1. Design and implement an application that reads an arbitrary number of integers, each in the range from 0 to 50 inclusive, from the user, and then counts how many occurrences of each are entered. After all the input has been processed, print all the values (with the number of occurrences) that were entered one or more times.

Solution:

```java
import java.util.Scanner;
public class CountInts{
    public static void main (String[] args){
        int[] count = new int[51]; // new array indexed from 0 to 50 
        // initialized to contain all 0’s
        Scanner scan = new Scanner (System.in);
        System.out.print("Enter integers, ending with <CONTROL> D: ");
        while (scan.hasNext()){
            int n = scan.nextInt();
            if (n>=0 && n<=50)
                count[n]++;
        }
        System.out.println("\nHere are the counts of the integers" 
+ " entered: ");
        for (int i=0; i<=50; i++)
            if (count[i]>0)
                System.out.println(i + "\t" + count[i]);
    }
}
```