SETS

In this lab you are going to implement a set class for integers.

As most of you will know “A set is an **unordered** collection of **unique** elements”. Your set class will have the following operations:

1- A constructor which initializes the capacity of set to 5 elements. (10)

2- A constructor which takes an array and its size as arguments and initializes the set equal to that array. The array may contain duplicates so you will have to take care of that. (10)

3- An add() method which takes an integer and adds it to the set. If already present this function does not need to do anything. (20)

4- A remove() method which removes a given element from the set. (15)

5- A shuffle() method which permutes/shuffles the elements of the set randomly. (20)

6- A check_equal() method which takes another set as argument and returns true if both are equal. Remember two sets with same elements are equal regardless of the order of elements, e.g. {1,3,5} and {1,5,3} are equal but {2,6,8} and {6, 8, 2, 9} are not equal. (20)

7- A get() method which takes an index i as argument and returns ith elements of the set. Take care of the invalid indices. (5)

8- A print() method which prints the set. (0)

Important Note: You may need to resize the set while adding elements. It does not matter if you resize while deleting as long as your set is working as it should.