Competitive Coding Complete Guide part - 1

\*) Learn time complexity & space complexity (if you don’t know)

- <https://www.youtube.com/watch?v=DB057lNgaZ0&list=PL5NG-eEzvTtgOz48TpzNywJ0dC5QvojS6>

\*) Learn 1 programming language

- c++ with STL or java with collections

- STL or collection is like --

map, set, priority\_queue, list, stack, queue, deque

- learn all with their time complexity and get familiar with syntax

**Solve problem in iterations. First solve 50% of problems of each topic then re-iterate of those topics to solve rest.**

1. Array

<https://www.youtube.com/watch?v=U50xV2ZrvUg&list=PL4PCksYQGLJM2mKe1n8LnFgcm3FRLhxZ9&index=6>

Standard questions: <https://www.youtube.com/watch?v=gf7vdIin0dk&list=PLeIMaH7i8JDjd21ZF6jlRKtChLttls7BG>

* Huh, lot of problems right? Don’t worry we are with you. Just try to understand problem, take your own example (Test case). And find some pattern.

1. String

<https://www.youtube.com/watch?v=359kHvHNJeE&list=PL4PCksYQGLJM2mKe1n8LnFgcm3FRLhxZ9&index=7>

* Oh no, again same person video right? But the problem he gives is nice isn’t it?

1. Maps and sets

<https://www.youtube.com/watch?v=_vJpiotLgIA&list=PL4PCksYQGLJM2mKe1n8LnFgcm3FRLhxZ9&index=11>

* wooh, is map and set type of problem? No. is it type of data structure? Not really. So what is this?
* When you learned time complexity you learned some data-structure have fast access & slow search like O(1) and O(n). some have slower insert and faster search. But have you worries is that possible to do all operation search, insert, delete at O(1). Well, hashing is technique that has power to do this magic (almost!) and map and set is implementation of that.

1. Recursion

<https://www.youtube.com/watch?v=AqHoXqOgctU&t=55s>

<https://www.youtube.com/watch?v=kHi1DUhp9kM&list=PL_z_8CaSLPWeT1ffjiImo0sYTcnLzo-wY>

* Pack your self in room of mirror and that’s what recursion is right? Not exactly recursion has base condition.
* 2nd link no need to watch all videos of series just watch until you comfort with recursion.

1. Basic Math

<https://www.youtube.com/watch?v=dyrRM8dTEus&t=164s>

<https://www.youtube.com/watch?v=CnPreli2F-E>

<https://www.youtube.com/watch?v=Pbf8tScR_fg>

<https://www.youtube.com/watch?v=aG7J3m3vlNA>

* Math a most scary topic right? Hmm not now, it is very basic math topics other important topics we will provide in next version of this docs.

**Some of above videos have just explanation of concept. So, you can search standard problems of that topic.**

\*) What to do when stuck?

- First understand problem statement.

- Try your own example.

- How you can think solution for given input.

- Could you come up with any approach? No? Don’t worry that’s where actual learning begin.

- Look at solution and understand approach and though what you missed to solve this question.

**Some tips to follows**

* **Solve hackerrank easy level problems of above topics.**
* **Solve easy level problems in Leetcode.**
* **Solve daily at least 7-8 problems.**
* **Discuss problem and approach in group (if possible).**
* **Give codechef Long contest.**

**You can find problems on below topics by yourself.**

**\*)** **Some techniques you should learn.**

1. Prefix sum technique

* <https://www.youtube.com/watch?v=scD312I7kkE>
* <https://www.youtube.com/watch?v=pVS3yhlzrlQ>

1. Two pointer technique

* <https://www.youtube.com/watch?v=2wVjt3yhGwg>

1. Sliding window technique

* <https://www.youtube.com/watch?v=__guhvzO540>
* <https://www.youtube.com/watch?v=MK-NZ4hN7rs>

1. Bonus\*\*

* Before watch video try to solve this problem <https://www.hackerrank.com/challenges/crush/problem>
* Don’t look at difficulty of problem after learning technique it is easy.
* <https://www.youtube.com/watch?v=hDhf04AJIRs>

Most of you will start competitive coding because someone like us suggested. But after some day you will love it. And it becomes your daily habit to solve some challenging problems and that motivations you a lot.