

# CSE 4304: Data Structures Lab

## Lab 02 Group 1A

### Task 1:

Create a Dynamic Array Class containing the following methods:

- **Get(i):** returns the element at location i
- **Set(i, val):** Sets element i to val
- **PushBack(val):** Adds val to the end
- **Remove(i):** Removes the element at location i
- **Size():** returns the number of elements in the array
- **Capacity():** returns the current highest number of elements the array can store

Note: Some of the methods are completed for your convenience. You can look up the pseudo-code of the methods while implementing them.

### Task 2:

Using the Dynamic Array Class from Task 1, write a method that takes a dynamic array **digits** as input. The array **digits** represent a large integer, where each **digits[i]** is the **i<sup>th</sup>** digit of the integer. The digits are ordered from most significant to least significant in left-to-right order. The large integer does not contain any leading **0**'s. Your task is to increment the large integer by one and return the resulting integer as a dynamic array of digits.

#### **Example 1:**

**Input:** digits = [1,2,3]

**Output:** [1,2,4]

**Explanation:** The array represents the integer 123. Incrementing by one gives  $123 + 1 = 124$ . Thus, the result should be [1,2,4].

#### **Example 2:**

**Input:** digits = [9,9,9]

**Output:** [1,0,0,0]