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TAILS (Nine Men's Morris)

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**Introduction**

One of the projects the TAILS team will be completing this semester is a few additions to our Nine Men's Morris Game.  The enhancements will enable people to get a better understanding of artificial intelligence algorithms by looking and stepping through live working code. The additions will consist of two new agents that can be used in the game.

**Current Architecture**

The game’s current architecture is two-tiered. The first tier is the game engine which is written in TCL. The second tier is the MiniMax agent, which has been written in Java. The MiniMax agent communicates with the game engine via a socket. The MiniMax agent is currently using a one-ply search.

**Additions**

This semester, we will be adding two new agents. The agent will be a MiniMax agent that can perform a two-ply search. This agent will make smarter decisions than the first agent we built because it can look two turns into the game, as opposed to only one turn into the game with the one-ply agent. The second agent will be a MiniMax agent with alpha-beta pruning. Our expectation of the alpha-beta agent is that it will perform faster than our other agents because it will be evaluating fewer branches in the search tree.

**Conclusion**

Our goal is to have the additions completed by March 2011. In addition to the two new agents, we will also be including UML diagrams to help explain exactly what is happening in the code at any given point.