

CS 591 Final Exam

Qi Yin U31787103

The program that I will analyze is my first version of the TicTacToe. And the analysis is as follows.

1. The object design of program.

There is only one class in my program: TicTacToe.java. This class contains all parts of the game including logic and data. At first, I thought this is a simple game, as a result, I didn't take reusability, encapsulation and abstraction into consideration. Therefore, it is not an object-oriented program.

2. The strengths of the program.

- a) The program is decomposed to steps. The program is procedure-oriented. It is broken into several steps with their own methods, which is logical and intuitive.
- b) The operations are user-friendly. There are some tips to help players to understand the rules of the game, and the way to input is intuitive because the cells are labelled with numbers.

3. The weaknesses of the program.

- a) The program is not decomposed to objects. It is not an object-oriented program. Therefore, there are many disadvantages. For example, it is not flexible. The size of board is fixed and it cannot be changed if players want to play with a larger board. The methods to check if player wins and to print the board is also fixed. So, if the size of board changed, everything should be changed.
- b) Coupling is strong. All data and logic parts are put into a single class which leads to a poor reusability. The class of TicTacToe can be used only in this game.
- c) The primitiveness is low. The object is not as small as it should be. The components in the class is not independent blocks. Thus, it can't be reused.
- d) The encapsulation is poor. All the variables and methods in the class are public. Also, there is no constructors (except the default one), getters and setters.

4. The evaluation score of the program.

I think the score is 2. First, there are no bugs and the operations are user-friendly. It is fine as a 3x3 TicTacToe game. But as an object-oriented program, it is quite terrible for its design. So, I would give it a low score with 2.