

**CPT 421 Java Programming Principles I**

Unit 6 Final Project Requirements

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The final project asks you to develop an application involving simulation and gaming – Casino Simulation. The goal is to have you apply the knowledge, techniques and problem-solving skills you have learned in this class.

The two game simulations that you will be developing are: Slot Machine and Blackjack.

Here are some suggestions for the game’s design:

1. Ask the player to enter his/her name.
2. Display a personalized welcome message.
3. Ask the player to make an initial deposit, the required minimum amount is $20 and the max is $1000. Your program needs to keep track of the player’s account balance through the entire game.
4. Display a game menu containing the two games offered (Slot Machine, Blackjack) and prompt the player to choose a game he or she wants to play: 1=Slot Machine, 2= Blackjack and the amount the player would like to bet on the chosen game.
5. After a game selection is made, check the player’s account balance. If the balance is insufficient, prompt the user to deposit more money, else the game chosen by the player starts.
6. At the end of each game run, show the following messages: the player’s total deposit, the winning or losing amount and the account balance.
7. Ask the player whether he or she wishes to continue to play a game. Your program performs the tasks indicated by the player.

Slot Machine Simulation

A slot machine is a gambling device that the user inserts money into and then pulls a lever (or presses a button). The slot machine then displays a set of random images. If two or more of the images match, the user wins an amount of money that the slot machine dispenses back to the user.

Create a class that simulates a slot machine. When the program runs, it should do the following:

1. Asks the user to enter the amount of money he or she wants to enter into the slot machine.
2. Instead of displaying images, the program will randomly select a word from the following list: Cherries, Oranges, Plums, Bells, Melons, Bars.
3. To select a word, the program can generate a random number in the range of 0 through 5. If the number is 0, the selected word is Cherries; if the number is 1, the selected word is Oranges; and so forth.
4. The program should randomly select a word from this list three times and display all three of the words.
5. If none of the randomly selected words match, the program will inform the user that he or she has won $ 0.
6. If two of the words match, the program will inform the user that he or she has won two times the amount entered.
7. If three of the words match, the program will inform the user that he or she has won three times the amount entered.
8. Using do…while
9. The game asks whether the user wants to play again. If so, these steps are repeated. If not, the program displays the total amount of money entered into the slot machine, the account balance and the total amount won or lose.

Blackjack Simulation

Blackjack Simulation lets the user play against the computer in a variation of the popular blackjack card game. In this variation of the game, two six- sided dice are used instead of cards. The dice are rolled, and the player tries to beat the computer’s hidden total without going over 21.

1. Each round of the game is performed as an iteration of a loop that repeats as long as the player agrees to roll the dice, and the player’s total does not exceed 21.
2. At the beginning of each round, the program will ask the user whether or not he or she wants to roll the dice to accumulate points.
3. During each round, the program simulates the rolling of two six- sided dice. It rolls the dice first for the computer, and then it asks the user whether he or she wants to roll. ( Use the Die class that was shown in Code Listing 6- 14 to simulate the dice.)
4. The loop keeps a running total of both the computer’s and the user’s points.
5. The computer’s total should remain hidden until the loop has finished.
6. After the loop has finished, the computer’s total is revealed, and the player with the most points, without going over 21, wins.
7. The program asks whether the user wants to play again. If so, these steps are repeated. If not, the program displays the total amount of money entered into the slot machine, the account balance and the total amount won or lose.