harshilbhatia2001's blog

How I became Expert from being a newbie in Just One Month

By **harshilbhatia2001**, 5 days ago,

Dear Codeforces Community.

Today I want to share how i went from a newbie to being blue in just a month. I started competitive programming around 3 months back (didn't do it seriously till a month ago) , and like most new coders I had no idea what to do for CP and practised haphazardly , and my rating kept going down (it went as low as 1011) . I started watching algorithm and math lectures and tried doing courses on data structure and algorithms but none of them actually helped me in the beginning .I am not saying they weren't good but you actually do not need them in CP . Almost all courses are focused on teaching us how data structures like binary search tree(sets) , linked lists, etc work but we do not actually need to know that at a beginner level neither do we need to know the pointer (memory efficient) implementation of graphs and trees , i haven't honestly encountered any situation in which i felt like i needed that Information . So having heard of dp and graphs in these lectures , i directly tried learning them but i could hardly ever solve a dynamic programming problem.

A lot of people recommended upsolving questions after my contest which i tried doing but didn't learn much from it either because I didn't really understand how they came to that solution and sometimes the difference between B and C honestly turned out to be too much , and i slowly realized upsolving wouldn't work for me as i couldn't even solve the very basic questions in the contest sometimes even A.

A lot of very experienced coders have actually participated in Olympiads and didn't actually start from codeforces and their methods did not simply work for someone as inexperienced at CP like me as our thinking ability isn't developed as much .

This is when i changed the way i approached competitive programming

1. First of all A and B (div2) problems don't usually need any complex algorithm or even data structure for that matter and are simple implementation problems. So practising a bunch of A and B should be enough to get you through that .
2. Learning stl and practising questions on Manipulating Data structures is important because even when i could think of the approach a lot of times i would not be able to correctly implement like using a bunch of arrays where a map would have solved it easily , not using sets and queues in my code ,etc
3. Write Short and Beautiful code — The shorter your code will be the easier it is for you to find bugs , and please do not repeat yourself don't write the same piece of code twice in your program especially in questions of constructive algorithms
4. Learn to handle corner cases as this will usually be the reason that even if your code seems correct it still shows WA in some test case usually in (A and B of div 2)
5. Look out for majorly for Indexing errors and Integer overflow(use long long instead of int) these seem very obvious but during a contest intentionally remembering them and checking whether the integer can overflow and should i use long long or not is important.

So how should You actually practise ?

CONTESTS

Give contests and do not feel bad or unmotivated if your rating decreases after the contest .

After a contest there will be 3-4 types of problems

1. Accepted
2. Wrong answer
3. Tried but couldn't reach the solution
4. Had no idea what to do in the problem

If you had successfully solved the problem , still read the editorial and see the problem setters solution , they are very consise and well thought out codes and see how you could've implemented the your solution in a better way . Sometimes to make the problem a little easier (usually in div 3 and now 4) the problem setters models the constraints such that a suboptimal solution also passes while a better solution with a better time complexity exists .

If you got WA after submitting the solution — your approach can be wrong and was passing just for the given test cases (if pretest 2 comes out to be wrong) but if a like pretest 5-6 comes out to be wrong usually you didn't handle a corner case and try to resolve the error yourself by reviewing the test where it came out wrong(if the test case isn't exceptionally large)

Now if you couldn't think of the correct approach and neither was it a corner case problem you should probably look at the editorial but not all at once , read the first few lines and try to deduce the solution from there on , if you still can't do it read the editorial and implement it after a day or two.

If you can't understand anything in the tutorial it is better to leave this question for now , do not waste your time on learning something advanced at this early stage (like generating functions , lca etc..).

PROBLEM-SET

Do not use a lot of resources and please do not try to learn every new algorithm / inovative way you come across while solving a problem.

