极客算法训练营leetcode习题链接整理

# 第1周: 数组、链表、栈、队列 + 前缀和，差分，双指针扫描

### 

## 本周作业

以下题目选 2 道提交即可

第一周作业表单：<https://jinshuju.net/f/HkrEHB>

* [加一](https://leetcode-cn.com/problems/plus-one/)（Easy）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 0 | 0 | 3 | 3 |

| 快手 | 美团 | Google | 腾讯 |
| --- | --- | --- | --- |
| 0 | 0 | 4 | 0 |

| 华为 | 百度 |
| --- | --- |
| 0 | 0 |

* [合并两个有序链表](https://leetcode-cn.com/problems/merge-two-sorted-lists/)（Easy）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 7 | 23 | 9 | 36 |

| 快手 | 美团 | Google | 腾讯 |
| --- | --- | --- | --- |
| 2 | 2 | 2 | 14 |

| 华为 | 百度 |
| --- | --- |
| 0 | 3 |

* [设计循环双端队列](https://leetcode-cn.com/problems/design-circular-deque/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 2 | 0 | 0 | 0 |

| 快手 | 美团 | Google | 腾讯 |
| --- | --- | --- | --- |
| 0 | 0 | 0 | 0 |

| 华为 | 百度 |
| --- | --- |
| 0 | 0 |

* [和为 K 的子数组](https://leetcode-cn.com/problems/subarray-sum-equals-k/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 76 | 10 | 15 | 11 |

| Bloomberg | Google | Apple | Tesla |
| --- | --- | --- | --- |
| 2 | 6 | 3 | 2 |

| LinkedIn |
| --- |
| 2 |

## **实战例题**

以下为课上实战例题

### 第 1 课

#### 数组

* [合并有序数组](https://leetcode-cn.com/problems/merge-sorted-array/)（Easy）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 33 | 19 | 11 | 6 |

| 快手 | 美团 | Google | 腾讯 |
| --- | --- | --- | --- |
| 5 | 5 | 3 | 0 |

| 华为 | 百度 |
| --- | --- |
| 3 | 3 |

* [删除有序数组中的重复项](https://leetcode-cn.com/problems/remove-duplicates-from-sorted-array/)（Easy）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 11 | 13 | 6 | 6 |

| 滴滴 | 美团 | Google | Apple |
| --- | --- | --- | --- |
| 2 | 2 | 2 | 4 |

* [移动零](https://leetcode-cn.com/problems/move-zeroes/)（Easy）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 19 | 9 | 8 | 7 |

| Bloomberg | Apple | Google |
| --- | --- | --- |
| 7 | 5 | 5 |

| eBay | Cisco | SAP（思爱普） |
| --- | --- | --- |
| 3 | 3 | 2 |

#### 链表

* [反转链表](https://leetcode-cn.com/problems/reverse-linked-list/)（Easy）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 4 | 42 | 9 | 13 |

| 滴滴 | 美团 | Google | 腾讯 |
| --- | --- | --- | --- |
| 7 | 7 | 6 | 14 |

| Apple | 百度 |
| --- | --- |
| 7 | 4 |

* [K 个一组翻转链表](https://leetcode-cn.com/problems/reverse-nodes-in-k-group/)（Hard）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 5 | 40 | 13 | 15 |

| 快手 | 美团 | Google | 腾讯 |
| --- | --- | --- | --- |
| 2 | 2 | 3 | 6 |

| Apple | eBay |
| --- | --- |
| 3 | 3 |

* [邻值查找](https://www.acwing.com/problem/content/description/138/)（Medium）（ACWing）
* [环形链表](https://leetcode-cn.com/problems/linked-list-cycle/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 4 | 11 | 7 | 7 |

| Bloomberg | 百度 | 腾讯 | Apple |
| --- | --- | --- | --- |
| 3 | 3 | 3 | 2 |

| Shopee |
| --- |
| 2 |

* [环形链表 II](https://leetcode-cn.com/problems/linked-list-cycle-ii/) （Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 2 | 14 | 2 | 2 |

| 快手 | 美团 | Google | 腾讯 |
| --- | --- | --- | --- |
| 0 | 2 | 0 | 0 |

| 华为 | 百度 |
| --- | --- |
| 0 | 0 |

#### 栈、队列

* [有效的括号](https://leetcode-cn.com/problems/valid-parentheses/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 12 | 24 | 15 | 25 |

| Apple | Google | Bloomberg | 华为 |
| --- | --- | --- | --- |
| 10 | 7 | 9 | 8 |

| LinkedIn | Shopee |
| --- | --- |
| 13 | 7 |

* [最小栈](https://leetcode-cn.com/problems/min-stack/)（Medium）半年内出题频次：

| Bloomberg | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 12 | 10 | 12 | 15 |

| 快手 | 美团 | Google | Apple |
| --- | --- | --- | --- |
| 0 | 0 | 0 | 3 |

| 高盛集团 | Coupang |
| --- | --- |
| 2 | 2 |

* [逆波兰表达式求值](https://leetcode-cn.com/problems/evaluate-reverse-polish-notation/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 3 | 3 | 3 | 8 |

| LinkedIn | Google |
| --- | --- |
| 6 | 6 |

* [基本计算器 (选做)](https://leetcode-cn.com/problems/basic-calculator/) （Hard）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 8 | 15 | 12 | 7 |

| Roblox | Shopee | Google | Apple |
| --- | --- | --- | --- |
| 6 | 3 | 4 | 2 |

| Wish |
| --- |
| 2 |

### 第 2 课

#### 前缀和、差分

* [统计「优美子数组」](https://leetcode-cn.com/problems/count-number-of-nice-subarrays/)（Medium）半年内出题频次：

| Amazon | Citadel |
| --- | --- |
| 2 | 2 |

* [二维区域和检索 - 矩阵不可变](https://leetcode-cn.com/problems/range-sum-query-2d-immutable/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Bloomberg |
| --- | --- | --- | --- |
| 8 | 4 | 3 | 2 |

| Google |
| --- |
| 6 |

* [航班预订统计](https://leetcode-cn.com/problems/corporate-flight-bookings/)（Medium）半年内出题频次：

| 华为 |
| --- |
| 2 |

* [最大子序和](https://leetcode-cn.com/problems/maximum-subarray/)（Easy）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 7 | 21 | 16 | 19 |

| Google | Bloomberg | 华为 | eBay |
| --- | --- | --- | --- |
| 6 | 5 | 3 | 4 |

| Apple | LinkedIn |
| --- | --- |
| 12 | 11 |

#### 双指针扫描、滑动窗口

* [两数之和](https://leetcode-cn.com/problems/two-sum/)（Easy）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 33 | 91 | 40 | 123 |

| Apple | Bloomberg | Google | 腾讯 |
| --- | --- | --- | --- |
| 33 | 17 | 51 | 14 |

| 阿里巴巴 | Cisco |
| --- | --- |
| 6 | 5 |

* [两数之和 II - 输入有序数组](https://leetcode-cn.com/problems/two-sum-ii-input-array-is-sorted/)（Easy）半年内出题频次：

| 字节跳动 | 微软 | Amazon | Bloomberg |
| --- | --- | --- | --- |
| 5 | 2 | 5 | 2 |

| Apple |
| --- |
| 2 |

* [三数之和](https://leetcode-cn.com/problems/3sum/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 19 | 34 | 13 | 34 |

| Apple | 美团 | Google | 腾讯 |
| --- | --- | --- | --- |
| 10 | 5 | 5 | 9 |

| Bloomberg | Cisco |
| --- | --- |
| 5 | 4 |

* [盛最多水的容器](https://leetcode-cn.com/problems/container-with-most-water/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 15 | 15 | 8 | 12 |

