Follow Up Question

九章算法强化班 第7章

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Overview

1. Subarray sum 3 follow up
2. Continuous Subarray Sum 2 follow up
3. Wiggle Sort 2 follow up
4. Partition 3 follow up
5. Iterator 3 follow up

Subarray sum

Subarray sum

http://www.lintcode.com/en/problem/subarray-sum/

http://www.jiuzhang.com/solutions/subarray-sum/

Submatrix Sum

http://www.lintcode.com/en/problem/submatrix-sum/
http://www.jiuzhang.com/solutions/submatrix-sum/

Subarray Sum II

http://www.lintcode.com/en/problem/subarray-sum-ii/
http://www.jiuzhang.com/solutions/subarray-sum-ii/

循环连续子序列

Continuous Subarray Sum

www.lintcode.com/en/problem/continuous-subarray-sum/
www.lintcode.com/en/problem/maximum-subarray/
http://www.jiuzhang.com/solutions/continuous-subarray-sum/
{ -2, 11, -4, 13, -5, -2 }

Continuous Subarray Sum II

http://www.lintcode.com/en/problem/continuous-subarray-sum-ii/

http://www.jiuzhang.com/solutions/continuous-subarray-sum-ii/

{ -2, 11, -4, 13, -5, -2 }

Parition Follow Up

Quick select

http://www.lintcode.com/en/problem/kth-largest-element/
http://www.jiuzhang.com/solutions/kth-largest-element/

找世界第3富?

Kth Largest

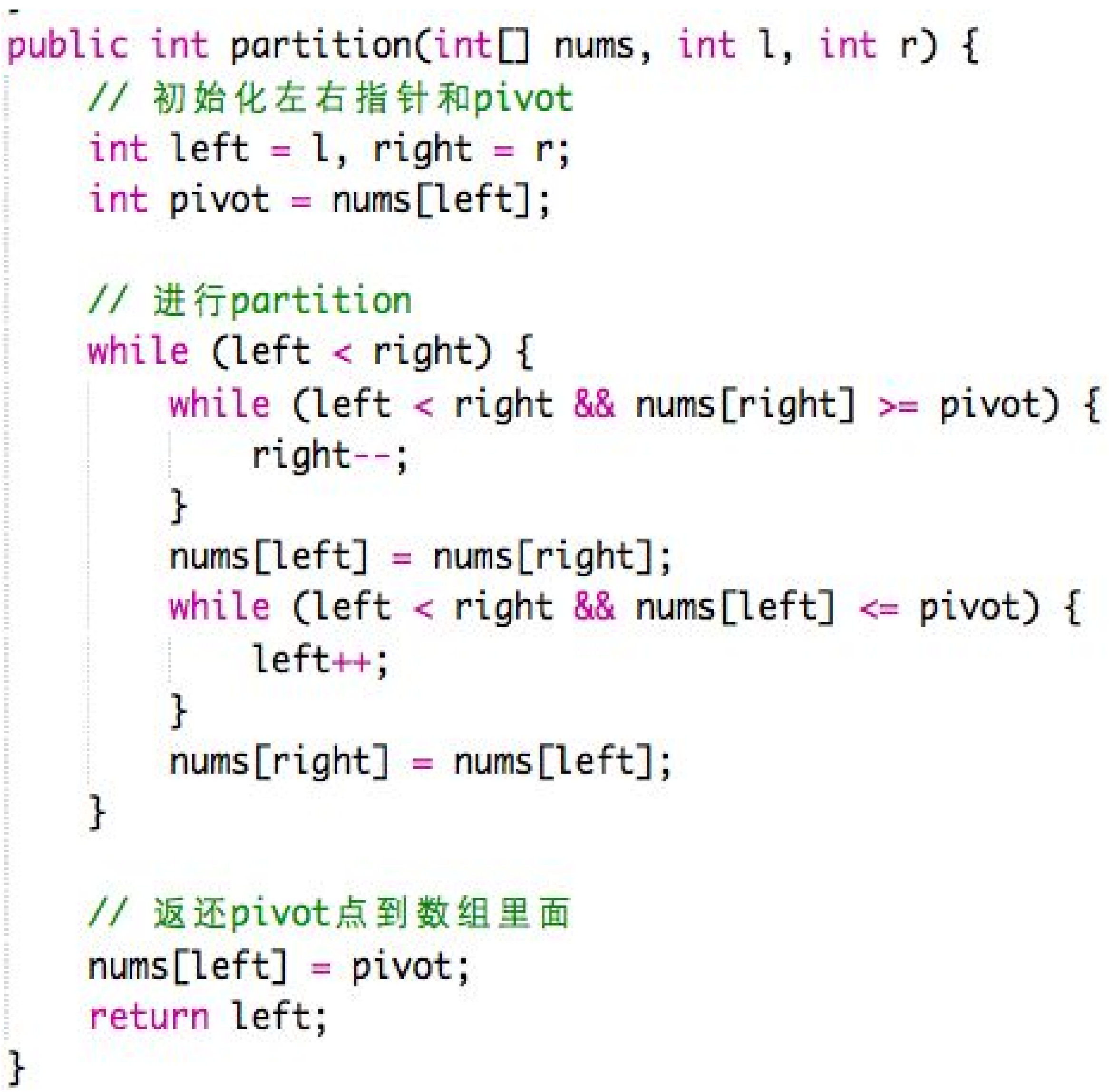
- PriorityQueue
- 时间复杂度O(nlogk)
- 更适合Topk

