

ArrayList Homework #2
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AP Computer Science A

1. Trace through the following code and determine the state of the ArrayList after the last line. Also, report any error conditions that are encountered.

```
ArrayList<Integer> list1 = new ArrayList<Integer>();  
for (int i = 1; i <= 10; i++)  
    list1.add(i);  
  
for (int i = 0; i < list1.size(); i++)  
    if (list1.get(i) == 3)  
        list1.remove(i);  
  
System.out.println(list1);
```

{1, 2, 3, 4, 5, 6, 7, 8, 9, 10}

{1, 2, 4, 5, 6, 7, 8, 9, 10}

{1, 2, 4, 5, 6, 7, 8, 9, 10}

2. Trace through the following code and determine the state of the ArrayList after the last line. Also, report any error conditions that are encountered.

```
ArrayList<Integer> list2 = new ArrayList<Integer>();  
for (int i = 1; i <= 10; i++)  
    list2.add(i);  
  
int size = list2.size();  
  
for (int i = 0; i < size; i++)  
    if (list2.get(i) == 3 || list2.get(i) == 4)  
        list2.remove(i);  
  
System.out.println(list2);
```

{1, 2, 3, 4, 5, 6, 7, 8, 9, 10}

size = 10

Remove's 3, not 4!

Will crash when i reaches index 9!

3. Trace through the following code and determine the state of the ArrayList after the last line. Also, report any error conditions that are encountered.

```
ArrayList<Integer> list3 = new ArrayList<Integer>();  
for (int i = 1; i <= 10; i++)  
    list3.add(i);  
  
for (int i = 0; i < list3.size(); i++)  
    if (list3.get(i) == 3 || list3.get(i) == 4)  
        list3.remove(i);  
  
System.out.println(list3);
```

{1, 2, 3, 4, 5, 6, 7, 8, 9, 10}

Remove's 3, not 4!

{1, 2, 4, 5, 6, 7, 8, 9, 10}