Cp (Guideline)

Coding Websites

- Hacker Rank
- Hacker Earth
- CodeChef

Language: C++

Basics

- Data Types
- Operators
- Variables
- Loops
- Conditional Statements
- Functions
- Arrays
- Strings
- Pointers (not so important)
- References

CP Topics

- Time Complexity (An explanation, examples e.g. Website: GFG, Top Coder, YT: Mycodeschool)

STL (Standard Template Library)

- Vector
- Pair
- Set
- Map
- Stack
- Queue
- Multiset

Implemented Algorithms

- Sorting, Searching, Reverse, and others. (C++) (Website: GFG, HackerEraearth, YT: Code Buddy)

Data Structures (Website: GFG, YT: Mycodeshool)

- Linked List
- Binary Search
- Stack
- Queue
- Graphs

Algorithms

- Sorting
    - Selection Sort
    - Bubble Sort
    - Insertion Sort
    - Merge Sort
    - Quick Sort
    - Radix Sort

Dynamic Programming

➔ HackerEarth article and other platforms artical of dynamic programming

- Question Solving ((GeeksforGeeks (GfG), YT (YouTube))

Graph Algorithms

- BFS
- DFS

Note: Shortest Path Algorithm

(Graph related Article >> Website : HackerEarth)

GDC Algorithm

Article HackerEarth

- Number theory 1
- Number theory 2

Binary Exponentiation

Article -> HackerEarth

Modular Arithmetic

Article -> HackerEarth (tricky formula -, /)

Prime Sieve

Article -> HackerEarth

Binary Search

Theory -> Programiz

Question Practice -> HackerEarth

Trie Data Structure

Article -> HackerEarth

Advance CP (ICPC)

Number Theory

- GCD
- Binary Exponentiation
- Modular Arithmetic'
- Sieve
- Extended Euclid Algorithm
- Millar Rabin (Website: Wikipedia)
- ETF(Eular Totient Function)

Data Structure

- STL
- Trie data structure (Article: Quora)
- Segment Tress *** (Website: HackerEarth, Emax.ru, CP-Algorithms)
- Stored Segment Tree (CodeChef)
- Persistent Segment Trees
- Binary Indexed Trees
- SQRT Decomposition (Website: CP-Algorithms)
- MO's Algorithm (Website: CP-Algorithms)
- Heavy Light Decomposition
- Surffix Arrays (CP-Algorithms)

Graph Theory

- BFS
- DFS
- Dijakstra
- Minimum Spanning Tree
- Disjoint set union
- LCA (Low Common Ancestor) (Website: CP-Algorithm)
- Bridges and Articulation points (Website: CP-Algorithm)
- SCC (Strongly Connected Components) (Website: HackerEarth)
- Flows
- Eular Tuor / Tree Flattening

Dynamic Programming (Practice, Practice, Practice)

Article -> CodeForces

- DP bitmask (CodeForces)
- SOS DP (DP – Dynamic Programming)
- DP on Trees

Miscellaneous

- Binary Search
- Game Theory
- Rabin Karp and KMP
- Matrix Exponentiation
- FFT

Note: Practice -> Morass's blog (Website: CodeForces)