| Apple | Google | 高盛集团 | 华为 |
| --- | --- | --- | --- |
| 3 | 8 | 4 | 2 |

| 百度 |
| --- |
| 2 |

#### 单调栈、单调队列

* [柱状图中最大的矩形](https://leetcode-cn.com/problems/largest-rectangle-in-histogram/)（Hard）半年内出题频次：

| 字节跳动 | 微软 | Amazon | eBay |
| --- | --- | --- | --- |
| 7 | 5 | 9 | 2 |

| Google | 华为 |
| --- | --- |
| 3 | 2 |

* [滑动窗口最大值](https://leetcode-cn.com/problems/sliding-window-maximum/)（Hard）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 6 | 6 | 5 | 27 |

| 高盛集团 | Google | 阿里巴巴 | Bloomberg |
| --- | --- | --- | --- |
| 2 | 8 | 2 | 2 |

| Twitter |
| --- |
| 2 |

* [接雨水](https://leetcode-cn.com/problems/trapping-rain-water/)（Hard）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 35 | 34 | 9 | 46 |

| 高盛集团 | 美团 | Google | Bloomberg |
| --- | --- | --- | --- |
| 34 | 5 | 10 | 11 |

| 网易 | Apple |
| --- | --- |
| 7 | 5 |

# 第2周： 哈希表、集合、映射+递归、分治

## 本周作业

以下题目选 2 道提交即可

第二周作业表单：<https://jinshuju.net/f/Mqj5ll>

* [LRU 缓存机制](https://leetcode-cn.com/problems/lru-cache/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 28 | 33 | 56 | 92 |

| Google | Apple | 阿里巴巴 | Bloomberg |
| --- | --- | --- | --- |
| 10 | 17 | 7 | 11 |

| 腾讯 | eBay |
| --- | --- |
| 6 | 10 |

* [子域名访问计数](https://leetcode-cn.com/problems/subdomain-visit-count/)（Easy）半年内出题频次：

| Wayfair | Roblox |
| --- | --- |
| 9 | 2 |

* [数组的度](https://leetcode-cn.com/problems/degree-of-an-array/)（Easy）半年内出题频次：

| 字节跳动 | Bloomberg | 英伟达 |
| --- | --- | --- |
| 3 | 2 | 2 |

* [元素和为目标值的子矩阵数量](https://leetcode-cn.com/problems/number-of-submatrices-that-sum-to-target/)（Hard）半年内出题频次：

| Facebook | Google |
| --- | --- |
| 3 | 2 |

* [合并K 个升序链表](https://leetcode-cn.com/problems/merge-k-sorted-lists/)（Hard） (要求：用分治实现，不要用堆) 半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 22 | 26 | 16 | 44 |

| Google | Apple | 滴滴 | Bloomberg |
| --- | --- | --- | --- |
| 5 | 8 | 3 | 4 |

| 快手 | 百度 |
| --- | --- |
| 3 | 2 |

## **实战例题**

以下为课上实战例题

### 第 3 课

#### 无序集合、映射

* [两数之和](https://leetcode-cn.com/problems/two-sum/description/)（Easy）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 33 | 91 | 40 | 124 |

| Google | Apple | 阿里巴巴 | Bloomberg |
| --- | --- | --- | --- |
| 51 | 33 | 6 | 17 |

| 腾讯 | Cisco |
| --- | --- |
| 14 | 5 |

* [模拟行走机器人](https://leetcode-cn.com/problems/walking-robot-simulation/)（Easy）半年内出题频次：

| Amazon |
| --- |
| 2 |

* [字母异位词分组](https://leetcode-cn.com/problems/group-anagrams/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 6 | 5 | 23 | 24 |

| Google | Apple | 高盛集团 | eBay |
| --- | --- | --- | --- |
| 3 | 6 | 14 | 10 |

| PayPal |
| --- |
| 4 |

* [串联所有单词的子串](https://leetcode-cn.com/problems/substring-with-concatenation-of-all-words/)（Hard）半年内出题频次：

| 字节跳动 | Amazon |
| --- | --- |
| 2 | 2 |

#### LRU

* [LRU 缓存机制](https://leetcode-cn.com/problems/lru-cache/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 28 | 33 | 56 | 92 |

| Google | Apple | 阿里巴巴 | Bloomberg |
| --- | --- | --- | --- |
| 10 | 17 | 7 | 11 |

| 腾讯 | eBay |
| --- | --- |
| 6 | 10 |

### 第 4 课

#### 递归

* [子集](https://leetcode-cn.com/problems/subsets/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 13 | 14 | 3 | 5 |

| Google | 高盛集团 | 美团 | Bloomberg |
| --- | --- | --- | --- |
| 5 | 2 | 2 | 5 |

| eBay |
| --- |
| 2 |

* [组合](https://leetcode-cn.com/problems/combinations/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | Bloomberg | Amazon |
| --- | --- | --- | --- |
| 4 | 7 | 2 | 4 |

| Apple |
| --- |
| 2 |

* [全排列](https://leetcode-cn.com/problems/permutations/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 9 | 37 | 5 | 9 |

| 华为 | Apple | 滴滴 | LinkedIn |
| --- | --- | --- | --- |
| 12 | 6 | 6 | 6 |

| 百度 | eBay |
| --- | --- |
| 4 | 5 |

#### 树

* [翻转二叉树](https://leetcode-cn.com/problems/invert-binary-tree/description/)（Easy）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 5 | 5 | 3 | 8 |

| Bloomberg | 高盛集团 | Google |
| --- | --- | --- |
| 3 | 2 | 7 |

* [验证二叉搜索树](https://leetcode-cn.com/problems/validate-binary-search-tree/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 16 | 16 | 13 | 19 |

| Bloomberg | Apple | Google |
| --- | --- | --- |
| 15 | 3 | 2 |

* [二叉树的最大深度](https://leetcode-cn.com/problems/maximum-depth-of-binary-tree/)（Easy）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 4 | 12 | 4 | 3 |

| Google | Apple | 腾讯 | LinkedIn |
| --- | --- | --- | --- |
| 3 | 2 | 2 | 14 |

| 快手 |
| --- |
| 2 |

* [二叉树的最小深度](https://leetcode-cn.com/problems/minimum-depth-of-binary-tree/)（Easy）半年内出题频次：

| Facebook | 字节跳动 | Amazon |
| --- | --- | --- |
| 2 | 2 | 3 |

#### 分治

* [Pow(x, n)](https://leetcode-cn.com/problems/powx-n/) （Medium）半年内出题频次：

| Facebook | Google | 微软 | Amazon |
| --- | --- | --- | --- |
| 22 | 5 | 6 | 9 |

| eBay | Apple | 阿里巴巴 | LinkedIn |
| --- | --- | --- | --- |
| 3 | 2 | 2 | 7 |

| Bloomberg | Cisco |
| --- | --- |
| 2 | 2 |

* [括号生成](https://leetcode-cn.com/problems/generate-parentheses/)（Medium）半年内出题频次：

| Facebook | Google | 微软 | Amazon |
| --- | --- | --- | --- |
| 12 | 3 | 14 | 12 |

| 字节跳动 | Apple | 腾讯 | 华为 |
| --- | --- | --- | --- |
| 26 | 4 | 4 | 3 |

| 英伟达 | Shopee |
| --- | --- |
| 2 | 2 |

# 第3周：树与图 + BFS/DFS

## 本周作业

以下题目选 2 道提交即可

第三周作业表单：<https://jinshuju.net/f/ZCPo7d>

* [从中序与后序遍历序列构造二叉树](https://leetcode-cn.com/problems/construct-binary-tree-from-inorder-and-postorder-traversal/)（Medium）半年内出题频次：

| 腾讯 | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 4 | 6 | 2 | 2 |

| Google | Shopee |
| --- | --- |
| 2 | 2 |

* [课程表 II](https://leetcode-cn.com/problems/course-schedule-ii/) （Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 9 | 6 | 14 | 26 |

| Google | Apple | DoorDash | Bloomberg |
| --- | --- | --- | --- |
| 9 | 3 | 11 | 2 |

