

Quiz 11: ArrayLists

SOLUTION

CSCI 110 Section 1

Monday, September 19, 2016

- 1) Write a function that takes three booleans and returns them all smushed together into a String. Use `Boolean.toString()` to convert each boolean to a String. [20 points]

What should my return type be? String

What should my parameters be? three Booleans

What should my function name be? `smushBooleans`

```
String smushBooleans(boolean a, boolean b, boolean c) {  
    return Boolean.toString(a) + Boolean.toString(b)  
        + Boolean.toString(c);  
}
```

- 2) Create an ArrayList of Booleans and add the following five items in this order: true, false, true, true, true. [20 points]

```
ArrayList<Boolean> list = new ArrayList<Boolean>();  
list.add(true);  
list.add(false);  
list.add(true);  
list.add(true);  
list.add(true);
```

You could also do `list.add(new Boolean(true))` but it's not strictly necessary.

- 3) Say you have an ArrayList named `soccerStars` that you don't know the length of. Write code to print "so many" if `soccerStars` contains more than 15 elements. [20 points]

```
if (soccerStars.size() > 15) {  
    System.out.println("so many");  
}
```

4) What does the following code print? [20 points]

```
ArrayList<Integer> nums = new ArrayList<Integer>();
for (int i = 0; i < 5; i++) {
    nums.add(i * 2);
}
for (int i = 0; i < nums.size(); i++) {
    if (nums.get(i) % 3 == 0) {
        System.out.println(nums.get(i));
    }
}
```

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After the first for loop, nums contains [0 2 4 6 8]. The second for loop iterates through all of the elements in nums. If a given element is evenly divisible by 3, it gets printed out.

5) Assume we have the Cat class from the previous lecture, and that the constructor takes zero arguments. Create two Cat objects, create an ArrayList that holds Cat objects, and put the Cat objects in the ArrayList. [20 points]

```
Cat a = new Cat();
Cat b = new Cat();
ArrayList<Cat> cats = new ArrayList<Cat>();
cats.add(a);
cats.add(b);
```

6) Say we have the array nums defined below. Add code to replace each existing element with one triple its value (do not create a new ArrayList). [extra credit, 20 points]

```
ArrayList<Integer> nums = new ArrayList<Integer>();
for (int i = 0; i < 5; i++) {
    nums.add(i);
}

for (int i = 0; i < 5; i++) {
    nums.set(i, nums.get(i) * 3);
}
```