Types of problems you should know

1. Constructive Algorithms
2. Brute Force
3. Implementation
4. Math
5. Binary Search
6. Greedy

For increasing your rating beyond 1500

1. Dynamic Programming
2. Basic DFS,BFS

I am in no way saying this is the exhaustive list of concepts and no problem from A,B,C can use ideas other than these but they usually do not do so . And you Do not need to master these concepts before giving any contest , you will keep getting better at them .

While practising from problem-set do not do questions that have a rating exceptionally higher than yours and also don't keep doing questions that have a rating lower than yours none of the above will actually help you.

eg if you have a rating 1400 try solving questions of 1500 — 1600 , sometimes the question can be harder or easier than the rating given just because the rating is dependant on rating of people who solved it and isn't an absolute .

Now If you can constantly solve A and B in a div 2 contest you would become green and if you can do that fast enough you can even reach cyan.

I started maintaining a table of questions i was doing for practise (a part of it is attached to give you the idea) and was subdivided with a similar idea that i used to divide the contest problems.

While working on a particular topic , use tags to try and solve questions of a particular type to get an idea of how to approach problems . I personally only used codeforces for practise but a lot of people recommend AtCoder(beginner contest) and TopCoder(SRM's) for Practise. This is my personal opinion and in no way the absolute best way you should approach competitive programming but it worked for me and i hope it would also work for a struggling newbie.

A drive link to my recent practice problems https://drive.google.com/open?id=1jEFYedE8P_2X9R4wbRVfdvGUQNHfULqc

Anyone who has a better strategy please mention in the comments so that i can learn from that

#newbie, practice, coding practices, expert

+77 harshilbhatia2001 5 days ago 54

Comments (54)

Write comment?

5 days ago, # | ← Rev. 3 +1

stacksbits

Awesome. Thanks for the post. So do you sort the questions yourself or use a2oj for selecting problems? I just came out of my newbie phase and I don't want to go their again xD

Also how did you create a table in your pdf? Seems an awesome way to keep tab of problems solved. I just looked up notion.com but couldn't find a table option

→ Reply

5 days ago, # ^ | 0

harshilbhatia2001

Sometimes I used a2oj too but some of the problems there are kindof old and some times older problems have a higher difficulty just take a look at this problem it is rated 1300 https://codeforces.com/problemset/problem/429/A . I used notion only to maintain the table ,you can create table within a new page .

→ Reply

4 days ago, # ^ | 0

Clickbait

I had created Updated ladders for A2OJ by creating a short script. 50% of the questions are 0-1 year old, while the remaining are from 1-3 year old contests.

Here is the link:

https://github.com/karansinghgit/CodeForces-Ladders

Hope it helps!

→ Reply

5 days ago, # | ← Rev. 2 +43

Sixpathsguy

Fantastic achievement! This post made me wonder what I did wrong so that newbie---> expert was an year for me, sadly.

Maybe you are very smart!

Or maybe your practice method is amazing!

Or maybe I am just dumb :((hopefully it is that your method is amazing!)

→ Reply

5 days ago, # ^ | +16

harshilbhatia2001

Thanks , i hope i can get to purple soon .

→ Reply

5 days ago, # ^ | ← Rev. 2 -46

Sixpathsguy

Well, at the enormous speed you are progressing, (gained around 500 rating points in a month), even if your growth rate decreases a little to maybe 400 or so, still it seems 1100 ----> 1600 ---one month--> 2000 ----one month---> 2350----->2700!! ??

At this rate, in an year you might be well above even red!! Amazingly smart you must be, lucky guy!

I wish intelligence was distributed a bit evenly :(but sometimes it seems some people keep struggling whereas others grasp stuff lightning fast!

→ Reply

harshilbhatia2001

5 days ago, # ^ | +9

I don't think my progress will remain that fast , and i yes i might've gotten lucky in the past few contests but i think it will take me a good amount of time before i get purple

→ Reply

tuwuna

5 days ago, # | +23

I started watching algorithm and math lectures and tried doing courses on data structure and algorithms but none of them actually helped me in the beginning. I am not saying they weren't good but you actually do not need them in CP

Totally agree, learning algo while you can't even solve easy problems.

