Foundation

	START DATE	STUDY DAYS	PRACTICE DAYS	STATUS

- Linear Datastructures
  - Array
  - Linked List [single + double]
  - Stack + Queue [both Array/LL]

- Strings in JAVA

- Recursion

- Complexity Analysis
  - big O, Θ, Ω

- Search Algorithms
  - Linear Search
  - Binary search

- Sorting Algorithms
  - selection sort
  - bubble sort
  - insertion sort
  - merge sort
  - quick sort
  - bucket sort
  - radix sort
  - shell sort
  - Complexity analysis of All

- Tree based datastructures
  - Binary Tree
    - construction/conversion
    - traversals
    - Checking/Printing

  - Binary Search tree
    - Construction/conversion
    - Searching
    - Self balancing trees
      (Red Black/AVL)

  - Heaps
    - Binary Heap
    - Construction
    - Heap Sort
    - Priority Queues

- Hashing

- **Greedy Algorithms**
  - Selection problems
  - Fractional knapsack
  - Huffman coding
  - Scheduling in OS

- **Basic Dynamic Programming**
  - Fibonacci numbers
  - Rod cutting problem
  - 0/1 knapsack

https://www.codechef.com/certification/data-structures-and-algorithms/prepare