* + **Task: Open the College Board AP Classroom, Unit 7 ArrayList.**a. Watch 7.2 Daily Video 1: ArrayList methods: size(), add(obj), add(i, obj), get(i), set(i, obj), remove(i).
    1. Answer the following questions in complete sentences in your Word document.
       1. What is the effect of set(i, obj) on an ArrayList in terms of:
          1. The element that was at index i, before set was called? (3 points)

The element that was at index i, before set was called is replaced with obj.

* + - * 1. Do elements in the ArrayList shift as a result of set? (3 points)

No, elements do not shift as a result of set.

* + - * 1. Does the size of the ArrayList change? (3 points)

The size of the ArrayList does not change because no values have been shifted or added, one is just changed.

* + - * 1. What does set return? (3 points)

Set returns the element formerly at position i.

* + - 1. What is the default size of an ArrayList when it is constructed? (3 points)
         1. 10
      2. If an ArrayList, list, currently has 5 elements, what is the index of newObject after list.add(newObject)? (2 point)
         1. 5
      3. Which of the following ArrayList methods change the ArrayList size: size(), add(obj), add(i, obj), get(i), set(i, obj), remove(i)? (3 points)
         1. add(obj), add(i, obj), and remove (i)
  + b. Watch 7.2 Daily Video 3: ArrayList example FRQ (2019, String, delimiters. Uses both arrays and ArrayLists).
    1. Answer the following questions in complete sentences in your Word document.
       1. In part a, getDelimitersList, an ArrayList of objects is returned.
          1. What type of objects make up the returned ArrayList? (5 points)

String objects

* + - * 1. The parameter of getDelimitersList is an Array. Does getDelimitersList change the Array? (4 points)

No, it does not. It just adds elements from the array into the resultant ArrayList

* + - 1. In part b, isBalanced.
         1. What conditions result in a return value of false? (4 points)

If openCount != closeCount

* + - * 1. Does isBalanced change the ArrayList? (4 points)

No, it does not.

* + c. Watch 7.3 Daily Video 1: Traversing ArrayLists using for or while loops.
    1. Answer the following questions in complete sentences in your Word document.
       1. What kind of error may result if an element is removed while traversing an ArrayList using a for loop, forward: from 0 to size()-1? (7 points)
          1. ArrayIndexOutOfBoundsException
       2. How can you avoid this problem? (8 points)
          1. Indexing properly with a correct loop and ensuring that the indexed section of the array is not null prior to accessing it.
  + d. Watch 7.3 Daily Video 2: Traversing ArrayLists using an enhanced for loop.
    1. Answer the following questions in complete sentences in your Word document.
       1. What 3 limitations are there in using an enhanced for loop (for each loop)? (9 points)
          1. ArrayList elements cannot be modified, removed from, or added to the ArrayList.
       2. Which type of loop allows access to indices: for loop or enhanced for loop? (6 points)
          1. For loop
       3. Given:  
          ArrayList<String> books = new ArrayList<String>();
       4. In the for each loop, for (String title : books), is title a reference to an element of books or a copy of an element of books? (5 points)
          1. A reference.
  + e. Watch 7.5 Daily Video 2: Searching ArrayLists.
    1. Answer the following questions in complete sentences in your Word document.
       1. When searching ArrayLists, when do you use == for comparing elements? (4 points)
          1. Int values.
       2. When searching ArrayLists, when do you use .equals for comparing elements? (4 points)
          1. Objects
       3. What is delta and why is it used? (5 points)
          1. Delta is a double which is used in a comparison to check if a double is close enough to the double we are trying to compare.
       4. Given a Circle class with the following method headers:  
          public static int circleTest(ArrayList<Circle> cir) {

for (int i = 0; i < cir.size(); i++) {

if (Math.abs(5 - cir[i].getRadius()) < 0.01) {

return i;

}

}

return -1;

}

* + f. Watch 7.6 Daily Video 3: Sorting Efficiencies.
    1. Answer the following questions in complete sentences in your Word document.
       1. What is one way to measure the efficiency of sorting algorithms? (10 points)
          1. Big O notation or counting the number of loops before a return value
  + **Task: Select Unit 7 Personal Progress Check MCQ.**
    1. Answer all the questions to the best of your ability.
    2. Click on the Submit button to record your answers.