* [被围绕的区域](https://leetcode-cn.com/problems/surrounded-regions/)（Medium）半年内出题频次：

| 百度 | 字节跳动 | 华为 | Amazon |
| --- | --- | --- | --- |
| 6 | 2 | 2 | 4 |

| Google |
| --- |
| 7 |

## **实战例题**

以下为课上实战例题

### 第 5 课

#### 树、二叉树、树的遍历

* [二叉树的中序遍历](https://leetcode-cn.com/problems/binary-tree-inorder-traversal/)（Easy）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 3 | 4 | 4 | 2 |

| Google | 高盛集团 | Bloomberg |
| --- | --- | --- |
| 6 | 2 | 3 |

* [N 叉树的前序遍历](https://leetcode-cn.com/problems/n-ary-tree-preorder-traversal/description/)（Easy）半年内出题频次：

| 字节跳动 |
| --- |
| 3 |

* [N 叉树的层序遍历](https://leetcode-cn.com/problems/n-ary-tree-level-order-traversal/)（Medium）半年内出题频次：

| Amazon |
| --- |
| 2 |

* [二叉树的序列化与反序列化](https://leetcode-cn.com/problems/serialize-and-deserialize-binary-tree/)（Hard）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 19 | 11 | 18 | 13 |

| Google | Apple | LinkeIn | Bloomberg |
| --- | --- | --- | --- |
| 4 | 2 | 11 | 2 |

| 高盛集团 |
| --- |
| 2 |

* [从前序与中序遍历序列构造二叉树](https://leetcode-cn.com/problems/construct-binary-tree-from-preorder-and-inorder-traversal/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 3 | 24 | 7 | 10 |

| Google | 百度 | 华为 | Bloomberg |
| --- | --- | --- | --- |
| 5 | 2 | 2 | 3 |

| 腾讯 | 滴滴 |
| --- | --- |
| 4 | 2 |

#### 树的直径、最近公共祖先、树的变形

* [树的直径](https://leetcode-cn.com/problems/tree-diameter/)（Medium）（此题为 LeetCode 会员题选做）半年内出题频次：

| 微软 |
| --- |
| 2 |

* [二叉树的最近公共祖先](https://leetcode-cn.com/problems/lowest-common-ancestor-of-a-binary-tree/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 40 | 20 | 16 | 16 |

| Google | 腾讯 | Apple | LinkedIn |
| --- | --- | --- | --- |
| 4 | 3 | 3 | 3 |

| Riot Games |
| --- |
| 2 |

#### 图、图的遍历

* [冗余连接](https://leetcode-cn.com/problems/redundant-connection/description/)（Medium）半年内出题频次：

| Amazon |
| --- |
| 2 |

* [课程表](https://leetcode-cn.com/problems/course-schedule/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 9 | 4 | 13 | 23 |

| Google | eBay | DoorDash |
| --- | --- | --- |
| 6 | 2 | 2 |

### 第 6 课

#### DFS、BFS

* [电话号码的字母组合](https://leetcode-cn.com/problems/letter-combinations-of-a-phone-number/)（Medium）半年内出题频次：

| Facebook | eBay | 微软 | Amazon |
| --- | --- | --- | --- |
| 9 | 5 | 15 | 27 |

| Google | Morgan Stanley | 华为 | Cisco |
| --- | --- | --- | --- |
| 3 | 3 | 3 | 3 |

| Tesla | Apple |
| --- | --- |
| 3 | 4 |

* [N 皇后](https://leetcode-cn.com/problems/n-queens/)（Hard）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Google |
| --- | --- | --- | --- |
| 9 | 5 | 3 | 2 |

* [岛屿数量](https://leetcode-cn.com/problems/number-of-islands/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 17 | 35 | 45 | 82 |

| Google | Bloomberg | Apple | LinkedIn |
| --- | --- | --- | --- |
| 17 | 27 | 17 | 13 |

| 腾讯 | DoorDash |
| --- | --- |
| 4 | 6 |

* [最小基因变化](https://leetcode-cn.com/problems/minimum-genetic-mutation/)（Medium） 2 年内出过此题：

| Facebook | Twitter | 微软 | Amazon |
| --- | --- | --- | --- |
| Google | 百度 | Adobe | Cisco |
| Dropbox | 腾讯 | - | - |

* [矩阵中的最长递增路径](https://leetcode-cn.com/problems/longest-increasing-path-in-a-matrix/)（Hard）半年内出题频次：

| Facebook | 字节跳动 | DoorDash | Amazon |
| --- | --- | --- | --- |
| 12 | 6 | 3 | 5 |

| Google | Bloomberg | Apple | 猿辅导 |
| --- | --- | --- | --- |
| 13 | 3 | 3 | 3 |

# 第4周：二叉堆、二叉搜索树 + 二分查找

## 本周作业

以下题目选 2 道提交即可

第四周作业表单：<https://jinshuju.net/f/ra7VXR>

* [设计推特](https://leetcode-cn.com/problems/design-twitter/)（Medium）半年内出题频次：

| 微软 | Amazon |
| --- | --- |
| 4 | 6 |

* [数据流的中位数（选做）](https://leetcode-cn.com/problems/find-median-from-data-stream/)（Hard）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 10 | 10 | 16 | 41 |

| Google | Apple | Twitter | 高盛集团 |
| --- | --- | --- | --- |
| 6 | 6 | 6 | 6 |

| Bloomberg | eBay |
| --- | --- |
| 4 | 4 |

* [寻找旋转排序数组中的最小值 II](https://leetcode-cn.com/problems/find-minimum-in-rotated-sorted-array-ii/) （Hard）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 2 | 3 | 2 | 5 |

| Google |
| --- |
| 3 |

## **实战例题**

以下为课上实战例题

### 第 7 课

#### 二叉堆

* [合并 K 个升序链表](https://leetcode-cn.com/problems/merge-k-sorted-lists/)（Hard）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 22 | 26 | 16 | 44 |

| Google | Apple | 百度 | 滴滴 |
| --- | --- | --- | --- |
| 5 | 8 | 2 | 3 |

| Bloomberg | 快手 |
| --- | --- |
| 4 | 3 |

* [滑动窗口最大值](https://leetcode-cn.com/problems/sliding-window-maximum/)（Hard）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 6 | 7 | 5 | 28 |

| Google | Twitter | 高盛集团 | Bloomberg |
| --- | --- | --- | --- |
| 8 | 2 | 2 | 2 |

| 阿里巴巴 |
| --- |
| 2 |

#### 二叉搜索树

* [二叉搜索树中的插入操作](https://leetcode-cn.com/problems/insert-into-a-binary-search-tree/)（Medium）半年内出题频次：

| Amazon |
| --- |
| 3 |

* [后继者](https://leetcode-cn.com/problems/successor-lcci/)（Medium）半年内出题频次：

| 字节跳动 |
| --- |
| 2 |

* [删除二叉搜索树中的节点](https://leetcode-cn.com/problems/delete-node-in-a-bst/)（Medium）半年内出题频次：

| 字节跳动 | 微软 | Amazon | Bloomberg |
| --- | --- | --- | --- |
| 3 | 4 | 2 | 3 |

| eBay | LinkedIn |
| --- | --- |
| 2 | 2 |

* [把二叉搜索树转换为累加树](https://leetcode-cn.com/problems/convert-bst-to-greater-tree/)（Medium）半年内出题频次：

| 字节跳动 | Facebook | 微软 |
| --- | --- | --- |
| 2 | 2 | 2 |

### 第 8 课

#### 二分查找

* [二分查找](https://leetcode-cn.com/problems/binary-search/)（Easy）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 2 | 8 | 3 | 4 |

