JaUa Assignment

Java Assignment 6: Final Project
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You are to create a final java project.

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

You may choose **ONE** of the following;

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 or console Black Jack Game**

   a. Your game can be a console or a graphical black jack game:
   b. You need to have a dealer and at least one player
   c. You will give the player initial chips and let them bet before each hand
   d. When the player and dealer tie, it is a push and chips are returned
   e. When player's hand is done, let the dealer hand play out
      i. Dealer turns their down card up
      ii. Dealer hits if 16 or lower and stays at 17 or higher
      iii. If Dealer busts, player wins bet, if Dealer is higher, player loses bet

   f. Go to next hand unless player has no money left

4. **Complete a Choose your own adventure game using either swing or console**

Your program should be fully commented 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	Assign6_Final_Project
App Name	TicApp
Frame Name	TicFrame

Rubric Tic Tac Toe	
Basic Selecting X's and O's	25
Check for 16 winning combinations	20
Check for Ties	15
Counter for X wins on Frame	5
Counter for O wins on Frame	5
Counter for ties on Frame	5
Frame appearance	10
Alternates who goes first or allows user to select who goes first	10
Clear button clears all buttons and resets turn back to 0 or 1(EVEN IN THE MIDDLE OF A GAME)	10
Deduction for adding two wins if the X's or O's have two diagonals winning on the last move	-5
Deduction for checking for a tie when 2nd player(typically O) goes first	-5
Comments	10
TOTAL	115

Computer Guess Logic Bonus	10
Computer Blocks Bonus	10
Computer Finishes when there is a winning option bonus	10
Computer guarantees a tie bonus	25
TOTAL	55

Project Name	Assign6_Final_Project
Class1 Name	Swimmer
Class2 Name	DatabaseMain

Rubric DataBase System

Good presentation of menu	25
Load records in from disk	25
Edit existing records	15
Save records to disk file	25
Have a separate class for record type	15
Comments	10
TOTAL	115

Project Name	Assign_6_BlackJack
App Name	BlackJackApp
Frame Name	BlackJackFrame
OR	
Class 1 Console	BlackJackMain (console game)

Rubric Black Jack

Sets up a dealer and a player	25
Deals one card face down and one face up to each player	10
Allows a player to take a hit	5
Allows placing a bet (<=chips amount)	5
Handles values no aces	20
Handles multiple aces	10
Dealer hits appropriately	10
Subtracts from bet	10
Handles ties by not subtracting bet	10
Comments	10
TOTAL	115

Project Name	Assign_6_Final_Project_CYOA
App Name	AdventureApp
Frame Name	AdventureFrame
OR	
Class 1 Console	AdventureMain (console game)

Rubric Adventure Game	
Map of Game Handwritten or typed showing Scenarios	25
Basic Game with at least 10 different choices	55
Some random events	15
Has 3 different ways to lose	10
Comments	10
TOTAL	115
BONUS – Has items you can pick up	10