CP Topics

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1. Number Theory:
   - -Modular Arithmetic
   - -Euclidean Algorithm
   - -Sieve of Eratosthenes
   - -Binary Exponentiation
   - -Matrix Multiplication
   - -Combinatorics
   - -Basic knowledge of primes, Divisors, Multiples

   Resources:
   - -Blog : cp algorithm/algebra
   - -Video Playlist : Video Playlist

2. Binary and Ternary Search
   - -Normal Binary Searching
   - -Binary Searching on Answer
   - -Monotonic Functions

   Resources :
   - -Video : codeforces edu course
   - -Video Playlist : youtube

3. Dynamic Programming(Most important)
   - -Practice a bunch of standard problems
   - -DP section of CSES
   - -DP with Bitmasking(Beginner)

-DP on trees(Beginner)

Resources :

-CSES problem set : CSES problem set

-Video Playlist : youtube

4. Greedy Problems

-Basic Algorithms on Intervals

-Practice a bunch of standard problems

-Searching/Sorting section of CSES

-Proving algorithms (Optional : Exchange Arguments)

Resources:

-CSES problem set : CSES problem set

-video : youtube

5. Graphs

-DFS

-BFS

-Connected Components

-Prim's Algo, Floyd Warshall, Bellman Ford

-Graph section of CSES

-DSU/UFDS (Optional)

Resources:

-CSES problem set : CSES problem set

-video : youtube

6. Trees

-Basic Properties

-DFS
-Binary Lifting
-Finding LCA in LogN
-DP on trees (Optional)
-Trees section of CSES

Resources:
-CSES problem set : CSES problem set
-video : youtube

--> C++ STL

Advance Topics :-
-Segment Trees
-Fenwick Trees
-Euler Tour
-Heavy Light Decomposition
-Centroid Decomposition
-DP Optimisations
-KMP Algo, Z Algo, Manacher's Algo
-Matrix Expo
-Euler Totient Function
-Square Root Decomposition
-Flows
-Strongly Connected Components