

Worksheet: class ArrayList (part 1)

1. Consult the **Java ArrayList Class** document to answer the following questions. Use complete sentences for short-answer questions.

- a) Given arrays in Java are of fixed length, what must a programmer do add a new element or delete an element from an existing array?

- b) Look at the Java Collections hierarchy to determine which *interface* the `ArrayList` class implements.

- c) Write the complete method header for each and every `ArrayList` method that is included in the *Java AP Subset*.

- d) Write a statement that declares and initializes an array named `arr` that can store 5 objects of type `String`.

- e) Write a statement that declares and initializes an `ArrayList` named `list` that can store objects of type `String`.

- f) Write a statement that adds the `String` “Last” to the end of an `ArrayList` named `list`.

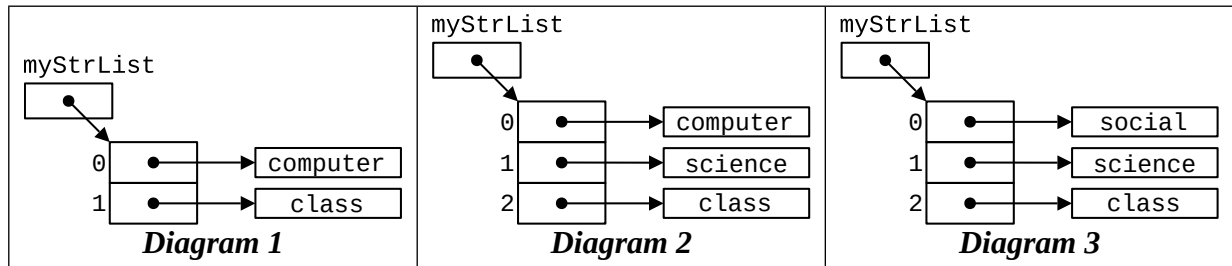
- g) Write a statement that removes the first element of an `ArrayList` named `list`.

- h) Write a statement that changes the element at index 1 of an `ArrayList` named `list` to a `String` with a value “element 1”.

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2. Given the following diagrams.



Demonstrate your proficiency with ArrayList by writing the specified code.

a) Write code that creates the ArrayList represented by **Diagram 1**.

b) Use the add method to change the ArrayList given by **Diagram 1** into the structure represented by **Diagram 2**.

c) Use the set method to change the ArrayList given by **Diagram 2** into the structure represented by **Diagram 3**.

3. Given the following code for method swap, write a version that replaces the array parameter with an ArrayList parameter.

```
1 private static void swap(String[] a, int i, int j) {  
2     String tmp = a[i];  
3     a[i] = a[j];  
4     a[j] = tmp;  
5 }
```