COMP 203 Lab 6

List

1 Implement List abstract data structure as a fixed size array in java. **(80pt)**

Implement Integer ArrayList class **(10pt)** and the following methods:
add(int i , int element): inserts “element” at the index of i. **(10pt)**
get(int i): returns the integer at the index of i. **(10pt)**
set(int i, int element): updates the element at the index of i with “element” and returns the old element value. **(10pt)**
remove(int i): removes the element at the index of i and returns the element that is removed. **(10pt)**
copyArray(int sizeofCurrentArray): copies the current array to the new array with the double size when the current array is full. This function returns the new array. **(10pt)**
isEmpty(): checks if the list is empty or not. **(5pt)**
isFull(): checks if the list is full or not. **(5pt)**

Hint: Do the necessary controls for each method such as if it is full or not, empty or not, or if the index is valid or not.

Test all these function in the main. Print the current condition of the list after every operation. **(10pt)**

Submit ArrayList.java to Canvas.

2. Use built-in List class of Java along with its methods add, remove, set, get in the main. You may create your list object from ArrayList class. Use string data type for the object. Print the current condition of the list after every operation. (20pt)

Submit Test.java to Canvas.