| Google | Apple |
| --- | --- |
| 2 | 2 |

* [在排序数组中查找元素的第一个和最后一个位置](https://leetcode-cn.com/problems/find-first-and-last-position-of-element-in-sorted-array/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 29 | 11 | 4 | 4 |

| Google | Apple | LinkedIn | Twitter |
| --- | --- | --- | --- |
| 2 | 2 | 6 | 2 |

| Bloomberg | 华为 |
| --- | --- |
| 3 | 2 |

* [x 的平方根](https://leetcode-cn.com/problems/sqrtx/)（Easy）半年内出题频次：

| Bloomberg | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 4 | 20 | 5 | 4 |

| Google | Apple | LinkedIn | 美团 |
| --- | --- | --- | --- |
| 2 | 2 | 5 | 3 |

* [搜索二维矩阵](https://leetcode-cn.com/problems/search-a-2d-matrix/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 4 | 8 | 5 | 7 |

| Google | Apple | Bloomberg | 快手 |
| --- | --- | --- | --- |
| 3 | 3 | 2 | 2 |

* [寻找旋转排序数组中的最小值](https://leetcode-cn.com/problems/find-minimum-in-rotated-sorted-array/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 5 | 4 | 8 | 9 |

| 高盛集团 | Apple |
| --- | --- |
| 4 | 2 |

#### 三分查找

* [寻找峰值](https://leetcode-cn.com/problems/find-peak-element/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 17 | 4 | 8 | 7 |

| Google | Apple | Bloomberg |
| --- | --- | --- |
| 6 | 3 | 2 |

* [猜数字大小](https://leetcode-cn.com/problems/guess-number-higher-or-lower/)（Easy）半年内出题频次：

| Google | Apple |
| --- | --- |
| 3 | 2 |

* [分割数组的最大值](https://leetcode-cn.com/problems/split-array-largest-sum/)（Hard）半年内出题频次：

| Google | 字节跳动 | 华为 | Amazon |
| --- | --- | --- | --- |
| 8 | 3 | 4 | 5 |

| 美团 |
| --- |
| 5 |

* [制作 m 束花所需的最少天数](https://leetcode-cn.com/problems/minimum-number-of-days-to-make-m-bouquets/)（Medium） 2 年内出过此题：

| Facebook | VMware | Bloomberg | Salesforce |
| --- | --- | --- | --- |
| Google | 字节跳动 | Adobe | Apple |

# 第5周：排序 + 贪心

## 本周作业

以下题目选 2 道提交即可

第五周作业表单：<https://jinshuju.net/f/Orzqo6>

* [在 D 天内送达包裹的能力](https://leetcode-cn.com/problems/capacity-to-ship-packages-within-d-days/)（Medium）半年内出题频次：

| 字节跳动 | 微软 | Amazon | Google |
| --- | --- | --- | --- |
| 7 | 2 | 10 | 3 |

* [在线选举](https://leetcode-cn.com/problems/online-election/)（Medium）半年内出题频次：

| Google |
| --- |
| 2 |

* [爱吃香蕉的珂珂](https://leetcode-cn.com/problems/koko-eating-bananas/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | Airbnb | Amazon |
| --- | --- | --- | --- |
| 5 | 2 | 2 | 3 |

| Google | 华为 |
| --- | --- |
| 10 | 2 |

* [区间和的个数（选做）](https://leetcode-cn.com/problems/count-of-range-sum/)（Hard）半年内出题频次：

| Cisco |
| --- |
| 33 |

## **实战例题**

以下为课上实战例题

### 第 9 课

#### 排序

* [排序数组](https://leetcode-cn.com/problems/sort-an-array/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | Amazon | 腾讯 |
| --- | --- | --- | --- |
| 2 | 12 | 6 | 2 |

| 滴滴 |
| --- |
| 2 |

* [数组的相对排序](https://leetcode-cn.com/problems/relative-sort-array/)（Easy）半年内出题频次：

| Amazon |
| --- |
| 3 |

* [合并区间](https://leetcode-cn.com/problems/merge-intervals/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 56 | 25 | 19 | 36 |

| Apple | Bloomberg | Google | eBay |
| --- | --- | --- | --- |
| 18 | 16 | 14 | 5 |

| Cisco | Twitter |
| --- | --- |
| 4 | 3 |

* [数组中的第 K 个最大元素](https://leetcode-cn.com/problems/kth-largest-element-in-an-array/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 55 | 30 | 9 | 25 |

| 高盛集团 | LinkedIn | Google | 腾讯 |
| --- | --- | --- | --- |
| 7 | 6 | 7 | 10 |

| Shopee | Apple |
| --- | --- |
| 6 | 5 |

* [货仓选址](https://www.acwing.com/problem/content/description/106/)（Easy）（ACWing）
* [翻转对](https://leetcode-cn.com/problems/reverse-pairs/)（Hard）半年内出题频次：

| Amazon | Google | Bloomberg |
| --- | --- | --- |
| 8 | 3 | 2 |

### 第 10 课

#### 贪心

* [零钱兑换](https://leetcode-cn.com/problems/coin-change/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 4 | 11 | 14 | 12 |

| 高盛集团 | 百度 | Google | 腾讯 |
| --- | --- | --- | --- |
| 4 | 2 | 6 | 8 |

| Bloomberg | Apple |
| --- | --- |
| 6 | 4 |

* [柠檬水找零](https://leetcode-cn.com/problems/lemonade-change/description/)（Easy）半年内出题频次：

| 华为 |
| --- |
| 4 |

* [分发饼干](https://leetcode-cn.com/problems/assign-cookies/description/)（Easy）半年内出题频次：

| 字节跳动 |
| --- |
| 3 |

* [买卖股票的最佳时机 II](https://leetcode-cn.com/problems/best-time-to-buy-and-sell-stock-ii/) （Easy）半年内出题频次：

| 字节跳动 | Amazon | 高盛集团 | Apple |
| --- | --- | --- | --- |
| 9 | 16 | 2 | 4 |

* [跳跃游戏 II](https://leetcode-cn.com/problems/jump-game-ii/) （Medium）半年内出题频次：

| Facebook | 字节跳动 | 华为 | Amazon |
| --- | --- | --- | --- |
| 2 | 10 | 86 | 16 |

| 阿里巴巴 | 百度 | Apple |
| --- | --- | --- |
| 3 | 2 | 4 |

* [完成所有任务的最少初始能量](https://leetcode-cn.com/problems/minimum-initial-energy-to-finish-tasks/)（Hard）半年内出题频次：

| eBay |
| --- |
| 2 |

# 第6周： 动态规划(1) and (2)

## 本周作业

以下题目选 2 道提交即可

第六周作业表单：<https://jinshuju.net/f/vJu5td>

* [爬楼梯](https://leetcode-cn.com/problems/climbing-stairs/description/)（Easy）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 3 | 27 | 6 | 11 |

| 华为 | 百度 | Google | 腾讯 |
| --- | --- | --- | --- |
| 3 | 3 | 7 | 7 |

| eBay | Apple |
| --- | --- |
| 3 | 5 |

* [三角形最小路径和](https://leetcode-cn.com/problems/triangle/description/)（Medium）半年内出题频次：

| Google | Amazon |
| --- | --- |
| 3 | 6 |

* [最长递增子序列的个数](https://leetcode-cn.com/problems/number-of-longest-increasing-subsequence/)（Medium）半年内出题频次：

| 字节跳动 | 微软 |
| --- | --- |
| 2 | 2 |

* [完全平方数](https://leetcode-cn.com/problems/perfect-squares/)（Medium）

要求：完全平方数看作物品，体积为 n，价值为 1，用背包 DP 的思想解题

半年内出题频次：

| Facebook | 字节跳动 | Amazon |
| --- | --- | --- |
| 3 | 5 | 4 |

| eBay | Google |
| --- | --- |
| 2 | 2 |

* [跳跃游戏](https://leetcode-cn.com/problems/jump-game/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 3 | 14 | 3 | 12 |

