"C++ Resources"

Beginners - GREEN
Intermediate - RED

1. C++ language

- In Hindi
  a. **CodeWithHarry**- Cpp playlist (Hindi) (include OOPs)
     C++ Tutorials In Hindi
     C++ syntax - 1-18 , OOPs - 19-58 (Optional) ,File IO -
     59-62 , C++ STL - 63-74

  b. Learn C++ Programming (Guided path)The a

  c. C++ Programming Language - GFG Docs

  d. cplusplus.com - The C++ Resources Network - C++ docs

- In English
  1. Tech with Tim - Learn C++ With Me
     (1-20 C++ basics + STL)

  2. FreeCodeCamp (Oneshot 4Hr video):
     https://youtu.be/vLnPwxZdW4Y (C++ basics + OOPS)

  3. Practice Questions : 📄 30 DAY CHALLENGE.pdf

  4. Solve C++ - Hackerrank practice (Set the difficulty
     level and solve accordingly.)

2. C++ STL

Documentation or Articles

1. STL article on HackerEarth
   Standard Template Library | HackerEarth

2. STL article
   The C++ Standard Template Library (STL) - GeeksforGeeks

3. STL Tutorial : C++ STL Tutorial (tutorialspoint.com)

Youtube Videos/Playlist for STL

- ○ Code N Code
- https://youtube.com/playlist?list=PL2q4fbVm1Ik4OWga4UQR4WlYteMiH46zG

- ○ Codechef
- https://youtube.com/playlist?list=PLQXZIFwMtjowd0uvZcd5B1wL0hx6xQJVU

- ○ CodeBeyond (striver)
- https://youtube.com/playlist?list=PLN4aKSfpk8TQ6CqzMRDVUr-jEpObLiYdq

- ○ STL
- https://youtube.com/playlist?list=PLauivoElc3gh3RCiQA82MDI-gJfXQQVnn

- ○ STL in one Shot by Love Babbar
- https://youtu.be/mOzPZ3hWFVQ

- ○ Learn STL in 45 minutes (Striver)
- https://youtu.be/zBhVZzi5RdU

○ Practice Questions on Sets & Maps (By Love Babbar

● Set and Map1.pdf - OneDrive (live.com)

3. DSA Basics

● 📄 30 DAY CHALLENGE.pdf
● 450 DSA Cracker

4. CP

● Love Babbar (CP roadmap) - https://youtube.com/playlist?list=PL4PCksYQGLJOcaPLgeMFaxaHigPFjBuTG

5. Intermediate CP

Good Blog Post Resources about Algorithm and Data Structures

ARRAYS
1. **Sort an array of 0's 1's 2's without using extra space or sorting algo (EASY)**
   https://leetcode.com/problems/sort-colors/

2. **Repeat and Missing Number (EASY)**
   https://www.geeksforgeeks.org/find-a-repeating-and-a-missing-number/

3. **Merge two sorted Arrays without extra space (HARD)**
   https://www.youtube.com/watch?v=hVl2b3bLzBw&list=PLgUwDviBIf0rPG3Ictpu74YWBQ1CaBkm2&index=4

4. **Kadane's Algorithm (EASY)**
   https://www.youtube.com/watch?v=w_KEocd__20&list=PLgUwDviBIf0rPG3Ictpu74YWBQ1CaBkm2&index=5
   Maximum Subarray Sum | Leetcode | Kadane's Algorithm | Brute-Better-Optimal | CPP/Java

5. **Merge Overlapping Subintervals (INTERMEDIATE)**

https://www.youtube.com/watch?v=2JzRBPFYbKE&list=PLgUwDviBIf0rPG3Ictpu74YWB
Q1CaBkm2&index=6

6. **Find the duplicate in an array of N+1 integers. (EASY)**
https://www.youtube.com/watch?v=32Ll35mhWg0&list=PLgUwDviBIf0rPG3Ictpu74YWB
Q1CaBkm2&index=1

7. **Set Matrix Zeros (INTERMIDIATE)**
(https://www.youtube.com/watch?v=M65xBewcqcI&list=PLgUwDviBIf0rPG3Ictpu74YWB
Q1CaBkm2&index=7)

8. **Pascal Triangle (EASY)**
https://www.youtube.com/watch?v=6FLvhQjZqvM&list=PLgUwDviBIf0rPG3Ictpu74YWB
Q1CaBkm2&index=8

9. **Next Permutation (INTERMEDIATE)**
https://www.youtube.com/watch?v=LuLCLgMElus&list=PLgUwDviBIf0rPG3Ictpu74YWB
Q1CaBkm2&index=9