This is why 50% of people are not expert

→ Reply

v-O_O-v

5 days ago, # ^ | +8

UwU

:orz:

→ Reply

sc0ut

5 days ago, # | +81

I believe that this achievement("Newbie to Expert in a month") has happened by luck. First came the Div4 round, which put you in specialist, then a Div3 round, which put you in Expert. I don't think that you'll remain in Expert consistently("at your current level"). You might remain, if you practise harder problems and perform well. This is just my opinion.

→ Reply

bobbilyking

5 days ago, # ^ | +2

i remember in an old cf blog that experts (that are on the 1600-1700 spectrum) can solve A-C relatively easily and D like 50% of the time, which is what this guy has shown in his last several div2 contests. so to say that it's all luck is kinda disingenuous, he deserves at like the very least 1500 rating (Although i do agree this last div2D was easier than div2C like what?). this guy pulled out some insane inner genius to go from newbie to expert in such a short timeframe tho

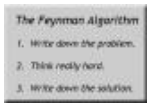
→ Reply

back_to_code

4 days ago, # ^ | ← Rev. 3 +1

I thought saying that would be too rude. But you did that anyway. But he did 4 questions in yesterday's Edu. Round. Haha Surely he will go up.

→ Reply



Colossus20

4 days ago, # ^ | 0

But C1 and C2 were google questions.

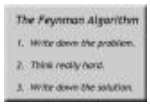
→ Reply

back_to_code

4 days ago, # ^ | 0

Did you do them? Not everyone googles. I didn't. I was able to do only A,B,C1. Also even if he is not good at hardcore CP he might be good at spotting patterns.

→ Reply



Colossus20

4 days ago, # ^ | +5

I was busy during the first hour of the contest, so I did not participate. Also, I just read C1, C2 and D to see I could solve them in constest and it was pretty obvious at first glance that C1 and C2 were googleable questions which I think is pretty sad.

I don't really care about this guy rating I was pointing out that the last educational

I don't really care about this guy rating I was pointing out that the last educational round was not a regular one.
→ Reply


back_to_code

4 days ago, # ^ | 0

Ok cool.
→ Reply

samartharora17

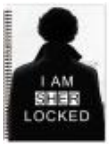
5 days ago, # | 0

Amazing achievement... The rate at which you're growing at is astronomical! Keep up the good work. Also , I'm excited to try out the problem categorisation method you advised. Hopefully I can progress to blue.
→ Reply

sapjv

5 days ago, # | -15

Would you like to say something about about ruban's efforts ?
→ Reply



tanmay2625

5 days ago, # ^ | ← Rev. 2 +10

Get a life dude..focus on your yourself rather than calling out someone's name!
→ Reply


at_kansal

5 days ago, # | 0

Thank you for this blog. Keep writing such good content.
→ Reply

kingkong1

5 days ago, # | -26

Or a simple trick that most Indians follow : Solve in a group of 5. Everyone will be blue lmao
→ Reply

The_Clown_th...

5 days ago, # | +1

How many problems did you solve daily on an average basis in the month in which you became expert ?
→ Reply


aninh

5 days ago, # | +1

Thank you. I am very new here. I was confused how to get started. I just needed this. thank you again.
→ Reply


Perdente

5 days ago, # | +1

Very inspiring post.I finished a2oj ladder 11 (<1300).What should I do next?Do I keep solving ladder 12 problems or just keep going on the contests and approach for a and b?
→ Reply

harshilbhatia2001

5 days ago, # ^ | -13

i did a2oj ladder based on problem code , so maybe you should also focus on that and finishing 100 problems of the same level shouldn't be your goal , try doing problems that are a little bit difficult than your current ones
→ Reply

