

Model 1 ArrayList Methods

Open the [ArrayList documentation](#) to answer questions about the following methods. The data type “E” refers to the type of elements in the ArrayList (e.g., Integer).

Return Type	Method	Description
boolean	add(E e)	Appends the specified element to the end of this list.
void	add(int index, E element)	Inserts the specified element at the specified position in this list.
E	get(int index)	Returns the element at the specified position in this list.
E	set(int index, E element)	Replaces the element at the specified position in this list with the specified element.
int	size()	Returns the number of elements in this list.

Questions (15 min)

Start time:

1. What value does the add method return?
2. What value does the set method return?
3. What happens to existing elements when adding an element at a specified index?

4. What are the contents of nums after running the following code?

```
ArrayList<Integer> nums;  
nums = new ArrayList<Integer>();  
nums.add(74);  
nums.add(21);  
nums.add(0, 11);  
nums.set(1, 59);
```

5. The following program, found in *Model3.java*, uses an array of ints. Rewrite the program to use an ArrayList instead.

```
import java.util.Arrays;

public class Model3 {

    public static void main(String[] args) {
        final int N = 4;
        int[] nums = new int[N];
        for (int i = 0; i < N; i++) {
            nums[i] = i + 1;
        }
        for (int i = 0; i < N; i++) {
            nums[i] *= 5;
        }
        System.out.println(Arrays.toString(nums));
    }
}
```