**ICS 108 – Object-Oriented Programming**

**Lab # 22 – Generics**

**Objectives:**

In this lab, the following topic will be covered:

1. Generics

**Task**

Implement a dynamic array capable of holding objects of an arbitrary type, T, by defining a DynamicArray class that implements the dynamic array with an array initially of size 2. A dynamic array is a type of list where a new item will be added to the end of array. You should check the array size before adding a new element. If the array is full, create a new array that doubles the current array size and copy the elements from the current array to the

new array. Your class should support the following methods:

* add(item)—Adds a new item to the end of the dynamic array.
* remove()—Removes and returns the last item from the dynamic array.

For example, if da is a dynamic array defined to take String elements.

da.add("X");

da.add("Y");

da.add("Z");

System.out.println(da.remove()); *// Returns Z*

System.out.println(da.remove()); *// Returns Y*

System.out.println(da.remove()); *// Returns X*

System.out.println(da.remove()); *// Returns null*