Students' Placement Office IIT Kanpur

How to start doing effective coding

Step 1

Go through ESC101A slides which would help you with some objective questions and also some interviewers would ask some basic C questions

Step 2

Code editor installation sublime text, VS code or online compilers, would be preferred

Step 3

Shift from C to C++.
C and C++ are not different programming languages

Step 4

Learn STL: two pages of topcoder for STL in detail or go through some youtube lectures for an introduction

How to start doing effective coding

Step 5

Start practising through **interview bit,** go through Questions level by level

Step 6

Go through tutorials (**GFG, Interviewbit**) to learn the theory of the different topics.

Step 7

Then do the questions of different scores over interviewbit.

Step 8

Mock coding tests by

- SPO
- GFG, Codeforces and Codechef
- PClub Test

What to do if you got stuck somewhere?

- If you are not able to do coding questions of interview bit -
  - Then go through the questions of leetcode with the same topic and easy tag questions.
  - Go through the questions **acceptance percentage-wise.**
- Then after solving questions for a certain percentage go through interview bit questions again.
- Try the problem for **at least 30 mins.** If you are not able to solve it, go through the solutions to the problem. You can also go through detailed video solutions on YouTube. You can find video solutions for most questions on leetcode and interview bit.
- Contact seniors or batchmates to discuss the problem.

Roadmap - Software

- 8 week DSA Plan (Step wise) is prepared with the help of Seniors and Alumni

Week wise DSA Plan

Learn through bi-weekly plan about what you need to learn along with the resources from which you can learn effectively

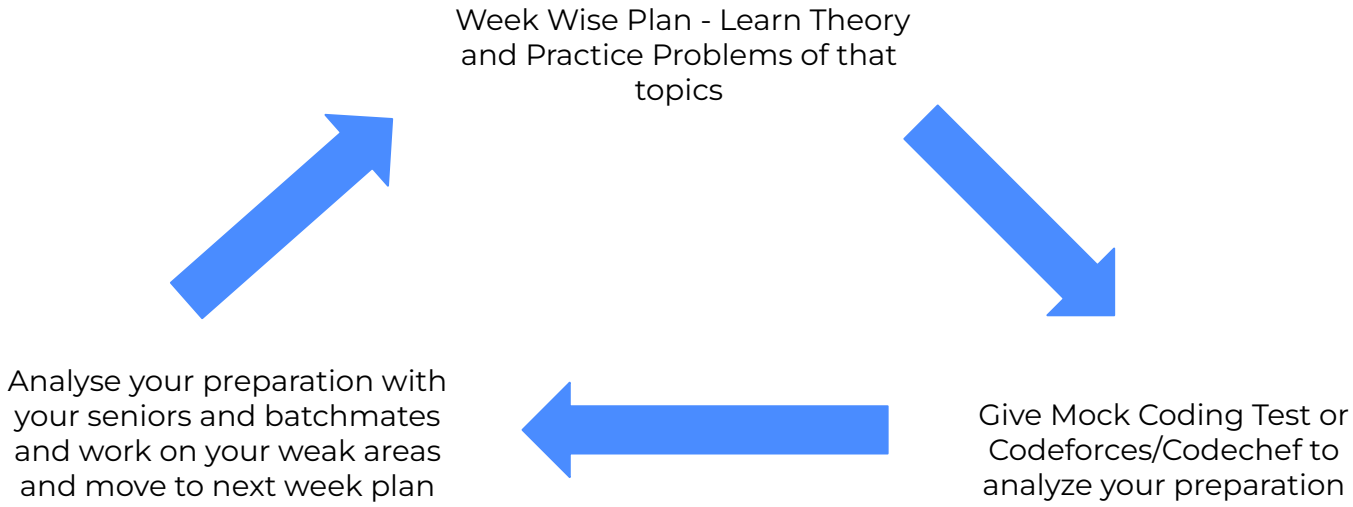
Batchmates/ Seniors for guidance

Discuss coding contest solutions and your doubts with your batchmates and seniors

Bi-Weekly Contest

Attempt contest organised by Codeforces, Codechef

Flow Map


Week Wise Plan - Learn Theory and Practice Problems of that topics
Give Mock Coding Test or Codeforces/Codechef to analyze your preparation
Analyse your preparation with your seniors and batchmates and work on your weak areas and move to next week plan

Week 1 - 2 Plan

Syllabus	Text and Video Resources	Question Practice Resources
STL Basics (Vector, Strings, Sorting), Maths, Time Complexity, Bit Manipulation, Two Pointers	Vector (GFG Link, TopCoder Link) String (GFG Link) Sorting (GFG Link) Time Complexity (GFG Link) Bit Manipulation(GFG Link) Two Pointers(GFG Link)	Codeforces Question Link Interview Bit (Mandatory) Watch videos of interview bit also

Week 2 - 3 Plan

Syllabus	Text and Video Resources	Question Practice Resources
Recursion Binary Search Stacks Queues	Recursion (GFG Link, YouTube Video) Binary Search (GFG Link, YouTube Video, Codeforces Blog) Stacks (GFG Link, YouTube Video) Queues (GFG Link)	Interview Bit (Mandatory) Watch videos of interview bit also HackerEarth - Stacks || Queues

Week 4 Plan

Syllabus	Text and Video Resources	Question Practice Resources
Set Maps and Heaps	Heap (GFG Link || YouTube Video) Maps (Scaler Academy || GFG Link)	Interview Bit (Mandatory) Watch videos of interview bit also

Week 5 - 6 Plan

Syllabus	Text and Video Resources	Question Practice Resources
Dynamic Programming	YouTube Video Link 1 Link 2	Interview Bit (Mandatory) Watch videos of interview bit also ATCoder

Week 7 Plan

Syllabus	Text and Video Resources	Question Practice Resources
Graphs - Traversal	Important Topics (BFS, DFS) YouTube Video	Interview Bit (Mandatory) Watch videos of interview bit also

Week 8 Plan

Syllabus	Text and Video Resources	Question Practice Resources
Linked List Trees	Linked List (Youtube Video (5 -13)) Trees (Youtube Video (25 -37))	Interview Bit (Mandatory) Watch videos of interview bit also

Week 9 Plan

Syllabus	Text and Video Resources	Question Practice Resources
Graphs (Algorithm)	Codeforces Blog	Interview Bit (Mandatory) Watch videos of interview bit also

Additional Resources for Practice

1) More Question for Practice Topic Wise -
   a) Codeforces Blog,
   b) Topic wise Question with code templates
   c) CSES Problem Set

2) For advance learner - CP-Algorithms

3) For general learning do search following thing
   Codeforces blog - Topic Name, TopCoder - Topic Name

4) Past Year Papers of Company: Click Here

5) DBMS and OOPs concepts:
   a) DBMS
   b) OOPs concepts

All the Best !