## **Criterion E: Evaluation**

**Summary of feedbacks and comments**

After seeing the prototype of my application, my client and advisor said that the game is playable, but there could be some improvements (see Test table 1-3).

Game functions: met the client’s requirement, but the problem is not fully solved.

The game meets the client’s requirement that it can demonstrate the functions of a regular tic-tac-toe game and have three-dimensional features. At first, the game is played well that it is more complicated than the normal 2D tic-tac-toe, and players should think carefully when playing the game. However, after the client familiar with the game, we found that the game still has so little variations that the first person can often win. And because the middle cell can connect with all the directions, it gives the first player much advantage if he/she clicks that cell first.

GUI: met the client’s basic requirement, but more features should be added.

The users can interact with the application using GUI features. The mouse action listener and keyboard action listener give convenience to different users. Meanwhile, the client wants me to add more features to allow the players to interact with both the 3D cube (the 2D representation should not just be a picture, the users should be allowed to click the cells on it and turning it). And a replay button should be included in the game to let two users play the game without login again.

Data record and storage: met the client’s requirement

By having a database, the client gets evidence when arguing with me about who wins more in the game. The client also said that he wants to have separate pages to show each account’s playing history, such as total wins, losses, and win-rates.

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**Recommendations for Further Development**

1. Network connection: Yubo said that playing the game on one laptop is not comfortable and the two players should be at the same location. So he suggested me to make this to be an online game, for which I should research about how to connect devices in a LAN and the use of online databases.
2. Email verification for sign-up: My supervisor suggested me to add email verification features into the application. The users could be asked to enter their email when sign-up, and a verification email would be sent to the email, which ensures that each user has only one account. The users could find their password through email verification when they forget their password, and the result of the games could be sent to the player. To do that, I should research about network connection and email protocols like POP3.
3. Single-player mode: If the user cannot find the other player, he/she could play the game against the bot. The bot could block the line when the user has already two cells in a line, and randomly select the user is not likely to win.

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