MT2-0: Huffman Coding
  • Building the Huffman tree
  • Creating codes
  • Encoding & Decoding
  (examples)
MT2-1: n log n Sorting
  • Merge Sort
  • Quick Sort
    • Partition
  • Heap sort
  (examples) MT2-2: Non-Comparison Sorting
  • Bucket sort
  • Counting sort
  • Radix sort
  (examples) MT2-3: Hash Tables
  • Hash functions
  • Open Hashing (closed addressing, separate chaining)
    • Examples
MT2-4: Hash Tables
  • Closed Hashing (open addressing)
    • Linear Probing
      • Primary clustering
    • Quadratic Probing
    • Pseudo-Random
    • Double Hashing
  (examples)
MT2-5: Disjoint Sets
  • Using Trees to represent sets
  • Parent pointer representation (w/ arrays)
  • Union by rank
  • Path compression
(examples) MT2-6: **Graphs**

- Adjacency Lists
- Adjacency Matrices
- Simple manipulations
  - Convert adjacency list to adjacency matrix, for instance

MT2-7: **Graphs**

- Topological Sort
  - Calculating indegree
  - Using indegree
  - Finding Cycles

MT2-8: **Graphs – Searching**

- DFS
  - DFS Search Tree
- BFS
  - BFS Search Tree

MT2-9: **Graphs – Shortest Path**

- Dijkstra’s Algorithm
  - Dijkstra Table
  - Using Heaps
- Floyd’s Algorithm

MT2-10: **Graphs – Spanning Trees**

- Kruskal’s Algorithm
  - Using disjoint sets
- Prim’s Algorithm

MT2-11: **2-3 Trees & B-Trees**

- Definitions
  - What is a B-Tree of Maximum degree 5?
- Inserting
- Finding
- Deleting
MT2-12: Leftist Heaps

- Definitions
  - NPL
  - Leftist Heap
- Merge
- Insert
- Delete