| 华为 | 百度 | Apple | CVTE 视源股份 |
| --- | --- | --- | --- |
| 6 | 2 | 3 | 2 |

* [跳跃游戏 II](https://leetcode-cn.com/problems/jump-game-ii/) （Medium）

要求：用动态规划解题，并与之前的贪心解法做对比

半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 2 | 9 | 0 | 17 |

| 华为 | 百度 | Apple |
| --- | --- | --- |
| 86 | 2 | 4 |

## **实战例题**

以下为课上实战例题

### 第 11 课

#### 动态规划（一）

* [零钱兑换](https://leetcode-cn.com/problems/coin-change/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 4 | 11 | 15 | 13 |

| 蔚来 | 百度 | Google | 腾讯 |
| --- | --- | --- | --- |
| 3 | 2 | 6 | 7 |

| Bloomberg | Apple |
| --- | --- |
| 6 | 4 |

* [不同路径 II](https://leetcode-cn.com/problems/unique-paths-ii/) （Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 4 | 13 | 4 | 7 |

| 华为 | Bloomberg | Google |
| --- | --- | --- |
| 2 | 2 | 4 |

* [最长公共子序列](https://leetcode-cn.com/problems/longest-common-subsequence/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 美团 | Amazon |
| --- | --- | --- | --- |
| 2 | 14 | 4 | 5 |

| Google | 腾讯 | 百度 |
| --- | --- | --- |
| 5 | 5 | 3 |

* [最长递增子序列](https://leetcode-cn.com/problems/longest-increasing-subsequence/)（Medium）半年内出题频次：

| 华为 | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 4 | 20 | 7 | 6 |

| Twitter | 百度 | Google | 腾讯 |
| --- | --- | --- | --- |
| 3 | 4 | 7 | 4 |

| Bloomberg | Apple |
| --- | --- |
| 3 | 4 |

* [最大子序和](https://leetcode-cn.com/problems/maximum-subarray/)（Easy）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 7 | 20 | 16 | 19 |

| LinkedIn | Bloomberg | Google | 腾讯 |
| --- | --- | --- | --- |
| 13 | 4 | 6 | 2 |

| eBay | Apple |
| --- | --- |
| 4 | 12 |

* [乘积最大子数组](https://leetcode-cn.com/problems/maximum-product-subarray/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 5 | 10 | 2 | 8 |

| 美团 | Shopee | Google | LinkedIn |
| --- | --- | --- | --- |
| 2 | 2 | 6 | 12 |

| Apple |
| --- |
| 3 |

### 第 12 课

#### 动态规划（二）

##### 买卖股票系列问题

* [买卖股票的最佳时机](https://leetcode-cn.com/problems/best-time-to-buy-and-sell-stock/)（Easy）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 14 | 24 | 17 | 36 |

| Bloomberg | SAP（思爱普） | Google | 腾讯 |
| --- | --- | --- | --- |
| 6 | 3 | 12 | 3 |

| eBay | Apple |
| --- | --- |
| 5 | 11 |

* [买卖股票的最佳时机 II](https://leetcode-cn.com/problems/best-time-to-buy-and-sell-stock-ii/) （Easy）半年内出题频次：

| Apple | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 4 | 9 | 2 | 16 |

* [买卖股票的最佳时机 III](https://leetcode-cn.com/problems/best-time-to-buy-and-sell-stock-iii/) （Easy）半年内出题频次：

| Google | 字节跳动 | 富途证券 | Amazon |
| --- | --- | --- | --- |
| 2 | 4 | 3 | 7 |

* [买卖股票的最佳时机 IV](https://leetcode-cn.com/problems/best-time-to-buy-and-sell-stock-iv/) （Hard）半年内出题频次：

| 百度 | 字节跳动 | 富途证券 | Amazon |
| --- | --- | --- | --- |
| 2 | 3 | 2 | 8 |

* [买卖股票的最佳时机含手续费](https://leetcode-cn.com/problems/best-time-to-buy-and-sell-stock-with-transaction-fee/)（Medium）半年内出题频次：

| Facebook | Bloomberg |
| --- | --- |
| 2 | 2 |

* [最佳买卖股票时机含冷冻期](https://leetcode-cn.com/problems/best-time-to-buy-and-sell-stock-with-cooldown/)（Medium）半年内出题频次：

| 字节跳动 | Amazon |
| --- | --- |
| 5 | 2 |

##### 线性 DP 问题

* [打家劫舍](https://leetcode-cn.com/problems/house-robber/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 3 | 32 | 13 | 10 |

| Cisco | Bloomberg | Google | 腾讯 |
| --- | --- | --- | --- |
| 5 | 2 | 7 | 3 |

| eBay |
| --- |
| 3 |

* [打家劫舍 II- 环形 DP](https://leetcode-cn.com/problems/house-robber-ii/) （Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 4 | 10 | 3 | 4 |

| eBay | 腾讯 |
| --- | --- |
| 5 | 5 |

* [编辑距离（重点题）](https://leetcode-cn.com/problems/edit-distance/)（Hard）半年内出题频次：

| 阿里巴巴 | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 2 | 19 | 12 | 11 |

| 网易 | 携程集团 | Google | 腾讯 |
| --- | --- | --- | --- |
| 2 | 2 | 4 | 3 |

| 小米 | Apple |
| --- | --- |
| 2 | 3 |

##### 背包问题

* [分割等和子集](https://leetcode-cn.com/problems/partition-equal-subset-sum/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Apple |
| --- | --- | --- | --- |
| 5 | 4 | 2 | 2 |

| Bloomber | Google |
| --- | --- |
| 2 | 2 |

* [零钱兑换 II](https://leetcode-cn.com/problems/coin-change-2/) （Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 3 | 6 | 5 | 2 |

| 华为 | Bloomberg | 蔚来 | Apple |
| --- | --- | --- | --- |
| 3 | 2 | 2 | 4 |

# 第7周: 动态规划(3) + 字典树，并查集

## 本周作业

以下题目选 2 道提交即可

第七周作业表单：<https://jinshuju.net/f/BmMgAp>

* [冗余连接](https://leetcode-cn.com/problems/redundant-connection/)（Medium）半年内出题频次：

| Amazon |
| --- |
| 2 |

* [岛屿数量](https://leetcode-cn.com/problems/number-of-islands/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 16 | 35 | 45 | 79 |

| Apple | Bloomberg | Google | LinkedIn |
| --- | --- | --- | --- |
| 16 | 25 | 16 | 14 |

| DoorDash | 腾讯 |
| --- | --- |
| 6 | 4 |

**要求：使用并查集而非 DFS/BFS 实现**

## **实战例题**

以下为课上实战例题

### 第 13 课

#### 动态规划的优化

* [满足不等式的最大值](https://leetcode-cn.com/problems/max-value-of-equation/)（Hard）半年内出题频次：

| Google |
| --- |
| 15 |

* [环形子数组的最大和](https://leetcode-cn.com/problems/maximum-sum-circular-subarray/)（Medium）半年内出题频次：

| 字节跳动 |
| --- |
| 2 |

#### 区间动态规划

* [戳气球](https://leetcode-cn.com/problems/burst-balloons/)（Hard）半年内出题频次：

| Google | 字节跳动 | Bloomberg | Amazon |
| --- | --- | --- | --- |
| 2 | 4 | 2 | 3 |