10. **Inversion of Array (INTERMEDIATE / HARD)**
https://www.youtube.com/watch?v=kQ1mJlwW-c0&list=PLgUwDviBIf0rPG3Ictpu74YWB
Q1CaBkm2&index=10

11. **Stock Buy and Sell (EASY)**
https://www.youtube.com/watch?v=eMSfBgbiEjk&list=PLgUwDviBIf0rPG3Ictpu74YWBQ
1CaBkm2&index=11

12. **Rotate Matrix (INTERMEDIATE)**
https://www.youtube.com/watch?v=Y72QeX0Efxw&list=PLgUwDviBIf0rPG3Ictpu74YWB
Q1CaBkm2&index=12

(Hashing)
1. **2 Sum problem (EASY)**
https://www.youtube.com/watch?v=dRUpbt8vHpo&list=PLgUwDviBIf0rVwua0kKYlsS_ik_
1lyVK_&index=1

2. **4 Sum problem (EASY)**
https://www.youtube.com/watch?v=4ggF3tXIAp0&list=PLgUwDviBIf0p4ozDR_kJJkONnb
1wdx2Ma&index=20

3. **Longest Consecutive Sequence (INTERMEDIATE)**
https://www.youtube.com/watch?v=qgizvmgeyUM&list=PLgUwDviBIf0p4ozDR_kJJkONn
b1wdx2Ma&index=21

4. **Largest Subarray with 0 sums Three (EASY)**
   https://www.youtube.com/watch?v=xmguZ6GbatA&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=22

5. **Count number of subarrays with given XOR(INTERMEDIATE / HARD)**
   https://www.youtube.com/watch?v=lO9R5CaGRPY&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=23

6. **Longest substring without repeat (INTERMEDIATE)**
   https://www.youtube.com/watch?v=qtVh-XEpsJo&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=25

LinkedList:-
1. **Reverse a LinkedList (EASY)**
   https://www.youtube.com/watch?v=iRtLEoL-r-g&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=26

2. **Find the middle of LinkedList (EASY)**
   https://www.youtube.com/watch?v=sGdwSH8RK-o&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=27.

3. **Merge two sorted Linked List (EASY)**
   https://www.youtube.com/watch?v=Xb4slcp1U38&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=28

4. **Remove N-th node from the back of LinkedList (INTERMEDIATE)**
   https://www.youtube.com/watch?v=Lhu3MsXZy-Q&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=29

5. **Delete a given Node when a node is given. (0(1) solution) (EASY)**
   https://www.youtube.com/watch?v=icnp4FJdZ_c&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=30

6. **Add two numbers as LinkedList (INTERMEDIATE)**
   https://www.youtube.com/watch?v=LBVsXSMOIk4&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=31

7. **Find intersection point of Y LinkedList (INTERMEDIATE)**
   https://www.youtube.com/watch?v=u4FWXfgS8jw&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=32

8. **Detect a cycle in Linked List (EASY)**

https://www.youtube.com/watch?v=354J83hX7RI&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=33

9. **Reverse a LinkedList in groups of size k**. (HARD)
https://www.youtube.com/watch?v=Of0HPkk3JgI&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=33

10. **Check if a LinkedList is a palindrome or not. (EASY)**
https://www.youtube.com/watch?v=-DtNInqFUXs&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=35

11. **Find the starting point of the Loop of LinkedList (Intermediate)**
https://www.youtube.com/watch?v=QfbOhn0WZ88&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=36

12. **Flattening of a LinkedList (Hard)**
https://www.youtube.com/watch?v=ysytSSXpAI0&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=37

13. **Rotate a LinkedList (HARD)**
https://www.youtube.com/watch?v=9VPm6nEbVPA&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=38

(2-pointer)
1. **Clone a Linked List with random and next pointer(EASY)**
https://www.youtube.com/watch?v=VNf6VynfpdM&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=39

2. **3 sum (EASY)**
https://www.youtube.com/watch?v=onLoX6Nhvmg&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=40

3. **Trapping rainwater (MEDIUM)**
https://www.youtube.com/watch?v=m18Hntz4go8&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=41

4. **Remove Duplicate from Sorted array (MEDIUM)**
https://www.youtube.com/watch?v=Fm_p9IJ4Z_8&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=42

5. **Max consecutive ones (MEDIUM)**
https://www.youtube.com/watch?v=Mo33MjjMlyA&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=43

(Greedy)

