AP Computer Science
Pairs Programming Assignment
Due: 11:59pm on Friday 3/5/2021

Create class **IntegerSet** for which each IntegerSet object can hold a list of integers in the range 0 through 100.

Your number set will be represented as an array of Boolean values. An array element will be “true” if that integer is in the set and “false” if that integer is not in the set.

So, for example, if your list of numbers was {2, 4, 7, 10}, your array would be

a[0] = false *a[1] = false* ***a[2] = true*** *a[3] = false* ***a[4] = true*** *a[5] = false*
a[6] = false ***a[7] = true*** *a[8] = false* *a[9] = false* ***a[10] = true***

a[11] through a[100] = false

The default constructor will initialize the list to the empty set. You do not need to create a specific constructor.

Provide the following functions:

union – a union of two sets is defined as each of the numbers in each of the lists.

Example: {2, 4, 7, 10} U {1, 2, 3, 4, 5} would return {1, 2, 3, 4, 5, 7, 10}

intersection – an intersection of sets is defined as the numbers present in each list

Example: {2, 4, 7, 10} ∩ {1, 2, 3, 4, 5} would return {2, 4}

addNumber – adds a number to the list

Example: set1.addNumber(5) would add 5 to your list

removeNumber – removes a number from the list

Example: set1.removeNumber(5) would remove 5 from the list

printSet – prints the list in the forms as seen above

Example: set1.printSet() would print {2, 4, 7, 10} (print empty as { })

isEqualTo – Boolean method to determine if two sets are equivalent

Example: set1.isEqualTo(set2) would return true or false

Name ____________________________

Name ____________________________

Period _________

IntegerSet Rubric

IntegerSet Class

___ / 4	Default constructor created properly
___ / 5	union method created properly
___ / 5	intersection method created properly
___ / 4	addNumber method created properly
___ / 4	removeNumber method created properly
___ / 4	printSet method created properly
___ / 4	isEqualTo method created properly

IntegerSetTest Class

____ / 2	Created several **IntegerSet** objects filled with preset values
____ / 2	Created several **IntegerSet** objects filled with random values
____ / 10	All methods are fully tested with each of the various sets
___ / 6	All style requirements met for each class

TOTAL ____ / 50 points

-2 points for each day late through March 12th