Nathan Kim

Oberle

Period 6

Elevens Lab

Activity 2

1. A deck is a collection, or array(list) of cards.
2. Six Cards
3. ranks: "ace", "king", "queen", "jack", "10", "9", "8", "7", "6", "5", "4", "3", "2”

suits: "spades", "hearts", "diamonds", "clubs"

points: 1, 10, 10, 10, 10, 10, 9, 8, 7, 6, 5, 4, 3, 2

1. No, the deck will shuffle regardless.

Activity 3

1. 1 public static String flip()  
   2 {  
   3 int rand = (int)(Math.random() \* 3);  
   4 if(r ==0)  
   5 return “tails”;  
   6 else  
   7 return “heads”;  
   8 }  
   9
2. 1 import java.util.\*  
   2 public static Boolean arePermutations(int[] a, int[] b) 3 {  
   4 if(a.length != b.length)  
   5 return false;  
   6 if(Arrays.equals(a, b))  
   7 return false;  
   8 Arrays.sort(a);  
   9 Arrays.sort(b);  
   10 if(Arrays.equals(a, b))  
   11 return true;  
   12 }
3. 0, 1, 1

Activity 6

1. 5, 6 or 6, 5
2. The remaining cards must be J Q K in order to win. Otherwise, eliminating another pair will result in an inevitable loner card.
3. In a way, it does require some strategy. However, since you cannot predetermine which card will be picked out of the deck next, you can't strategize beyond realizing that eventually one number will have a higher probability of being drawn than another, influencing your choice to preserve a card for later use.

Activity 7

1. deck, cards, Strings: point values, suits, ranks
2. Deal 9 cards from deck, while cards are still playable choose an 11 pair or a J Q K triplet, deal cards from deck to refill playing board back to 9 until no more cards in play/no pairs/triplets can be made.
3. No, some methods (such as the JQK method) are not yet implemented.
4. A) public ElevensBoard, newGame

B) isLegal, anotherPlayIsPossible

C) 7 6 3 1 0

D) 1 for(int i = 0; i < cIndexes.size(); i<++)  
2 {  
3 System.out.println(cIndexes.get(i) + " ");  
4 }

E) anotherPlayIsPossible, needs to know which indexes contain which cards to identify pairs and triplets

Activity 8

1. They all have the same general mechanic of adding up cards in order to eventually eliminate the entire deck, but 11s has a JQK triplet, different board sizes, different point sums, thirteens removes kings, tens removes quartets of kings, queens, jacks, and tens of the same rank.
2. The ElevensBoard extends Board. Inheritance/polymorphism
3. Yes, the abstract methods allow the game rules to vary in order to fit the specific rules of 11s, 10s, and 13s.

Activity 9

1. Although the size method return different values for different classes, it still maintains the same function.
2. The algorithm required for the method is universal and does not need to change/be made abstract.
3. No, it doesn’t actually extend ElevensBoard. However, it should still work given the method algorithms are accurate.