1. **N meeting in one room(EASY)**
   https://www.youtube.com/watch?v=II6ziNnub1Q&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=44

2. **Minimum number of platforms required for a railway(MEDIUM)**
   https://www.youtube.com/watch?v=dxVcMDI7vyI&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=45

3. **Job sequencing Problem (MEDIUM)**
   https://www.youtube.com/watch?v=LjPx4wQaRIs&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=46

4. **Fractional Knapsack Problem(MEDIUM)**
   https://www.youtube.com/watch?v=F_DDzYnxO14&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=48

5. **Greedy algorithm to find the minimum number of coins(HARD)**
   https://www.youtube.com/watch?v=mVg9CfJvayM&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=47

6. **Activity Selection (it is same as N meeting in one room) (HARD)**
   https://www.youtube.com/watch?v=II6ziNnub1Q&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=44

Recursion

1. **Subset Sums (HARD)**
   https://www.youtube.com/watch?v=rYkfBRtMJr8&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=52

2. **Subset-II (HARD)**
   https://www.youtube.com/watch?v=RIn3gOkbhQE&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=53

3. **Combination sum-1 (HARD)**
   https://www.youtube.com/watch?v=OyZFFqQtu98&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=49

4. **Combination sum-2 (HARD)**
   https://www.youtube.com/watch?v=G1fRTGRxXU8&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=50

5. **Palindrome Partitioning (HARD)**
   https://www.youtube.com/watch?v=WBgsABoClE0&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=51

6. **K-th permutation Sequence (HARD)**
   https://www.youtube.com/watch?v=wT7gcXLYoao&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=55

Permutations and recursion
1. **Print all permutations of a string/array (HARD)**
   https://www.youtube.com/watch?v=f2ic2Rsc9pU&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=52

2. **N queens Problem (HARD)**
   https://www.youtube.com/watch?v=i05Ju7AftcM&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=57

3. **Sudoku Solver(HARD)**
   https://www.youtube.com/watch?v=FWAIf_EVUKE&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=58

4. **M colouring Problem (HARD)**
   https://www.youtube.com/watch?v=wuVwUK25Rfc&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=59

5. **Rat in a Maze (HARD)**
   https://www.youtube.com/watch?v=bLGZhJlt4y0&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=60

6. **Word Break (print all ways)** (Will be covered later in DP series)

(Binary Search)
1. **The N-th root of an integer (use binary search) (square root, cube root, ..) (Intermediate)**
   https://www.youtube.com/watch?v=WjpswYrS2nY&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=61

2. **Matrix Median (Hard)**
   https://www.youtube.com/watch?v=63fPPOdIr2c&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=62

3. **Find the element that appears once in sorted array, and rest element appears twice (Binary search) (Hard)**

https://www.youtube.com/watch?v=PzszoiY5XMQ&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=63

4. **Search element in a sorted and rotated array/ find pivot where it is turned (Intermediate)**
https://www.youtube.com/watch?v=r3pMQ8-Ad5s&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=64

5. **Median of 2 sorted arrays (Intermediate)**
https://www.youtube.com/watch?v=NTop3VTjmxk&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=65

6. **K-th element of two sorted arrays (Intermediate)**
https://www.youtube.com/watch?v=nv7F4PiLUzo&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=66

7. **Allocate Minimum Number of Pages (Intermediate)**
https://www.youtube.com/watch?v=gYmWHvRHu-s&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=69

8. **Aggressive Cows (Intermediate)**
https://www.youtube.com/watch?v=wSOfYesTBRk&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=70

(Stack and Queue)

1. **Implement Stack Using Arrays (Intermediate)**
https://www.youtube.com/watch?v=GYptUgnIM_I&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=68

2. **Implement Queue Using Arrays (Intermediate)**
https://www.youtube.com/watch?v=M6GnoUDpqEE&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=72

3. **Implement Stack using Queue (using single queue) (Intermediate)**
https://www.youtube.com/watch?v=jDZQKzEtbYQ&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=74

4. **Implement Queue using Stack (0(1) amortised method) (Intermediate)**
https://www.youtube.com/watch?v=3Et9MrMc02A&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=75

5. **Check for balanced parentheses (Intermediate)**
https://www.youtube.com/watch?v=wkDfsKijrZ8&list=PLgUwDviBIf0p4ozDR_kJJkONnb1wdx2Ma&index=74

6. **Next Greater Element (Intermediate)**
https://www.youtube.com/watch?v=Du881K7Jtk8&list=PLgUwDviBIf0p4ozDR_kJJkONn b1wdx2Ma&index=75