Prioritized To-Do List

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1. CLRS (Introduction to Algorithms)

- **Basic Data Structures:**
  1. Arrays and Slices
  2. Linked Lists (Single, Double, Circular)
  3. Stacks and Queues
  4. HashMaps
  5. Binary Trees
  6. Binary Search Trees
- **Intermediate Algorithms:**
  1. Sorting Algorithms (Quick Sort, Merge Sort, Heap Sort)
  2. Binary Search
  3. Breadth-First Search (BFS)
  4. Depth-First Search (DFS)
  5. Dynamic Programming (Knapsack, Fibonacci)
- **Advanced Data Structures:**
  1. Graphs (Adjacency List/Matrix, Edge List)
  2. Red-Black Trees
  3. AVL Trees
  4. Tries
  5. Union-Find (Disjoint Set)
- **Advanced Algorithms:**
  1. Dijkstra's Algorithm
  2. A* Search Algorithm
  3. Kruskal's and Prim's Algorithms
  4. String Matching Algorithms (KMP, Rabin-Karp)
  5. Matrix Multiplication (Strassen's Algorithm)

2. Unix-Like Operating Systems (Linux/FreeBSD)

- **System Programming with Linux (Kerrisk)**
- **Unix Programming with FreeBSD (Stevens)**

3. Rust and C++

- Continue mastering Rust and modern C++ (C++17, C++20, C++23)
- Focus on multi-threading, systems programming, and performance optimizations
- Study and implement threading and concurrency in both languages

4. Embedded Systems (Stretch Goal)

- **STM32 Development**
  - Study and inventory SFR registers using STM32CubeIDE
  - Walk through STM32 start-up code and libraries
  - Implement and understand an RTOS on STM32
- **Raspberry Pi Development**
  - Explore embedded Linux and Rust development on Raspberry Pi
  - Investigate RISC-V boards and assembly language