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import java.util.ArrayList;
import java.util.Random;

public class ArrayListExercises {

    public static void main(String[] args) {

        // You do not need to handle the User Interface (UI).
        // Instead you can run the JUnit test cases found in
ArrayListExercisesTests.java

        bulgarianSolitaire(10);

    }

    /**
     * Removes all of the strings of even length from the given list
     * @param listOfStrings the list of Strings (list can be empty)
     * @return the given list with all even length strings removed
     */
    public static ArrayList<String> removeEvenLength(ArrayList<String> listOfStrings)
{

    for(int i=0; i <listOfStrings.size(); i++) {
        if((listOfStrings.get(i)).length() % 2 == 0) {
            listOfStrings.remove(i);
            i--;
        }
    }

    return listOfStrings; // This return statement should be last
}

    /**
     * Moves the minimum value in the list to the front, otherwise preserving the
order of the elements
     * @param listOfIntegers the list of Integers (list cannot be empty)
     * @return the given list with the minimum value in the front (zeroth element)
     */
    public static ArrayList<Integer> minimumToFront(ArrayList<Integer> listOfInts) {

        int currentMin = 0;
        int nextUp = 0;
        int position = 0;

        currentMin = listOfInts.get(0);

        for(int i = 0; i < listOfInts.size() - 1; i++) {
            int j = 0;
            nextUp = listOfInts.get(i+1);
            if(currentMin > nextUp) {
                currentMin = nextUp;
                position = i+1;
            }
        }

        listOfInts.remove(position);
        listOfInts.add(0, currentMin);

        return listOfInts; // This return statement should be last
    }

    /**
     * Removes all elements from the given list whose values are in the range min
through max (inclusive).
     * If no elements in range min-max are found in the list, the list's contents are
unchanged.
     * If an empty list is passed, the list remains empty. Assume min < max.
     * @param listOfInts the list of Integers (list can be empty)
     * @param min the minimum value in the range
     * @param max the maximum value in the range
     * @return the given list with the range min-max removed
     */
    public static ArrayList<Integer> filterRange(ArrayList<Integer> listOfInts, int
min, int max) {

        for(int i = 0; i < listOfInts.size(); i++) {
            if(listOfInts.get(i) >= min && listOfInts.get(i) <= max) {
                listOfInts.remove(i);
                i--;
            }
        }

        return listOfInts; // This return statement should be last
    }

    /**
     * Models/simulates the game of Bulgarian Solitaire.
     * @param numCards the number of cards to start with; n must be a triangular
number (a triangular
     * number is a number that can be written as the sum of the first n positive
integers).
     */
    public static void bulgarianSolitaire(int numCards) {

        // Check if given number of cards is triangular
        int n = (int) Math.sqrt(2*numCards);
        if (n*(n+1)/2 != numCards) {
            System.out.println(numCards + " is not triangular");
            return;
        }
        //initialize arraylist
        ArrayList <Integer> cards = new ArrayList<>();
        ArrayList <Integer> desiredDeck = new ArrayList<>();

        //generate random number of decks
        Random rand = new Random();
        int numDecks = rand.nextInt(numCards);

        //distribute cards among all decks
        int remainingCards = numCards;

        while (remainingCards > 0) {
            int addCards = rand.nextInt(remainingCards) + 1;
            cards.add(addCards);
            remainingCards-=addCards;
        }

        //before loop: array to check if sorting is done

        int num = numCards;
        int bob = 1;

        while(num > 0) {
            desiredDeck.add(bob);
            num -= bob;
            bob++;

            System.out.println(desiredDeck);
        }

        //subtract one card from each deck and add a new deck sequence

        while(!cards.containsAll(desiredDeck)) {
            int holdSize = cards.size();

            for(int i = 0; i < cards.size();i++) {
                cards.set(i, cards.get(i) - 1);

                //remove zeroes
                if(cards.get(i) == 0) {
                    cards.remove(i);
                    i--;
                }
            }

            //add changing size of deck
            cards.add(holdSize);
        }

        //print final order of cards
        System.out.println(cards);
    }
}

```