So what have you learned?

Description:
In assignment 1, you chose several parameter values and a replacement algorithm to attempt to improve a genetic algorithm. In assignment 2, you chose representations for a genetic algorithm. For this assignment, you will choose a problem to solve using a genetic algorithm. This means of course that you will design and implement all aspects of the GA.

You will work in teams of three (except for one group of four). To quote Monty Python: “Then, shalt thou count to three. No more. No less. Three shalt be the number thou shalt count, and the number of the counting shall be three. Four shalt thou not count, nor either count thou two, excepting that thou then proceed to three. Five is right out. Once the number three, being the third number, be reached, then formest thou thy team.”

The first part of the project involves problem identification and approval (more on that below). You will implement your genetic algorithm in Python utilizing the DEAP library.

Part 1
By Monday November 18, submit a brief document answering the following questions:

1. Who are the members of your team?
2. What problem do you propose to solve? Make sure that it is sufficiently complex so as not to be obvious or trivial. I suggest a multi-objective problem.
3. What is your motivation for solving this problem? Why do you think it would be interesting to others in the field?
4. What, if any, previous work has been done on this problem?
5. How do you plan to represent individuals?
6. What is your fitness function?
7. What experiments do you plan to run?

Part 2
By Monday December 9, submit your code along with a report answering the following questions:

1. What problem did you solve?
2. What is the goal of your project?
3. What is your experimental methodology? Please justify your methods.
4. How did you tune your algorithm?
5. What are your results? Be sure to discuss the results and what they mean. Do not simply list them.
6. What did you learn?
7. What contributions does your project make the field of evolutionary computation?