a status indicator. Design a function that turns on each individual bit sequentially, only one LED should be lit at a time. It should look like K.I.T.T. from the 80s cult classic Knight Rider. You will need to use the kludgyWait function to time how long a LED is on.

Time	Output	Time	Output
0	1000	4	0010
1	0100	5	0100
2	0010	6	1000
3	0001	7	0100

Table 1: Example of LED output

Note: Value of 1 means light is on; this is not the same as the board works. The board LEDs are active low, a 0 output will turn on the LED. Also remember that Port 2 has 16 bits not just four as shown above.

Question 3
What port and bit does pin 127 of the KitCon167 correspond to? (Hint: It would be helpful to look up the KitCon pinout either in your hardware manual or online)

Question 4
What extra functionality would you like to add to your basic Calbot?