* [合并石头的最低成本](https://leetcode-cn.com/problems/minimum-cost-to-merge-stones/)（Hard）半年内出题频次：

| Amazon |
| --- |
| 6 |

#### 树形动态规划

* [打家劫舍 III](https://leetcode-cn.com/problems/house-robber-iii/) （Medium）半年内出题频次：

| 字节跳动 | Google | 微软 | Amazon |
| --- | --- | --- | --- |
| 13 | 2 | 2 | 10 |

| 美团 |
| --- |
| 2 |

### 第 14 课

#### 字典树（Trie）

* [实现 Trie (前缀树)](https://leetcode-cn.com/problems/implement-trie-prefix-tree/) （Medium）半年内出题频次：

| 网易 | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 2 | 4 | 2 | 8 |

| Apple | Google | eBay | Twitter |
| --- | --- | --- | --- |
| 3 | 7 | 2 | 5 |

* [单词搜索 II](https://leetcode-cn.com/problems/word-search-ii/) （Hard）半年内出题频次：

| Twitter | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 3 | 3 | 17 | 24 |

| Apple | Google |
| --- | --- |
| 5 | 8 |

#### 并查集

* [省份数量](https://leetcode-cn.com/problems/number-of-provinces/)（Medium）半年内出题频次：

| Google | 华为 | Amazon |
| --- | --- | --- |
| 3 | 6 | 54 |

* [被围绕的区域](https://leetcode-cn.com/problems/surrounded-regions/)（Medium）半年内出题频次：

| Google | 字节跳动 | 百度 | Amazon |
| --- | --- | --- | --- |
| 7 | 2 | 6 | 4 |

| 华为 |
| --- |
| 3 |

### **第8周: 图论算法 + 字符串处理**

### **本周作业**

以下题目选 2 道提交即可

第八周作业表单：<https://jinshuju.net/f/O7ATBG>

#### 基础问题

* [转换成小写字母](https://leetcode-cn.com/problems/to-lower-case/)（Easy）半年内出题频次：

| Amazon |
| --- |
| 2 |

* [最后一个单词的长度](https://leetcode-cn.com/problems/length-of-last-word/)（Easy）半年内出题频次：

| Google |
| --- |
| 2 |

* [宝石与石头](https://leetcode-cn.com/problems/jewels-and-stones/)（Easy）半年内出题频次：

| Amazon |
| --- |
| 4 |

* [字符串中的第一个唯一字符](https://leetcode-cn.com/problems/first-unique-character-in-a-string/)（Easy）半年内出题频次：

| Facebook | 思爱普 | 微软 | Amazon |
| --- | --- | --- | --- |
| 10 | 2 | 9 | 13 |

| Google | Apple |
| --- | --- |
| 3 | 5 |

* [最长公共前缀](https://leetcode-cn.com/problems/longest-common-prefix/description/)（Easy）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 17 | 16 | 7 | 17 |

| 华为 | 百度 | Google | PayPal |
| --- | --- | --- | --- |
| 3 | 3 | 6 | 2 |

| 美团 | Apple |
| --- | --- |
| 2 | 6 |

#### 字符串操作

* [反转字符串](https://leetcode-cn.com/problems/reverse-string/)（Easy）半年内出题频次：

| PayPal | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 2 | 2 | 4 | 4 |

| Cisco | Apple |
| --- | --- |
| 2 | 6 |

* [翻转字符串里的单词](https://leetcode-cn.com/problems/reverse-words-in-a-string/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 3 | 3 | 12 | 2 |

| 百度 | 腾讯 | Cisco | PayPal |
| --- | --- | --- | --- |
| 2 | 2 | 2 | 2 |

* [仅仅反转字母](https://leetcode-cn.com/problems/reverse-only-letters/)（Easy）半年内出题频次：

| 微软 | Apple |
| --- | --- |
| 3 | 3 |

#### 同构 / 异位词系列问题

* [同构字符串](https://leetcode-cn.com/problems/isomorphic-strings/)（Easy）半年内出题频次：

| Amazon | Facebook |
| --- | --- |
| 4 | 2 |

* [有效的字母异位词](https://leetcode-cn.com/problems/valid-anagram/)（Easy）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 3 | 4 | 5 | 5 |

| Apple | Cisco | Google |
| --- | --- | --- |
| 3 | 3 | 7 |

* [字母异位词分组](https://leetcode-cn.com/problems/group-anagrams/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 7 | 4 | 21 | 24 |

| Apple | eBay | Google | PayPal |
| --- | --- | --- | --- |
| 7 | 10 | 3 | 5 |

* [找到字符串中所有字母异位词](https://leetcode-cn.com/problems/find-all-anagrams-in-a-string/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 2 | 5 | 6 | 4 |

| Apple | PayPal |
| --- | --- |
| 3 | 2 |

#### 字符串 + 动态规划

* [通配符匹配](https://leetcode-cn.com/problems/wildcard-matching/)（Hard）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Google |
| --- | --- | --- | --- |
| 4 | 5 | 8 | 4 |

| Apple |
| --- |
| 3 |

## **实战例题**

以下为课上实战例题

### 第 15 课

#### 最短路

* [网络延迟时间](https://leetcode-cn.com/problems/network-delay-time/)（Medium）半年内出题频次：

| Google | 字节跳动 | Amazon |
| --- | --- | --- |
| 3 | 2 | 4 |

* [阈值距离内邻居最少的城市](https://leetcode-cn.com/problems/find-the-city-with-the-smallest-number-of-neighbors-at-a-threshold-distance/)（Medium）半年内出题频次：

| 阿里巴巴 |
| --- |
| 8 |

* [Dijkstra 求最短路 II](https://www.acwing.com/problem/content/852/) （Easy）（ACWing）

#### 最小生成树

* [连接所有点的最小费用](https://leetcode-cn.com/problems/min-cost-to-connect-all-points/)（Medium）半年内出题频次：

| Amazon |
| --- |
| 3 |

### 第 16 课

#### 字符串基础知识

* [字符串转换整数 (atoi)](https://leetcode-cn.com/problems/string-to-integer-atoi/) （Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 20 | 5 | 10 | 6 |

| Apple | Intel | 美团 | LinkedIn |
| --- | --- | --- | --- |
| 3 | 2 | 2 | 2 |

| 腾讯 |
| --- |
| 2 |

#### Rabin-Karp 字符串哈希算法

* [实现 strStr()](https://leetcode-cn.com/problems/implement-strstr/) （Easy）半年内出题频次：

| Google | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 2 | 7 | 8 | 7 |

| Apple |
| --- |
| 5 |

* [重复叠加字符串匹配](https://leetcode-cn.com/problems/repeated-string-match/)（Medium）半年内出题频次：

| Facebook |
| --- |
| 2 |

#### 回文串系列问题

* [验证回文串](https://leetcode-cn.com/problems/valid-palindrome/)（Easy）半年内出题频次：

| Facebook | Apple | 微软 | Wayfair |
| --- | --- | --- | --- |
| 29 | 10 | 8 | 7 |

| Amazon | 字节跳动 |
| --- | --- |
| 2 | 4 |

* [验证回文字符串 Ⅱ](https://leetcode-cn.com/problems/valid-palindrome-ii/)（Easy）（贪心 + 验证）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 96 | 3 | 6 | 3 |

| Apple | vivo | Google | eBay |
| --- | --- | --- | --- |
| 3 | 2 | 3 | 2 |

* [最长回文子串](https://leetcode-cn.com/problems/longest-palindromic-substring/)（Medium）

中间向两边扩张 O(n2)

加入二分 + Rabin-Karp 优化，O(nlogn)

