Product Backlog

Assignment 2 Team 3

Main Program Components:

1) AI
    a. Adjustable levels of difficulty
    b. Reasonable utilization of computer resources when in use
    c. Client server model that allows for remote game play
2) Game manager
    a. Determines if a finish/win state has been reached
    b. Checks moves of both the player and AI for adherence to rules
    c. Stores game board information during same play session
    d. Able to accept input from user interface or AI interface
3) UI
    a. Present the current state of the board in human compliant format
    b. Menu allows for single player, multiplayer, or AI only game modes
    c. Assists in connection of AI in client-server model.
    d. Able to display scores at end of each game

Product Backlog Tasks:

- Create basic program framework for client
- Create basic program framework for server
- Initially set up client/server model for local game play, remote play added later
- Create basic debugging system, allowing basic game state to be checked
- Create basic game framework
- Create system for transferring game state information between the client and server
- Add basic startup options/menu for the user. Includes single, multiplayer, or AI modes
- Add system for storing game state information, server side
- Add system for storing user(s) input information, server side
- Add system for basic user input via terminal, client side
- Add Kalah(6,4) board to game framework
- Add game rules
- Add scoring system

End Sprint 1- Due March 21

Begin Sprint 2

- Add system for checking user actions against game rules
- Check number of user actions taken against maximum allowed
- Add user feedback for the validity of their proposed action
- Add system for updating game state
- Allow client and server to sync current game state
- Allow user input to update game state
- Allow user to view current board state, initially via primitive system such as text based

- Allow user to view current scores
- Add system for checking win/loss condition for the user
- Add support for multiple users
- Update startup options for the user
- Create basic AI framework
- Set up a MinMax tree for AI
- Add system for the computer to view the game state
- Add system for computer to view all valid moves
- Add system for the computer to select an action
- Add system for the computer to view one move ahead in the tree
- Add alpha-beta pruning implemented at one level
- Add alpha-beta pruning across all levels
- Add system for iterative deepening
- Add difficulty system for the AI
- Add user option for choosing difficulty
- Update startup options for the user
- Add support for remote communication between client and server
- Revise display for user interaction and game state
- Revise method for user input to allow a click and move process