CSE30: Data Structures
Lab 3

Due Date: Sunday, September 27, 11:59 pm

1   Tasks

Take a look at the `Arrays.h` file in your `inc` folder. It is the example file seen in class, with some additional functions. The additional functions have only been declared in the struct, but they have not been implemented. Your task is to implement them.

Task 1   The first function you are being asked to implement is `int get(int index)`. This function simply returns the value that appears in the array position specified by `index`.

Task 2   The second function is `void set(int index, int value)`. Its job is to store `value` in the array position corresponding to `index`.

Task 3   Complete the unit tests for the `void insert(int index, int value)` function. They should cover all the aspects of the function, convincing us that any implementation that passes your tests, is in fact correct.

Task 4   The last function to implement is `void insert(int index, int value)`. As the name suggests, it needs to insert the `value` at the `index`. It should not overwrite anything. If there is already a something stored at `index`, it should be shifted to the right. If `index` is larger than the current size of the array, then it needs to be resized in order to accomodate. If there is a gap between the old size of the array, and the newly inserted `value`, that gap should be filled with 0s.

This lab is out of 100 points. They will be awarded as follows:

- 10 points for Task 1

- 10 points for Task 2

- 50 points for Task 3

- 40 points for Task 4