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Batch Code : **Java_ANP-C6315**

Lab Assignment-14

Q1: Write a Java program that demonstrates the following operations on a HashSet:

- Create a HashSet of integers.
- Add the numbers 5, 10, 15, 20, and 25 to the set.
- Display the elements of the set.
- Check if the set contains the number 10.
- Remove the number 15 from the set.
- Display the size of the set.

Input:

```
package CoreJava;
import java.util.ArrayList;
import java.util.Collections;
public class EvenNumberSort {

	public static void main(String[] args) {
		// TODO Auto-generated method stub
		// Create an ArrayList object
	ArrayList<Integer> evenNumbers = new ArrayList<>();

	// Read the even numbers
	for (int i = 0; i < 10; i++) {
	   if (i % 2 == 0) {
	      evenNumbers.add(i);
	   }
	}
```

```java
// Print the even numbers
System.out.println("Even numbers:");
for (Integer evenNumber : evenNumbers) {
    System.out.println(evenNumber);
}

// Sort the even numbers
Collections.sort(evenNumbers);

// Print the sorted even numbers
System.out.println("Sorted even numbers:");
for (Integer evenNumber : evenNumbers) {
    System.out.println(evenNumber);
}

// Reverse the list
Collections.reverse(evenNumbers);

// Print the reversed even numbers
System.out.println("Reversed even numbers:");
for (Integer evenNumber : evenNumbers) {
    System.out.println(evenNumber);
}

// Find the max and min value from list
int max = evenNumbers.get(evenNumbers.size() - 1);
int min = evenNumbers.get(0);

// Print the max and min value from list
System.out.println("Max value: " + max);
System.out.println("Min value: " + min);

// Read the search value
int searchValue = 4;

// Search by using BinarySearch()
int index = Collections.binarySearch(evenNumbers, searchValue);

// Print the index of the search value
if (index != -1) {
    System.out.println("Search value found at index: " + index);
} else {
    System.out.println("Search value not found!");
```

```
        }
    }

}
```

Output:

```
Even numbers:
0
2
4
6
8
Sorted even numbers:
0
2
4
6
8
Reversed even numbers:
8
6
4
2
0
Max value: 0
Min value: 8
Search value found at index: 2
```

Q2: Write a Java program that calculates the sum of all even numbers present in an ArrayList of integers

Input:

```
package CoreJava;

public class ReverseString {

	public static void main(String[] args) {
		// TODO Auto-generated method stub
		String input = "Hello, World!";
	String reversed = reverseString(input);
	System.out.println("Original String: " + input);
	System.out.println("Reversed String: " + reversed);
    }

    public static String reverseString(String input) {
	char[] charArray = input.toCharArray();

	int left = 0;
	int right = charArray.length - 1;

	while (left < right) {
	    // Swap the characters at the left and right positions
	    char temp = charArray[left];
	    charArray[left] = charArray[right];
	    charArray[right] = temp;

	    // Move the left pointer to the right and the right pointer to the left
	    left++;
	    right--;
	}
	return new String(charArray);
    }
}
```

Output:

```
Original String: Hello, World!
Reversed String: !dlroW ,olleH
```