Criterion A: Planning

The Scenario:

The client is Mr. Sharma, physical education teacher at the American Embassy School and coach of the school's badminton and tennis teams. He uses two types of data to analyze his team members: empirical data in the form of the results of games between students and subjective data in the form of notes and skill sheets made by coaches. Samples of both types of data are in Appendix 5. The primary method of sorting players is through the coaches' notes. These notes are in the form of criterion, with each criterion relating to a distinct skill set. For example, the lunging criterion comes under the movement skill set. Furthermore, each skill set relates to a different type of player. For example, a singles player must have good movement skills, while for a doubles player movement is not as important. As for the games, the coach tries to pit players against others of a similar skill level, and looks at their game results only as a secondary means of determining who makes the team. Mr. Sharma would like the computer program to sort players first by number of games won, then by points won if there is a tie between players. He would also like for the computer program to be able to create court schedules for each court that pit players against other players of a similar caliber. The method previously used by the coach was to record both types of information on sheets of paper, often dozens of sheets for each class or team, and analyze the data manually.

Rationale:

The existing process was inefficient in two ways: firstly, it caused the unnecessary usage of hundreds of sheets of paper each year, and secondly, it wasted many hours of Mr. Sharma's time. If a program computerized this process, it would save both paper and time, and lead to even more intricate analysis of the data. The client wishes to have a program that runs on both windows and mac computers, as he uses both simultaneously. An ideal programming language for this scenario is Java, as it can run natively across many platforms including mac and windows and it has support for third party APIs. One such API is the GlazedList API, which facilitates the display of data in a tabular format and includes features such as sorting the data as it is entered. Another feature of Java is the File class, which allows for the creation of files in many OS's, such as Mac, Windows and Linux. The program used for developing the project will be Eclipse, as it is a free program, its a window builder plugin allows for fast and seamless GUI creation and its user interface is familiar with the me. A GUI will be used to make the program easier to use for the client, and to allow for faster, more efficient entry of data. The GUI can also present information, such as the teams and game schedules, in a more viewable manner than other forms such as text files.

Criterion for Success:

__ The program opens by showing a list of sports (badminton/tennis) from which the client selects one.

__ Within each sport is a list of players. Players can be added/removed by the client using the GUI. When adding a player, the client is told whether the player is eligible for varsity, JV or both.

__ The client can view and modify the criterion used to score the players. They can also see the average ratings on criterion for the team as a whole, and each separate (Boys Varsity, Girls Varsity, Boys JV, Girls JV) team.

__ The user can enter categories for each criterion, to help them sort criterion into sections. When adding a new criterion, the user can enter the effect the criterion will have on the player's rating.

__ The client can enter criterion ratings for the player, and can view, add and edit these ratings. They can see the history of the player's ratings over time.

__ The program creates a game schedule for the players by splitting them into groups based on how many players and how many courts exist, and the skill levels of the players, then making each player play all others in their court.

__ The client can change the number of courts in the game section. The client can enter game results in the game section. These results are used in the creation of the team.

__ The program creates a team as shown in Appendix 3. The team creation is fair, based on the criterion ratings and game results, and within the acceptable range desired by the coach

__ The GUI is neat and the help section explains all features to the user. The program checks the validity of data entered by the client and informs the client if data has been entered incorrectly.