Project #2: RoboCup Team

Your assignment is to design a team of agents that can play simulated soccer. We will use the simulator designed for the Robocup tournament to test your agents by pitting them against each other in a tournament during our scheduled final exam period. This will be a team project with ideally four teams of three people each.

Forming teams:
You must decide on who your teammates will be by class on Friday, Nov. 8. As I said before, teams of three people each are preferable. If you would rather work in a team of two, let me know before Friday, and I'll consider it if there are two other teams who would also prefer to work in pairs. In forming your team, you should consider having at least one expert C++ programmer and one person who has a good understanding of the agents concepts discussed in this class. It may also be advantageous to have a member who is familiar with the game of soccer.

Getting started:
You should begin to read the manual for the RoboCup soccer server as soon as possible. I also recommend that once your team is formed, you download the soccer simulator and begin experimenting with it. In order to do well on this project, you will have to spend a lot of time designing and programming, so get started right away. You can download the manual and the server from http://sserver.sourceforge.net/. Go to the downloads page and follow the links to the latest releases. The files you should download are:

- manual-7.08.1 (either .pdf or .ps.gz)
- rcsoccersim-9.0.2.tar.gz

Be sure that you obtain version 9.0.2 of the simulator, since this is the version that will be used for the competition. Note that although the simulator is compatible with a number of platforms (Red Hat Linux, Solaris, etc.), MS Windows is not one of them. We will be using Red Hat Linux for the tournament, so it is recommended that you at least test your agent team on this platform. If you do not have immediate access to Linux, then you may wish to begin development on the department's Sun Workstations.

Rules:
Your agents are subject to the rules described in the manual, including those used in RoboCup 2000 as mentioned in Section 2.2.2. As long as your agent plays by these rules, you are free to design your agent in whatever way you think gives you the best chance of winning. You may also use publicly available source code as long as you fully attribute your source (to use code without crediting its author(s) is a form of plagiarism, and is cause for automatically failing the course). However, originality of design will be a major component of your grade, so do not rely too heavily on borrowed code. You are also free to discuss any aspect of the project with other teams, but since you will be competing against them, you may lose advantages by doing so.

The Lehigh Challenge tournament:
Who is the best autonomous agent soccer-playing team at Lehigh? We will find out at the tournament on Tues., Dec. 17 from 8-11am (our scheduled final exam period). The exact format of the tournament is dependent on the number of teams, and will be determined later. There may be prizes for the best teams.

Deliverables:
Your project is due by 10am on Monday, Dec. 16. You must provide electronic versions of source code, compiled versions of your files (for Red Hat Linux), and a three to five page report. The report should describe your team's design, and should include a short section on what each person contributed to the project. If you borrowed code from other sources, then you should clearly indicate which parts of your design this code was used for and properly credit the source.

Grading:

Grading will be based on how your team fares in the tournament, the quality of your design, and its originality.