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**预习资料**

* 时间复杂度的基本概念 <https://en.wikipedia.org/wiki/Time_complexity>
* 递归的时间复杂度计算 — master公式 <http://web.cs.ucdavis.edu/~martel/122a/Master-theorem-simple.pdf>
* 基本排序算法
* 时间复杂度O(N^2)的算法：
  + 冒泡排序 <https://en.wikipedia.org/wiki/Bubble_sort>
  + 选择排序 <https://en.wikipedia.org/wiki/Selection_sort>
* 时间复杂度O(N\*LogN)的算法（重点理解）：
  + 快速排序 <https://en.wikipedia.org/wiki/Quicksort>
  + 归并排序 <https://en.wikipedia.org/wiki/Merge_sort>
  + 堆排序 <https://en.wikipedia.org/wiki/Heapsort>
* 时间复杂度O(N)的算法（不基于比较的排序）：
  + 桶排序 <https://en.wikipedia.org/wiki/Bucket_sort>
  + 计数排序 <https://en.wikipedia.org/wiki/Counting_sort>
* 基数排序 <https://en.wikipedia.org/wiki/Radix_sort>
* 常见排序算法的时间复杂度和空间复杂度总结[https://en.wikipedia.org/wiki/Sorting\_algorithm#Comparison\_of\_algorithms](https://en.wikipedia.org/wiki/Sorting_algorithm" \l "Comparison_of_algorithms" \t "_blank)
* 理解什么叫排序算法的稳定性 <https://en.wikipedia.org/wiki/Sorting_algorithm#Stability>
* 基本数据结构的使用
  + 掌握单链表结构和双链表结构，并用代码分别实现单链表和双链表的逆序调整<https://en.wikipedia.org/wiki/Linked_list> <http://www.geeksforgeeks.org/write-a-function-to-reverse-the-nodes-of-a-linked-list/>
  + 掌握二叉树结构，理解二叉树的先序、中序、后序遍历 <https://en.wikipedia.org/wiki/Binary_tree>
  + 理解二叉树的先序、中序、后序遍历 <https://en.wikipedia.org/wiki/Tree_traversal>
  + 理解什么叫二叉树的子树、平衡二叉树、搜索二叉树、完全二叉树、满二叉树、二叉树的先驱节点和后继节点
  + 用伪代码实现图的宽度优先遍历，连带熟悉了队列的操作 <https://en.wikipedia.org/wiki/Breadth-first_search>
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