半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 9 | 45 | 19 | 25 |

| Apple | Wayfair | Google | 华为 |
| --- | --- | --- | --- |
| 8 | 9 | 5 | 4 |

| 百度 | 腾讯 |
| --- | --- |
| 5 | 10 |

#### 字符串 + 动态规划

* [正则表达式匹配](https://leetcode-cn.com/problems/regular-expression-matching/)（Hard）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 11 | 13 | 10 | 5 |

| Apple | eBay | Google |
| --- | --- | --- |
| 2 | 2 | 2 |

* [不同的子序列](https://leetcode-cn.com/problems/distinct-subsequences/)（Hard）半年内出题频次：

| Google | 字节跳动 | 腾讯 | Amazon |
| --- | --- | --- | --- |
| 2 | 4 | 3 | 3 |

### 

# 第9周：高级搜索 + 平衡二叉树，跳跃表

## 本周作业

以下题目选 2 道提交即可

第九周作业表单：<https://jinshuju.net/f/gK7UZt>

* [二进制矩阵中的最短路径](https://leetcode-cn.com/problems/shortest-path-in-binary-matrix/)（Medium）半年内出题频次：

| Facebook | Google | Amazon |
| --- | --- | --- |
| 5 | 4 | 12 |

大多数情况下不会自己去实现平衡树或跳表

可以用语言内置的有序集合库

C++: set, multiset, map, multimap

Java: TreeSet, TreeMap

Python: OrderedDict

* 尝试用语言内置的有序集合库，或写一棵平衡树，来解决[滑动窗口最大值](https://leetcode-cn.com/problems/sliding-window-maximum/)（Hard）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 7 | 9 | 5 | 30 |

| Google | 阿里巴巴 |
| --- | --- |
| 7 | 2 |

* 尝试用语言内置的有序集合库，或写一棵平衡树，来解决[邻值查找](https://www.acwing.com/problem/content/138/)（Medium）
* [设计跳表（选做）](https://leetcode-cn.com/problems/design-skiplist/)（Hard）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Databricks |
| --- | --- | --- | --- |
| 2 | 2 | 2 | 2 |

* [普通平衡树（选做）](https://www.acwing.com/problem/content/255/)（Medium）（AcWing）

## **实战例题**

以下为课上实战例题

### 第 17 课

#### 搜索剪枝

* [括号生成](https://leetcode-cn.com/problems/generate-parentheses/)（Medium）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 15 | 26 | 17 | 13 |

| 华为 | Shopee | Google | 腾讯 |
| --- | --- | --- | --- |
| 4 | 3 | 5 | 4 |

| Apple |
| --- |
| 6 |

* [N 皇后](https://leetcode-cn.com/problems/n-queens/)（Hard）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Google |
| --- | --- | --- | --- |
| 8 | 5 | 3 | 2 |

* [有效的数独](https://leetcode-cn.com/problems/valid-sudoku/)（Medium）半年内出题频次：

| DoorDash | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 19 | 4 | 10 | 10 |

| Apple | Wayfair |
| --- | --- |
| 7 | 2 |

* [解数独](https://leetcode-cn.com/problems/sudoku-solver/)（Hard）半年内出题频次：

| DoorDash | 字节跳动 | 微软 | Google |
| --- | --- | --- | --- |
| 25 | 2 | 12 | 6 |

| Facebook | Amazon |
| --- | --- |
| 2 | 7 |

#### 迭代加深、折半搜索与双向搜索

* [单词接龙](https://leetcode-cn.com/problems/word-ladder/)（Hard）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 18 | 4 | 5 | 44 |

| LinkedIn | Hulu | Google | Apple |
| --- | --- | --- | --- |
| 3 | 3 | 5 | 6 |

#### 启发式搜索：A\* 算法

* [滑动谜题](https://leetcode-cn.com/problems/sliding-puzzle/)（Hard）半年内出题频次：

| Google | 字节跳动 |
| --- | --- |
| 2 | 6 |

* [八数码](https://www.acwing.com/problem/content/847/)（Medium）（AcWing）
* [八数码（打印方案）](https://www.acwing.com/problem/content/181/)（Medium）（AcWing）

# 第10周：树状数组与线段树 + 实战技巧，总结与回顾

## 本周作业

本周作业题为 1 题，有余力同学可以提交课上的实战题作为作业，数量不限。

第十周作业表单：<https://jinshuju.net/f/UXkYvh>

本周为期末周，完成作业的同学，可以开始进行期末考试了

* [掉落的方块](https://leetcode-cn.com/problems/falling-squares/)（Hard） **1~2 年出过此题**：

| 青牛软件 | Uber | 微软 | Amazon |
| --- | --- | --- | --- |
| Square | Facebook | Google | - |

## **实战例题**

以下为课上实战例题

### 第 19 课

#### 树状数组

* [区域和检索 - 数组可修改](https://leetcode-cn.com/problems/range-sum-query-mutable/)（Medium）半年内出题频次：

| Facebook | Amazon |
| --- | --- |
| 2 | 2 |

#### 线段树

* [一个简单的整数问题 2](https://www.acwing.com/problem/content/description/244/) （Hard）（AcWing）

#### 离散化

* [区间和的个数](https://leetcode-cn.com/problems/count-of-range-sum/)（Hard）半年内出题频次：

| Cisco |
| --- |
| 2 |

### 第 20 课

#### 位运算

* [位 1 的个数](https://leetcode-cn.com/problems/number-of-1-bits/)（Easy）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Apple |
| --- | --- | --- | --- |
| 3 | 2 | 2 | 2 |

| Cisco |
| --- |
| 2 |

* [2 的幂](https://leetcode-cn.com/problems/power-of-two/)（Easy）半年内出题频次：

| 字节跳动 | Apple |
| --- | --- |
| 2 | 4 |

* [颠倒二进制位](https://leetcode-cn.com/problems/reverse-bits/)（Easy）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 2 | 3 | 3 | 2 |

* [比特位计数](https://leetcode-cn.com/problems/counting-bits/)（Easy）半年内出题频次：

| 腾讯 | 字节跳动 | Google |
| --- | --- | --- |
| 2 | 7 | 2 |

* [Pow(x, n)](https://leetcode-cn.com/problems/powx-n/) （Medium）半年内出题频次：

| Facebook | LinkedIn | 微软 | Amazon |
| --- | --- | --- | --- |
| 22 | 7 | 6 | 8 |

| Google | Apple | eBay | 阿里巴巴 |
| --- | --- | --- | --- |
| 3 | 3 | 3 | 2 |

| Cisco | 大疆 |
| --- | --- |
| 2 | 2 |

* [N 皇后](https://leetcode-cn.com/problems/n-queens/)（Hard）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Google |
| --- | --- | --- | --- |
| 8 | 5 | 4 | 2 |

* [解数独](https://leetcode-cn.com/problems/sudoku-solver/)（Hard）半年内出题频次：

| Facebook | 字节跳动 | 微软 | Amazon |
| --- | --- | --- | --- |
| 2 | 2 | 12 | 6 |

| Google | DoorDash |
| --- | --- |
| 6 | 25 |

#### 期末串讲

* [天际线问题](https://leetcode-cn.com/problems/the-skyline-problem/)（Hard）半年内出题频次：

| Facebook | 小马智行 | 微软 | Amazon |
| --- | --- | --- | --- |
| 5 | 2 | 4 | 5 |

* [包含每个查询的最小区间](https://leetcode-cn.com/problems/minimum-interval-to-include-each-query/) **1~2 年出过此题**：

| Google | Uber | Apple |
| --- | --- | --- |

# 毕业刷题路径

**首先，恭喜各位同学从极客时间算法训练营毕业！**

相信 70 天的刻意练习给你带来了不少改变。但是毕业后的练习还不能停止，除了课上老师讲授的题目和布置的作业，这里还有一份“左耳朵耗子”陈皓老师分享的毕业刷题路线，助你在训练营结束后持续练习。

