

Pupil:

- ➔ Binary Search,
- ➔ Number Theory,
 - Binary Exponentiation
 - Sieve or Eratosthenes
 - Euclidean algorithm
- ➔ Prefix Sum
- ➔ Greedy
 - Standard greedy algorithms
 - Non-standard problems
- 1. Solve ad-hoc problems
- 2. Up-solve contests
- 3. Give enough contest

Specialist:

- ➔ 2 pointers, sliding windows
- ➔ Adv Number theory
 - Fermates & Eulers theorem
 - Mod inverse & combinatorics
- ➔ DP
 - Both standard & non standard
 - Dp with bitmasking
- ➔ Graph
 - Dfs, Bfs & applications
 - Shortest path algo
- ➔ Trees
 - Basics, subtree precomputation
 - Binary lifting
- ➔ Range query(not mandatory)
 - Segment trees or sparse tables or Fenwick trees
- ➔ String(not mandatory)
 - String hashing
 - Tries
- 1. Start proving approaches
- 2. Start reading blogs
- 3. Avoid learning irrelevant topics(X)
 - Centre & light decomposition on trees
 - KMP algo, Z algo
 - Flows square root decomposition

Source:

1. [Cp algo](#)
2. [Cses](#)