Insights, facts about the Myro/Python system and advice for Myro programmers (blue/true).

The pilot makes sure code that demonstrates the team's results is expressed in PYTHON FUNCTIONS, and turns them in.

The reporter turns in the .html web page.

**Homework: Due Monday, March 8:** Read Chapters 4 and 5 in Kumar's textbook and study the facts about Myro and Python that apply to continuing the current team activity to learn and innovate with the robots sensors combined with motion. (Omit reading about the joystick.)

**March 8, 10 and 12:** Continue the robot sensor and motion control team activity, turning in each day's results. Also, share questions and answers about the individual letter-based graphics homework assigned below, to be done that week. (There will be a guest instructor on Mar. 10, 12, and a midterm course evaluation on March 12.)

**Individual, team assisted programming homework: Due Monday, March 15 (the Ides).**

Each student downloads all the turtle letter drawing functions written by all the class members. First, record in a comment in each function who wrote it. Then, select your favorite function for each of the 26 letters and 10 digits. Put your 36 selections all in one Python file and name it Alphabet.py.

If you improve any letter drawing function for your own use, you must communicate your improvement to the person who wrote it and to others. If the writer agrees that this is an improvement, he or she should recommend it to everybody. See below!

Then, use all 36 letter functions in your Alphabet.py file in a program that draws a graphic of your own creative design. Each person must create their own, essentially unique graphic design. However, you are encouraged to show your classmates your work in progress and to ask them for help to accomplish what you want in your graphic.

18 pts: .5 for each letter/digit

Do this homework a little at a time, adding and changing things as you go along. It would be a good idea to download and install plain Python (version 2.4, 2.5 or 2.6) on your own computer. The turtle library comes with Python and is INDEPENDENT of MYRO, so there should be no problems with installing it on any popular computer system.

Your program must, for full credit, utilize each of the following features and have each of the following properties: (Eventually, you will be asked to write short programs that utilize each feature in examinations or quizzes!)

1. Vary the (a) size (b) spacing, i.e., position and (c) orientation of letters (at least 3 variations of each, preferably more.)

2. Use at least one single loop to draw a combination of letters repeatedly in
different sizes, positions or orientations.

3. Use at least one separate doubly nested loop (a loop within a loop) to do the above. The part of the graphic drawn with the doubly nested loop must have a two-dimensional form (like a filled rectangle or triangle) that is easier to draw with a doubly nested loop than with a simple loop.

4. Some letters are drawn with differing colors and with differing line widths.

5. None of the program statements should be "stupid", that is, accomplish nothing or have their accomplishments make no effect on the drawing and then have the accomplishment wiped out by a subsequent statement. Examples:

\[
X = 1 \ # \text{THIS LINE IS STUPID!}
\]
\[
X = 2 \ # \text{The value of 1 that X had before was not used}
\]

```python
def stupid(size):
    size = 3.7 \ # The value passed to size from the caller is
    A(size) \ # wiped out and ignored.
```

If you want to deactivate code but leave it in for reference or possible future use, make the code into comments. For example:

```python
# X = 1 It's better for X to be set different from 1.
X = 2
```

An exception to this rule is that it is ok to write Python functions that are not used. The function might be left in if it may be useful in a future revision of the program.

6. (a) Some sequences of letters must be drawn in a straight line and (b) some sequences must be drawn in a curved path.

7. Learn about lists and looping through lists. A list can contain FUNCTIONS. You can code sequences of letter drawing or other functions in lists that are then looped through. Example:

```python
def A():
    print 'Hi'
def B():
    print 'Lo'
L = [A,B,A,B]
def main():
    for fun in L:
        fun()
```

+3 Each correct letter or digit submitted originally.
+4 for each student in a pair for each letter or digit when one student helps another post a corrected letter on the discussion board.