Status	Finished
Started	Saturday, 9 November 2024, 6:48 PM
Completed	Saturday, 9 November 2024, 7:06 PM
Duration	17 mins 28 secs

Question **1**

Correct

Marked out of 1.00

Java HashSet class implements the Set interface, backed by a hash table which is actually a HashMap instance.

No guarantee is made as to the iteration order of the hash sets which means that the class does not guarantee the constant order of elements over time.

This class permits the null element.

The class also offers constant time performance for the basic operations like add, remove, contains, and size assuming the hash function disperses the elements properly among the buckets.

Java HashSet Features

A few important features of HashSet are mentioned below:

- Implements Set Interface.
- The underlying data structure for HashSet is Hashtable.
- As it implements the Set Interface, duplicate values are not allowed.
- Objects that you insert in HashSet are not guaranteed to be inserted in the same order. Objects are inserted based on their hash code.
- NULL elements are allowed in HashSet.
- HashSet also implements **Serializable** and **Cloneable** interfaces.
-

```
public class HashSet<E> extends AbstractSet<E> implements Set<E>, Cloneable, Serializable
Sample Input and Output:
5
90
56
45
78
25
78
Sample Output:
78 was found in the set.
Sample Input and output:
3
2
7
9
5
Sample Input and output:
5 was not found in the set.
```

Answer: (penalty regime: 0 %)

Reset answer

```java
import java.util.HashSet;
import java.util.Scanner;

public class Prog {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        // Read the number of elements to be added to the HashSet
        int n = sc.nextInt();

        // Create a HashSet to store the numbers
        HashSet<Integer> numbers = new HashSet<>();

        // Add values to the HashSet
        for (int i = 0; i < n; i++) {
            numbers.add(sc.nextInt());
        }

        // Read the key to check if it exists in the set
        int skey = sc.nextInt();

        // Check if the skey is present in the set and print the result
        if (numbers.contains(skey)) {
            System.out.println(skey + " was found in the set.");
        } else {
            System.out.println(skey + " was not found in the set.");
        }

        sc.close();
    }
}

```

	Test	Input	Expected	Got	
✓	1	5 90 56 45 78 25 78	78 was found in the set.	78 was found in the set.	✓
✓	2	3 -1 2 4 5	5 was not found in the set.	5 was not found in the set.	✓

Passed all tests! ✓

Question **2**

Correct

Marked out of 1.00

Write a Java program to compare two sets and retain elements that are the same.

Sample Input and Output:

5

Football

Hockey

Cricket

Volleyball

Basketball

7 // **HashSet 2:**

Golf

Cricket

Badminton

Football

Hockey

Volleyball

Handball

SAMPLE OUTPUT:

Football

Hockey

Cricket

Volleyball

Basketball

Answer: (penalty regime: 0 %)

```java
import java.util.HashSet;
import java.util.Scanner;

public class CompareSets {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        // Read the first set
        int n1 = sc.nextInt();  // Number of elements in first set
        sc.nextLine();  // Consume the newline character after the number input
        HashSet<String> set1 = new HashSet<>();

        // Add elements to the first set
        for (int i = 0; i < n1; i++) {
            set1.add(sc.nextLine());
        }

        // Read the second set
        int n2 = sc.nextInt();  // Number of elements in second set
        sc.nextLine();  // Consume the newline character after the number input
        HashSet<String> set2 = new HashSet<>();

        // Add elements to the second set
        for (int i = 0; i < n2; i++) {
            set2.add(sc.nextLine());
        }

        // Retain common elements
        set1.retainAll(set2);

        // Output the common elements
        for (String sport : set1) {
            System.out.println(sport);
        }

        sc.close();
    }
}

```

	Test	Input	Expected	Got	
✓	1	5 Football Hockey Cricket Volleyball Basketball 7 Golf Cricket Badminton Football Hockey Volleyball Throwball	Cricket Hockey Volleyball Football	Cricket Hockey Volleyball Football	✓
✓	2	4 Toy Bus Car Auto 3 Car Bus Lorry	Bus Car	Bus Car	✓

Passed all tests! ✓

Question **3**

Correct

Marked out of 1.00

Java HashMap Methods

containsKey() Indicate if an entry with the specified key exists in the map

containsValue() Indicate if an entry with the specified value exists in the map

putIfAbsent() Write an entry into the map but only if an entry with the same key does not already exist

remove() Remove an entry from the map

replace() Write to an entry in the map only if it exists

size() Return the number of entries in the map

Your task is to fill the incomplete code to get desired output

Answer: (penalty regime: 0 %)

Reset answer

```
import java.util.HashMap;
import java.util.Map.Entry;
import java.util.Set;
import java.util.Scanner;

public class Prog {
    public static void main(String[] args) {
        // Creating HashMap with default initial capacity and load factor
        HashMap<String, Integer> map = new HashMap<String, Integer>();

        String name;
        int num;
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();

        // Adding entries to the map
        for (int i = 0; i < n; i++) {
            name = sc.next();
            num = sc.nextInt();
            map.put(name, num);
        }

        // Printing key-value pairs
        Set<Entry<String, Integer>> entrySet = map.entrySet();
        for (Entry<String, Integer> entry : entrySet) {
            System.out.println(entry.getKey() + " : " + entry.getValue());
        }

        System.out.println("----------");

        // Creating another HashMap
        HashMap<String, Integer> anotherMap = new HashMap<String, Integer>();

        // Inserting key-value pairs to anotherMap using put() method
        anotherMap.put("SIX", 6);
        anotherMap.put("SEVEN", 7);

        // Inserting key-value pairs of map to anotherMap using putAll() method
        anotherMap.putAll(map);  // code here to copy all entries from map to anotherMap

        // Printing key-value pairs of anotherMap
        entrySet = anotherMap.entrySet();
        for (Entry<String, Integer> entry : entrySet) {
            System.out.println(entry.getKey() + " : " + entry.getValue());
        }

        // Adds key-value pair 'FIVE-5' only if it is not present in map
        map.putIfAbsent("FIVE", 5);
        // Retrieving a value associated with key 'TWO'
        Integer value = map.get("TWO");
```

	Test	Input	Expected	Got	
✓	1	3 ONE 1 TWO 2 THREE 3	ONE : 1 TWO : 2 THREE : 3 ---------- SIX : 6 ONE : 1 TWO : 2 SEVEN : 7 THREE : 3 2 true true 4	ONE : 1 TWO : 2 THREE : 3 ---------- SIX : 6 ONE : 1 TWO : 2 SEVEN : 7 THREE : 3 2 true true 4	✓

Passed all tests! ✓

◄ Lab-11-MCQ

Jump to...

TreeSet example ►