Java Assignment

Java Assignment 6: Final Project

You are to create a final java project.

You must submit your project on a shared folder on the S Drive.
You may;

1. **Create a Swing Based Two player Tic Tac Toe**
2. **Create a program that stores data records of some kind of information.**
    a. Examples include:
        i. list of your favorite movies with a comment on each
        ii. facts needed to know to review for a certain courses' final exam
        iii. periodic table of the elements – one record for each element
        iv. list of colleges you are considering
        v. roster list of your favorite sports team

b. Your system must allow the user to create new records, update existing records, load the records in from a disk file and save the records to a disk file
c. You must have at least 6 fields of data for each record
d. You need to have a separate class to represent your data element

3. **Complete a Swing Black Jack Game**
4. **Complete a Choose you own adventure game using either swing or console**

Your program should be fully documented for an "A"
You need to have a comment at the top of your program indicating what the purpose of the program is

Tic Tac Toe Thoughts

- You are to create the classic game Tic Tac Toe (2 player)
- You will design a Swing Application that utilizes some sort of input to allow the user to select one of 9 squares to place an X or O in
- The player's turns will alternate
- Anyone who gets three in a row will win
- If no one achieves 3 in a row, a tie is ruled
- The game must count the number of times X wins, O wins and ties and needs to be able to restart (Use a restart button)
- You need to toggle who goes first each game X then O then X etc

- **Bonus: Devise an AI for the player to play against**

Issues

1. Data representation of the State of the Board
    a. 9 Buttons

i. Can use the setText and getText commands along with setEnabled and isEnabled is desired

ii. Checking for winning a matter of 8 brute force 3 button combinations (use && to link the buttons and || to link the combos)

iii. Probably need a new game method.

b. 9 integers
   i. Can use 0, -1 and 1
   ii. Checking for winning can utilize a summation approach
   iii. Must find a way to get the 0, -1 and 1 to the screen
   iv. Must find a way to block moves that are illegal

c. Two dimensional array
   i. Can be integers, Buttons or both
   ii. Very Flexible, but harder to use
   iii. int board[ ][ ] = new int[3][3];

2. Alternating turns
   a. Can use an int with %2
   b. turn %2 == 1 or 0

3. Ties(there are a limited number of moves that can be made before a tie happens…think if…else if…. else if…. else)

4. Computer logic
   a. Pick random
      i. Use while true and break combo
      ii. Pick a random number from 0-8 or 1-9 or two from 0-2
      iii. Keep going until you find a blank spot

b. Defensive
    i. Block potential opponent wins
c. Offensive
    i. Complete a winning combo
    ii. Set up a winning combo

Project Name	Assign 6-Final Project
App Name	TicApp
Frame Name	TicFrame

Rubric	
Basic Selecting X's and O's	**45**
Check for winning combinations	**35**
Frame appearance	**35**
TOTAL	**115**

Computer Guess Logic Bonus	**20**
Computer Blocks Bonus	**10**
Computer Finishes when there is a winning option bonus	**10**
Computer guarantees a tie bonus	**25**
TOTAL	**65**