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: $\{2, 4, 7, 10\} \cap \{1, 2, 3, 4, 5\}$ 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 {})

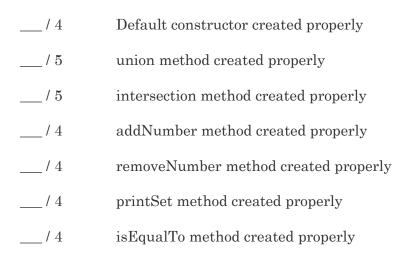
isEqualTo – Boolean method to determine if two sets are equivalent

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

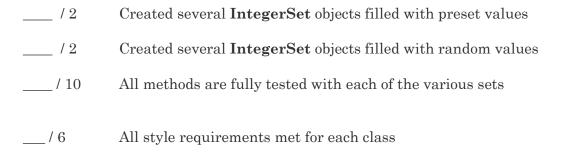
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IntegerSet Rubric

IntegerSet Class



IntegerSetTest Class



TOTAL / 50 points
-2 points for each day late through March 12th