

CH1 Time Complexity

CH2 CH4 Array & Linked List

CH3 Stack & Queue

CH5 Tree & Binary Tree

- Tree
- Binary Tree
- Binary Search Tree
- Heap
- Thread Binary Tree

CH9 Advanced Tree

- Double-Ended Priority Queue
 - Min-Max Heap
 - Deap
 - SMMH
- Extended Binary Tree
 - $E=I+2N$
 - Huffman Algorithm
- AVL Tree
- M-way search tree
 - B Tree of order m
 - B^+ Tree of order m
- Red-Black tree
- Optimal Binary Search Tree(OBST)
- Splay Tree
- Leftist Heap
- Binomial Heap
- Fibonacci Heap

CH7 Sort

- Search
 - Linear Search
 - Binary Search
- Sort

- Elementary/Simple Sorts
 - Insertion sort
 - Selection sort
 - Bubble sort
 - Shell sort
- Advanced/Efficient Sorts
 - Quick sort
 - Merge sort
 - Heap sort
- Linear-Time sorting methods
 - LSD Radix sort=Radix sort
 - MSD Radix sort=Bucket sort
 - Counting sort

CH8 Hashing

- Collision
- Overflow
- Identifier Density
- Loading Density
- Hashing 優點
- hashing function design
 - 3 design criteria
 - 計算簡單
 - 碰撞少
 - perfect hashing function
 - 不要造成hash table局部偏重儲存的情形
 - uniform hashing function
 - 常見hashing function design methods
 - Middle Square
 - Mod(Division)
 - Folding Addition
 - Digits Analysis
- Overflow Handling
 - Linear Probing
 - Quadratic Probing
 - Double Hashing
 - Chaining
 - Rehashing

CH6 Graph

- DFS
- BFS
- Topological sort
- Minimum Spanning Tree
 - Kruskal's algorithm
 - Prim's algorithm
 - Sollin's algorithm
- Shortest Path Length
 - single source to other destinations
 - Directed Acyclic Graph(DAG)
 - Dijkstra algorithm
 - Bellman-Ford Algorithm
 - all pairs of vertex
 - Floyd-Warshall algorithm
 - Johnson's algorithm
- AOE network
- Articulation Point
- Biconnected Graph
- Biconnected component