

## Unit 3 – Arrays and ArrayList Review

What the exam covers:

- All notes and assignments related to Arrays, 2D Arrays, and Lists (see website)

Topics to Know:

### Arrays

- Declare and create arrays.
- Access specific elements in an array using indices.
- Access an array's length.
- Use loops to access all elements in an array and do something with them.
- How to read/use for-each loops

The major coding exercises from this chapter were from Coding Bat Array-1 and Array-2, so expect there to be at least one problem that looks like something from these questions. Doing additional coding bat problems would make great studying.

### 2D Arrays

- Declare and create 2D arrays
- Access specific elements in a 2D array using indices
- Access the number of rows, columns, and elements in a 2D array
- Looping through a specific row or column
- Use a nested for loop to access all the elements or a region of elements in a 2D array.

For 2D Arrays, expect to have to write methods similar to the methods that we wrote for Chomp and Rotten Potatoes. Methods like fillRect from Chomp or hardestReviewer from Rotten Potatoes are good examples of the kinds of questions you'll see here.

### ArrayLists

- Declare and create ArrayLists
- Understand the difference between capacity and size
- Understand Wrapper classes and the fact that primitives can't be stored in ArrayLists
- Identify when Autoboxing and Auto-unboxing is happening, and the reasons why it happens
- Using the methods add, get, remove, set, size
- Understanding the big problem with removing elements from an ArrayList in a loop and how to solve it.

The example questions from the list assignment are a good example of the types of questions you will see on the exam: expect a question that involve an ArrayList that requires a single loop and removing or changing items based on some criteria.