## 基础

* [两数之和](http://leetcode-cn.com/problems/two-sum)（简单）
* [有效的括号](http://leetcode-cn.com/problems/valid-parentheses/)（简单）
* [字符串解码](http://leetcode-cn.com/problems/decode-string/)（中等）
* [LRU 缓存机制](http://leetcode-cn.com/problems/lru-cache/submissions/)（困难）
* [实现 Trie（前缀树）](http://leetcode-cn.com/problems/implement-trie-prefix-tree/)（中等）
* [添加与搜索单词 - 数据结构设计](http://leetcode-cn.com/problems/add-and-search-word-data-structure-design/)（中等）
* [单词搜索 II](http://leetcode-cn.com/problems/word-search-ii/) （困难）
* [找不同](http://leetcode-cn.com/problems/find-the-difference/)（简单）
* [单词规律](http://leetcode-cn.com/problems/word-pattern/)（简单）
* [字符串中的第一个唯一字符](http://leetcode-cn.com/problems/first-unique-character-in-a-string)（简单）
* [无重复字符的最长子串](http://leetcode-cn.com/problems/longest-substring-without-repeating-characters)（中等）
* [最小覆盖子串](http://leetcode-cn.com/problems/minimum-window-substring/)（困难）
* [合并两个有序链表](http://leetcode-cn.com/problems/merge-two-sorted-lists)（简单）
* [环形链表](http://leetcode-cn.com/problems/linked-list-cycle)（简单）
* [环形链表 II](http://leetcode-cn.com/problems/linked-list-cycle-ii) （中等）
* [反转链表](http://leetcode-cn.com/problems/reverse-linked-list)（简单）
* [反转链表 II](http://leetcode-cn.com/problems/reverse-linked-list-ii) （中等）
* [旋转链表](http://leetcode-cn.com/problems/rotate-list)（中等）
* [排序链表](http://leetcode-cn.com/problems/sort-list/)
* [链表中倒数第 k 个节点](http://leetcode-cn.com/problems/lian-biao-zhong-dao-shu-di-kge-jie-dian-lcof/)
* [两两交换链表中的节点](http://leetcode-cn.com/problems/swap-nodes-in-pairs)（中等）
* [按奇偶排序数组](http://leetcode-cn.com/problems/sort-array-by-parity/)（简单）
* [按奇偶排序数组 II](http://leetcode-cn.com/problems/sort-array-by-parity-ii/) （简单）
* [有序数组的平方](http://leetcode-cn.com/problems/squares-of-a-sorted-array/)（简单）
* [山脉数组的峰顶索引](http://leetcode-cn.com/problems/peak-index-in-a-mountain-array)（简单）
* [搜索旋转排序数组](http://leetcode-cn.com/problems/search-in-rotated-sorted-array)（困难）
* [搜索旋转排序数组 II](http://leetcode-cn.com/problems/search-in-rotated-sorted-array-ii/) （中等）
* [寻找旋转排序数组中的最小值](http://leetcode-cn.com/problems/find-minimum-in-rotated-sorted-array/)（中等）
* [寻找旋转排序数组中的最小值 II](http://leetcode-cn.com/problems/find-minimum-in-rotated-sorted-array-ii/) （困难）
* [搜索二维矩阵](http://leetcode-cn.com/problems/search-a-2d-matrix)（中等）
* [等式方程的可满足性](http://leetcode-cn.com/problems/satisfiability-of-equality-equations/)（中等）
* [朋友圈](http://leetcode-cn.com/problems/friend-circles/)（中等）
* [账户合并](http://leetcode-cn.com/problems/accounts-merge/)（中等）

## 深度优先搜索

* [二叉树的最大深度](http://leetcode-cn.com/problems/maximum-depth-of-binary-tree)（简单）
* [路径总和](http://leetcode-cn.com/problems/path-sum/)（简单）
* [路径总和 II](http://leetcode-cn.com/problems/path-sum-ii/) （中等）
* [被围绕的区域](http://leetcode-cn.com/problems/surrounded-regions/)（中等）
* [岛屿数量](http://leetcode-cn.com/problems/number-of-islands/)（中等）
* [岛屿的最大面积](http://leetcode-cn.com/problems/max-area-of-island/)（中等）
* [在二叉树中分配硬币](http://leetcode-cn.com/problems/distribute-coins-in-binary-tree/)（中等）

## 回溯

* [括号生成](http://leetcode-cn.com/problems/generate-parentheses/)（中等）
* [N 皇后](http://leetcode-cn.com/problems/n-queens/)（困难）
* [N 皇后 II](http://leetcode-cn.com/problems/n-queens-ii/) （困难）
* [解数独](http://leetcode-cn.com/problems/sudoku-solver/) （中等）
* [不同路径 III](http://leetcode-cn.com/problems/unique-paths-iii/) （困难）
* [单词搜索](http://leetcode-cn.com/problems/word-search/)（中等）

## 分治

* [搜索二维矩阵 II](http://leetcode-cn.com/problems/search-a-2d-matrix-ii/) （中等）
* [合并 K 个排序链表](http://leetcode-cn.com/problems/merge-k-sorted-lists)（中等）
* [为运算表达式设计优先级](http://leetcode-cn.com/problems/different-ways-to-add-parentheses)（中等）
* [给表达式添加运算符](http://leetcode-cn.com/problems/expression-add-operators)（困难）
* [数组中的第 K 个最大元素](http://leetcode-cn.com/problems/kth-largest-element-in-an-array)（中等）
* [最接近原点的 K 个点](http://leetcode-cn.com/problems/k-closest-points-to-origin/)（中等）
* [鸡蛋掉落](http://leetcode-cn.com/problems/super-egg-drop/)（困难）

## 动态规划

* [使用最小花费爬楼梯](http://leetcode-cn.com/problems/min-cost-climbing-stairs)（简单）
* [爬楼梯](http://leetcode-cn.com/problems/climbing-stairs)（简单）
* [不同路径](http://leetcode-cn.com/problems/unique-paths/)（简单）
* [最小路径和](http://leetcode-cn.com/problems/minimum-path-sum/) （中等）
* [最大子序和](http://leetcode-cn.com/problems/maximum-subarray/) （简单）
* [乘积最大子数组](http://leetcode-cn.com/problems/maximum-product-subarray/)（中等）
* [买卖股票的最佳时机](http://leetcode-cn.com/problems/best-time-to-buy-and-sell-stock)（简单）
* [买卖股票的最佳时机 II](http://leetcode-cn.com/problems/best-time-to-buy-and-sell-stock-ii/) （简单）
* [买卖股票的最佳时机 III](http://leetcode-cn.com/problems/best-time-to-buy-and-sell-stock-iii/) （困难）
* [买卖股票的最佳时机 IV](http://leetcode-cn.com/problems/best-time-to-buy-and-sell-stock-iv/) （困难）
* [最佳买卖股票时机含冷冻期](http://leetcode-cn.com/problems/best-time-to-buy-and-sell-stock-with-cooldown/)（中等）
* [买卖股票的最佳时机含手续费](http://leetcode-cn.com/problems/best-time-to-buy-and-sell-stock-with-transaction-fee)（中等）
* [零钱兑换](http://leetcode-cn.com/problems/coin-change) （中等）
* [零钱兑换 II](http://leetcode-cn.com/problems/coin-change-2) （中等）
* [编辑距离](http://leetcode-cn.com/problems/edit-distance)（困难）
* [不同的子序列](http://leetcode-cn.com/problems/distinct-subsequences/)（困难）
* [柱状图中最大的矩形](http://leetcode-cn.com/problems/largest-rectangle-in-histogram/)（困难）
* [最大矩形](http://leetcode-cn.com/problems/maximal-rectangle/)（困难）
* [最大正方形](http://leetcode-cn.com/problems/maximal-square/)（中等）
* [最低票价](http://leetcode-cn.com/problems/minimum-cost-for-tickets/)（中等）
* [区域和检索 - 数组不可变](http://leetcode-cn.com/problems/range-sum-query-immutable/)（简单）
* [二维区域和检索 - 矩阵不可变](http://leetcode-cn.com/problems/range-sum-query-2d-immutable/)（中等）
* [最长上升子序列](http://leetcode-cn.com/problems/longest-increasing-subsequence) （中等）
* [鸡蛋掉落](http://leetcode-cn.com/problems/super-egg-drop/)（困难）