

Recursion Exercises

Instructions:

Use recursion to solve the following problems. You may not use loops at all. You may not use static nor instance variables. Using auxiliary methods is fine.

1. Write a recursive method that finds the minimum value in an array. The method's prototype is:

int minimum(int a[], int n)

2. Write a recursive method that prints the elements of an array in reverse order.

void reverse(int a[])

3. Write a recursive method that determines whether an array is a palindrome. The method's prototype is:

boolean isPalindrome(int a[])

4. Write a recursive method that prints an integer with commas in the correct places. For example, 12345 will be printed as 12,345. The method's prototype is:

void print(int n)

5. Write a recursive method that determines if the first **n** elements of an array are already in ascending sorted order. The method's prototype is:

boolean isSorted(int n, int[] a)

6. The following linked list definition will be used for the problems that follow:

```
public class LinkedList<T> {  
    private class Node {  
        private T data;  
        private Node next;  
        public Node(T data) {  
            this.data = data;  
            next = null;  
        }  
    }  
    private Node head;  
}
```

- a. Define a recursive method that computes the size of the list.
- b. Define a recursive method that prints the contents of the list in reverse order.