**Data Structure & Algorithms**

**When Learning a Language:-**

* Data types
* Operators & Expressions
* Control Flow Statement like if else, switch, loops(for/while)
* Functions & Recursive Functions
* Arrays (1D, 2D arrays & Matrix)
* Strings
* Pointers/References
* Structures/Classes
* Pre-Processor Directives or imports (basic)
* Bitwise Operators & Masks, some XOR problem
* Basic Exception handling/Errors
* Debugging

**DSA Topics (Part I):-**

* Linear Search
* Binary Search
* Bubble Sort
* Insertion Sort
* Time Complexity & Space Complexity
* Learn Custom Sorting & Comparators

**DSA Topics (Part II):-**

* Linked List
* Stacks
* Queues

**DSA Topics (Part III):-**

* Hashing
  + Hash map & Hash sets
  + Internal Implementation
* Prefix Sum, Sliding Window, Two Pointers

**DSA Topics (Part IV):-**

* Cyclic Sorting
* Recursion
* Quick Sort & Merge Sort
* Backtracking

**DSA Topics (PART V):-**

* Trees:-
  + Binary Trees
  + Binary Search Trees
  + N-Ary Trees
  + AVL Trees, B+ Trees, just concept no need of coding
  + Tree maps & Tree sets
  + Ordered maps & ordered sets
* Tries
* Heap Sort/ Priority Queues
* Problems on Intervals

**DSA Topics (Part VI):-**

* Dynamic Programming
  + Recursion
  + Memoization
  + 1D DP
  + 2D DP
  + Matrix Chain Multiplication Types
  + Solve Recursion Problems using DP
  + DP on Trees
* Graphs