


Arrays Worksheet - Single Dimension



Homework

Try to complete these by hand. Resist the temptation of coding them with a computer and relying on it as a crutch. You need to get used to writing correct code by using careful thought, a drawing, and the tracing techniques modeled for you in class. You do not get a computer for the AP exam.

Complete the following methods by hand:

1.
 - `// precondition: nums.length >= 1`
`// returns the index of the largest integer in the nums array (first such index if more than one)`
 - a. `public int findPosOfLargest(int[] nums)`
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 - `// precondition: nums.size() >= 1`
`// postcond: returns the largest Integer object (first such Integer if more than one)`
 - b. `public Integer findLargest(ArrayList nums)`
 -
 - `// precondition: nums.size() >= 1`
`// postcond: return the location of the largest String object(lexicographically) in words`
 - c. `public int findPosOfLargest(ArrayList words)`

2.
 - a. `// precondition: ArrayList contains at least 1 integer`
`// postcond: the array which is returned has a length equal to the number of Integers in the ArrayList`
`// and all Integers(the int values) have been placed into the array`
`public int[] createVectorFromArrayList(ArrayList list)`
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 - b. `// precondition: list is not null`
`// postcond: all elements contained in list are in reverse order – so, for example, if “A”, “B”, “C”`
`// were in the list to begin with, then “C”, “B”, “A” would be the elements when done.`
`// You may not create more data structures to help you – you may use temporary`
`// variables but they may not be arrays or ArrayLists.`
`public void reverse(ArrayList a)`

- 3.
- a. // precondition: `nums.length >= 1`
// postcondition: returns the first location where value occurs in the array – if the value
// does not occur, return -1
`public int posInArray(int[] nums, int value)`
- b. // precondition: `list.size() >= 1`
// postcondition: returns the index of the first occurrence of s within list, -1 if not in ArrayList
// note: after you write this, write down what you've learned
`public int posInArrayList(ArrayList list, SomeObject s)`
4. /* removes all occurrences of s from nums */
`public void removeAll(ArrayList nums, SomeObject s)`
5. /* the function receives a String and a vector whose elements are in ascending order - it returns the
vector with the new String inserted into its proper place
(e.g., let word = "g", array = a c c f r s v w and the function returns the vector a c c f g r s v w)
*/
// precondition: `words.length >= 2`, elements in words are in ascending order,
`words[words.length-1]` is to be considered empty so we have somewhere to insert the
element
// postcondition: word has been placed into the correct location within words and all other elements have
been moved accordingly in order to maintain order
`public void insertIntoVector(String[] words, String word)`