

Objective: Create a memory game using an array of objects.

Procedure:

Create a class, called MemoryGame. This class will contain a main method and a collection of static methods to play the game. A list of the methods and each purpose follows.

public static void main ( String [] args )

displays instructions to user

calls playGame

public static String[] create()

Instantiate a one-dimensional array of 36 String objects. This will represent the “cards” that will be used. You may determine what the String objects will contain. There should be 18 pairs. Instantiate the array using an initializer list.

public static String [] shuffle (String [] cards)

Use a loop to shuffle the deck by generating 2 unique random numbers between 0 and 36. Swap each card that has these numbers as subscripts. Return a shuffled deck.

public static void playGame()

Set up the game by calling the create method, the shuffle method and the display method.

Loop until there are no pairs remaining. Within the loop, get users request for cards; turn-over each card; if the cards match, set the element to null. Count the number of times the loop executes and display it at the end of the game. User input will be a row number and a column number. The input must represent an element, in a grid, that is not null.

public static boolean validateInput ( int r, int c, String[][]grid )

Returns true if the parameters represent a row and column of a card that is not null

public static void display ( String[][] grid )

Displays grid, an 6 X 6 two dimensional array. Display “X” for cards that have already been matched and display the category of the cards, ie “Dinosaur” for the cards that have ***not*** yet been matched.