Criterion A - Planning

1. Defining the Problem

I am a volunteer at Frank Elementary Frank Elementary Chess Club, where I work with Stephanie Fong, the club's head coordinator, to teach young children the game of chess. I have been helping out at the club for the past few years, and I have noticed many of the children have trouble understanding chess, so I've spoken with Stephanie about developing a computer program to help the students improve their skills.

However, my programming experience is too limited to create a chess program, so I will develop a checkers program. Checkers is the root game of chess, so playing checkers will be a stepping stone for the students. Stephanie liked my idea and became my client and end user, while Mr. Westerduin, my computer science teacher, is my advisor. The problem is to create a 2 player checkers game that will be used by young children to practice the game of checkers.

NOTE: Consultation with client is available in Appendix B.

Word Count: 171

2. Rationale for Solution

Checkers was translated into a computer game because children have difficulty learning chess, so a computer game of checkers will allow the children to practice checkers, which will work as a stepping stone towards learning chess. Usually, boards take time to set up and are not always available. With a computerized version of checkers, the player won't be required to arrange the pieces, and the game will be playable anywhere, because it no longer requires physical components.

I will utilize the Java language because:

- I am familiar with it
- Java has GUI components, which provide easy access to the program's features.
- Java is free software, so it can be downloaded by anyone.

In addition, I will implement the Gridworld case study, because:

- Provides a board-like format.
- Responds to clicks on the board
- Allows objects to be represented by custom graphics and colors.

Word Count: 148

3. Criteria for Success

- The board is 8 by 8.
- Each piece is represented by its appropriate graphic.
- The program has a menu interface that allows the user to choose their color and who will move first.
- The program will adhere to the modern rules of checkers.
- Players will click to select a piece and then click where to move it.
- Games end when a player cannot make any additional moves.