Homework 7

110 total points
Due: Tuesday, October 18, 2011 at 9pm Pacific
Complete this assignment by yourself (except where noted).

I. Overview
We’ve been working on external and internal implementations of a couple of domains that (loosely) share the same computational model. This homework asks you to write an internal implementation of Picobot and to review the requirements for your project.

II. Internal Picobot (100 points)
Design your own syntax for Picobot and implement it internally, in Scala, using the machine library. We’ll be doing most of this in class on Wednesday, October 12. If you don’t finish in class, you’ll need to finish it out of class. In either case, you’ll submit your implementation and a description of your syntax. This description should justify your syntax: you should say why you think your syntax is useful for the domain expert, discuss any tradeoffs you had to make for the sake of implementation. You should also describe any features of Scala that made it particularly easy or difficult to implement your syntax. You may work with one or more people in class, as long as all of you contribute to the syntax design and implementation.

III. Project “Quiz” (10 points)
Read the project requirements. By the deadline, email me one question about the requirements, along with its answer. The question and answer should highlight an important aspect of the requirements that you want to make sure everyone in the class knows. In other words, you shouldn’t send me a softball question (e.g., when is the project due), nor should you send me an esoteric question (e.g., what’s the third word of the fifth paragraph). I will compile all the questions into a quiz. If you have questions about the requirements, or if there’s something that’s unclear, please let me know in the same email.

IV. A Note About the Due Date
This assignment spans Fall Break. I expect you to take the break! In other words, you should be able to complete this assignment before the deadline, without working on it over the break.
Submitting Your Solution
For part II, create an hw7 directory in your personal repository directory (if you designed and implemented your syntax alone) or in your group directory (which you may need to make, if you designed and implemented your syntax in a group). In addition to your code, submit a file called description.txt, wherein you describe and justify your design and implementation. For part III, send me an email, as described.

Collaboration and Honor Code
I expect you to abide by the Harvey Mudd Honor code. Your solution to this assignment should be produced by you alone or by the members of your team (where applicable). You may discuss concepts and language design at a high level with any student in the class — I encourage you to do so!. However, you may not copy solutions from anyone. If someone strongly influences your language design, be sure to cite that person.

If you have any questions about what behavior is acceptable, it is your responsibility to come see me before you engage in this behavior. I will be happy to answer any of your questions.