

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**.

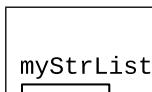
f) Write a statement that adds the **String** “Last” to the end of an **ArrayList** named **list**.

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

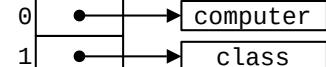
h) Write a statement that changes the element at index 1 of an **ArrayList** named **list** to a **String** with a value “element 1”.

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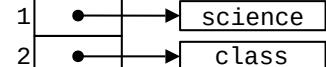
2. Given the following diagrams.

**Diagram 1**

myStrList

**Diagram 2**

myStrList

**Diagram 3**

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  }
```