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## Final Write Up - Project 2

My program is an imitation of Loteria. The reason I wanted to create this program is to see if I can achieve creating a similar game to it. I started with making a list of what the real game does and running over what steps are taken when playing the game. I want the program to imitate the real game and also made a list of what I expect my program to do. With Loteria there is a set of boards in the package but they all have the images correspondent to the cards in the deck that are randomly placed on the board. Loteria has 54 cards which means that there are 54 different images so there are 54 possible images that can be in the boards. There can be as many players as there are boards in Loteria and there is at least someone calling cards from the deck. The cards are shuffled before every game to have a random opportunity of them appearing. Every time a card is drawn and it is matched with an image on the board it can be covered with something like a bean or a chip to mark it.

At first I wanted there to be visuals which would be a better way to see what the game does. I decided to try recreating the different images in the Loteria game by using letters instead of images. It is the best way to have a range that is known and just like a normal deck of cards. All the letters of the alphabet can be used but it is unlikely that all will be drawn from the deck and there are only 20 cells open for each board. The board will be created randomly from the letters and be assigned to the user and the computer. Just like the real life game if a line horizontally or vertically is filled that person wins.

I started off with creating the deck of cards. I used an arraylist to store my letters into. I had to add each letter of the alphabet one by one. The reason I decided to use an arraylist as a string instead of a normal array with characters is because I want to remove the card that has already appeared and I thought that it would be easier to do that with an arraylist. I created “cells” or spaces on the board using a two dimensional array. I made it be a 4 x 5 board. Then I made another arraylist like the previous one for the cards and made a loop nested into another loop that will allow the program to take the letters of the alphabet and place each one into an open space on the board. I did not want the letters to repeat on the board so every time that the letter was used it would be removed from the arraylist. I created two boards one for the to simulate the user and the other to represent the computer.

After doing that I wanted to make another method to mark the board when a card is dealt. I did this by making a loop nested into another loop that will read each cell for the row for every column on the board. This will make the computer read each cell and see if the card dealt matches the letter in each cell of the board and if it does then the cell will be marked true for filled instead of false like I did when creating a cell class and making it default as false.

With the game coming to a near end of creating I had to create another method that will make the program detect when either the user or the computer won. I did that by making the program read the board from each row first and seeing if all the cells in a row are filled and if they are that means that a win horizontally has been made. I also made it be read from each column so going down instead of going across and this checks if a whole column was filled which means that a vertical win was made.

I wanted to print the boards to show the user what the game is doing. So I printed the board by using the arraylist and printing it each time one cell at a time using a nested loop. At the end is everything went right I would be able to check if there was a win horizontally or vertically by either by the user or the computer. I checked this by making if statement and if there was a win by the user or the computer then it would print "Loteria! You won!" or "Loteria! Computer won!".

This project made me use the current skills taught in class. Creating loops, if statements and arraylist was something that I had to be comfortable in using for this program. I had to stop and think what the best option would be with making the program. For example for when running the game I had to decide if I could use a for loop or a while loop but decided that a while loop was better to use in this situation because I did not have an exact number as to how many times I needed it to run. Even though I was more comfortable in using for loops I new that I had to use a while loop to make my program run smoother.

Overall, I did get the chance to enhance the skills I was taught in class but I was also allowed to expand my current skills and get out of my comfort zone.