**CS 515 Exercise D03: STL set and map exercise**

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**Lecture Section: 01**

1. What’s the output of the following code?

import java.util.Iterator;

import java.util.SortedSet;

import java.util.TreeSet;

public class Main {

public static void main(String[] args) {

SortedSet<String> s = new TreeSet<>();

boolean result;

s.add("There"); s.add("World"); s.add("World");

result = s.add("Hello");

System.out.println("insert successful? " + result);

result = s.add("Hello");

System.out.println("insert successful? " + result);

System.out.print("Set contains:");

for (String item : s) {

System.out.print(" " + item);

}

System.out.println();

System.out.print("Set contains:");

Iterator<String> it = s.iterator();

while(it.hasNext()) {

System.out.print(" " + it.next());

}

System.out.println();

}

}

***Output:***

insert successful? True

Insert successful? False

Set contains: Hello There World

Set contains: Hello There World

1. Complete the count method so that it returns the total number of unique values in an array of integers. Try to find a solution that contains five lines of code or fewer. You may assume that any Java containers you need are already imported.

static public int count(int arr[])

{

TreeSet<Integer, Integer> uniques;

For (int i = 0; i < arr.length; ++i) {

uniques.add(i)

}

Return uniqes.size();

}

1. Explain how you would complete the mode method so that it returns the mode of the array of integers (which number appears most often) and prints how many times that value appeared. If there’s a tie, the smaller value wins. If you decide to give code instead of an explanation, assume that any needed Java containers are already imported.

static public int mode(int arr[])

{

TreeMap<Integer, Integer> counts;

Int max;

For (int i = 0; i < arr.length; ++i) {

For (int k = 0; k < arr.length; ++k){

counts.put(i, getOrDefault(i,0) + 1);

}

If (counts.get(i) > max) {

max = counts.get(i)

}

}

Return max;

}