- QuickSelect
- 时间复杂度O(n)
- 更适合第k大

Partition 问题模板

- Partition 模板

- 问题？
- [5,5,5,3,5,5,5]



```java
public int partition(int[] nums, int l, int r) {
    // 初始化左右指针和pivot
    int left = l, right = r;
    int pivot = nums[left];

    // 进行partition
    while (left < right) {
        while (left < right && nums[right] >= pivot) {
            right--;
        }
        nums[left] = nums[right];
        while (left < right && nums[left] <= pivot) {
            left++;
        }
        nums[right] = nums[left];
    }

    // 返还pivot点到数组里面
    nums[left] = pivot;
    return left;
}
```

Wiggle Sort

http://www.lintcode.com/problem/wiggle-sort/

http://www.jiuzhang.com/solutions/wiggle-sort/

Wiggle Sort II

http://www.lintcode.com/problem/wiggle-sort-ii/

http://www.jiuzhang.com/solutions/wiggle-sort-ii/

Nuts & Bolts Problem

http://www.lintcode.com/en/problem/nuts-bolts-problem/

http://www.jiuzhang.com/solutions/nuts-bolts-problem/

Iterator Problem

Flatten List

http://www.lintcode.com/en/problem/flatten-list/

http://www.jiuzhang.com/solutions/flatten-list/

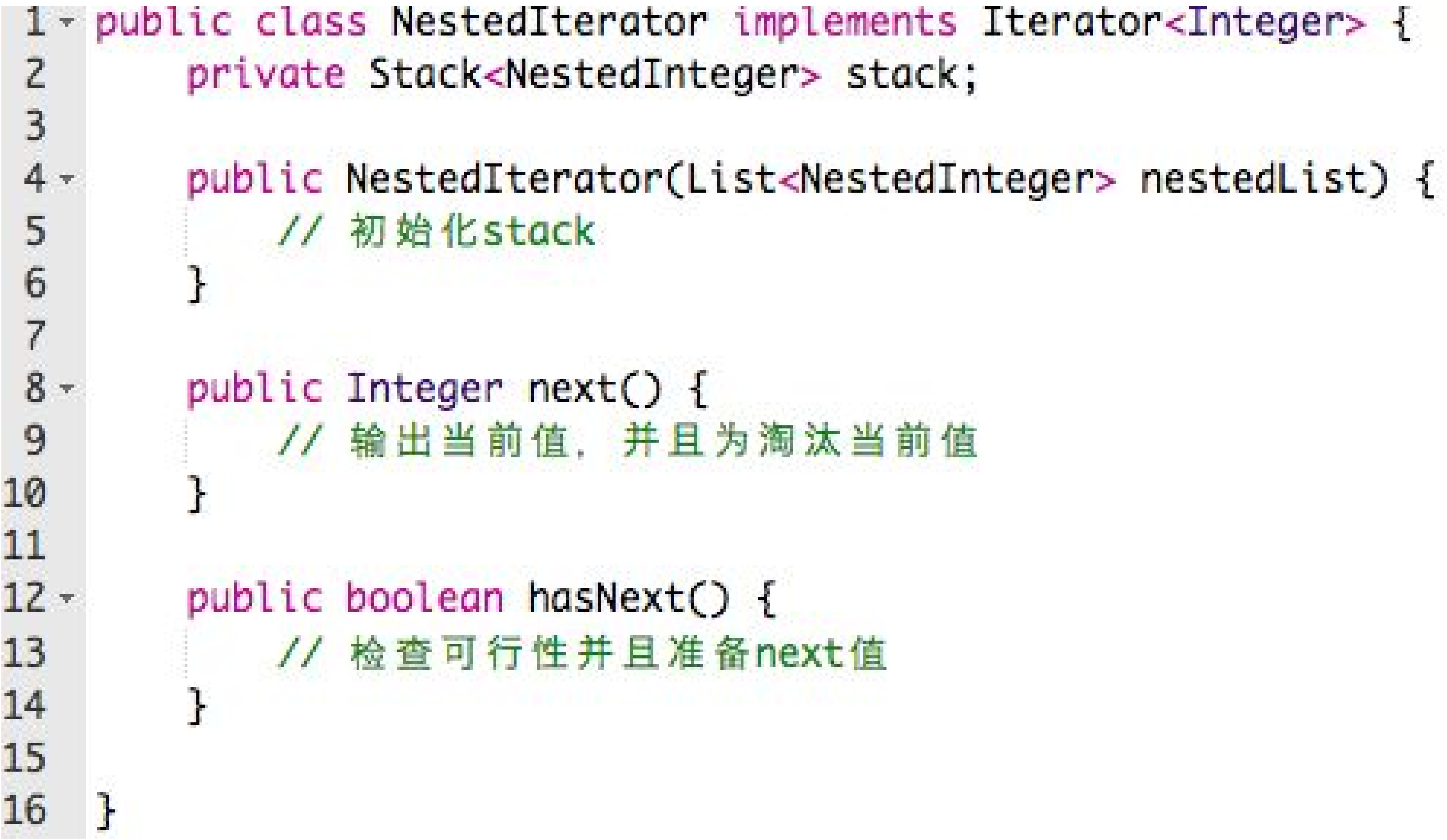
Flatten Nested List Iterator

http://www.lintcode.com/en/problem/flatten-nested-list-iterator/
http://www.jiuzhang.com/solutions/flatten-nested-list-iterator/
