**Definition:**

**What is the system definition?**

Our system in a Chess Environment, that is to say our system allows the user to be immersed in a world of chess. Allowing for Player vs AI and Player vs Player games, tutorials, different game modes, and more.

**Why is the system important?**

The system is important because it allows anyone from beginner to expert level to both learn to play and grow in their ability to play chess. The ability to play chess invokes and constructs many critical reasoning skills under timed circumstances.

**Analysis:**

**Inputs?**

Command Line – Keyboard : Selection from options to control program navigation, Position of Piece to move, Position to move piece to.

**Outputs?**

Command Line – Text : Options to control program navigation, if a move is valid, any errors if a move isn’t valid, the chess board, updates to the chess board.

**Flow/Logic for System?**

Main Menu –

1. Quick Play

* AI and Board Setup
* Display Board
* Tell Player to make a move
  + Check if move is valid
    - If Valid:
      * Check if King in Check
        + Special Rules on Movement
      * Check for Checkmate
        + Game Over
      * Check for Stalemate
        + Game Over
    - If Invalid:
      * Notify user move is invalid and ask to make a different selection

1. Custom Games
2. Tutorials
3. Options
4. Exit

**Design:**

**Modules Required?**

**Classes and their methods?**

* Chess
* ChessPiece
* Rook
* Knight
* Bishop
* Queen
* King
* Pawn
* NullPiece

**Shared classes/methods?**

* Move

**Execution Plan:**

**Divide and Conquer?**

* Team 1: Katherine and Robert
  + User Interface
* Team 2: Jonah and Leanne
  + AI
* Team 3: Daniel, Sammy, Josh
  + Tutorials, including interactive tutorials

**Makefile final form?**

**Personal deadlines? Ideas for testing?**

* March 13th, 2017
  + Working Quickplay mode. The user should be able to play a base level AI in chess.
  + Beginner Level Interactive Tutorials should be available for testing.