问：主程序应该在 hasNext 中还是 next 中实现？

Iterator

1. List 转 Stack
2. 主函数逻辑放在HasNext里面
3. Next只做一次pop处理

Iterator 题目思路模板



```java
public class NestedIterator implements Iterator<Integer> {
    private Stack<NestedInteger> stack;

    public NestedIterator(List<NestedInteger> nestedList) {
        // 初始化stack
    }

    public Integer next() {
        // 输出当前值，并且为淘汰当前值
    }

    public boolean hasNext() {
        // 检查可行性并且准备next值
    }

}
```

Flatten 2D Vector

http://www.lintcode.com/en/problem/flatten-2d-vector/

http://www.jiuzhang.com/solutions/flatten-2d-vector/

Binary Search Tree Iterator

http://www.lintcode.com/en/problem/binary-search-tree-iterator/
http://www.jiuzhang.com/solutions/binary-search-tree-iterator/

Follow Up 常见方式

- 一维转二维
    - 可以套相同的思路试一试
        - Find Peak Element I/II
        - Trapping Water I/II
        - Subarray Sum/Submatrix Sum
- 数组变成循环数组
    - 循环数组小技巧
        - Continuous Subarray Sum
- 题目条件加强
    - 可能题目的解题方法会变化
        - Wiggle Sort I/II
- 换马甲(变一个描述，本质不变)
    - 本质不变
        - Number of airplane on the Sky/ Meeting Room
        - BackPack Problem
- 描述完全不一样，但是方法相同
    - 这种题目得去分析
        - 前向型指针的题目
        - Quick Sort/ Bolt Nuts Problem

每日一鸡

每日一鸡

就要去捍卫它

...you gotta protect it.

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Thank You!!!