5 days ago, # | +1

Wow your progress is really amazing. It took me a year learning CP and 3 months participating codeforces contests to reach

maitandat03

Wow your progress is really amazing. It took me a year learning CP and 3 months participating codeforces contests to reach expert.
→ Reply

ashutosh.pal.phy16

5 days ago, # | +1

Hey bro. I looked at your rating graph and am really impressed. I myself have been trying to reach the expert level but my rating is fluctuating in the green zone from quite a time now. Currently in practice mode usually I am able to solve problems with 1600 rating. Problems harder than that are solved very few times. What is your suggestion to reach the expert level or in other words being able to solve at least 4 problems in div 2 contests. I need to reach this level in about 1 month. I wanted more details on how to proceed.
→ Reply

Gabriel.Candeia

5 days ago, # ^ | ← Rev. 2 +4

Hi, I looked at your rating graph and noticed that your situation is very similar to mine. I spent two years trying to reach specialist for the first time, after that it took me a month to reach expert. To go from pupil to expert all I did was try to consistently solve div2 ABC or div3 ABCD. Also, to select questions I mainly used discord bots.
→ Reply

ashutosh.pal.phy16

5 days ago, # ^ | +1

Thank you Gabriel. How about giving virtual contests daily? Also, manually searching for previous unsolved contests daily is too much. Does anyone know of how to do it effectively, or someone who holds daily virtual contests/mashups?
→ Reply

harshilbhatia2001

4 days ago, # ^ | 0

I think you should create your own mashups as you know where you lack . Mashups in my opinion shouldn't be similar to regular contest instead should have all the problems of a similar level and maybe one harder problem.
→ Reply

harshilbhatia2001

5 days ago, # ^ | +3

Try using a2oj ladder for finding problems , practicing problems marked C or D in a div 2 contest. And do not spend too much time on a problem if you have no idea how to proceed it's better to leave that problem for now and come back later . Try creating your own mashup containing b and c problems and doing virtual contests that will boost your rating as if you could easily solve problems around 1600 in practice the reason your rating isn't increasing could be lack of timed practice
→ Reply

arvindr9

5 days ago, # | +6

This is inspiring! I'm sure you must've put in a lot of effort over that month for your rating to increase that much. Good luck!
→ Reply

akash_3135

5 days ago, # | 0

thank you so much !!!!!!
→ Reply

__Vegeta__

5 days ago, # | +16

Looks like someone really utilised the lockdown. Congrats
→ Reply

5 days ago, # | ← Rev. 2 0

Hey, Thanks for your blog Harshil

avi.kasliwal

Hey, Thanks for your blog Harshil.
Harshil to reach to specialist and then to the expert what level [in terms of points] of questions should I practice?
Will GfG, InterviewBit, LeetCode help to first get to a specialist?
→ Reply

harshilbhatia2001

4 days ago, # ^ | ← Rev. 2 0

To reach specialist solving 1400-1500 problems (most of them) will easily be more than enough and getting to expert from their can be achieved by solving 1600-1700 problems (usually).I never personally did Interview bit but gfg and leetcode are useful resources . But again leetcode is made for interview purposes not competitive coding purposes keep that in mind while practicing
→ Reply

harshilbhatia2001

4 days ago, # | 0

Thank You for such a positive response , a lot of people have been messaging me with their queries and fortunately their is cap on the number of distinct people i can reply to hourly and daily , so i'm sorry if i couldn't reply please post it again in the comments , and that would also help other people having the same queries. Thanks
→ Reply

4 days ago, # | ← Rev. 4 0

I also had an almost same approach and managed to reach expert from newbie in 40 days. I too think that many beginners focus too much on learning new stuff than practicing what they already know.

yash_daga

The stl which I found most useful for reaching 1400+ was map/set/vector other than that one only needs to know basic algorithms like seive, sorting and binary search to reach till 1500 also a bit of speed which can be acquired through practice. One of the most difficult things beginners have to overcome is the fear of rating drop as it is inevitable in the beginning(unless you have strong maths background).

Once you start giving contests regularly and upsolve A,B and C your rating will surely go above 1600 soon. I don't think I'm eligible to advice people who have rating higher than that as I'm myself not much above 1600 .

Lets hope all of us come out with much better skills when this quarantine ends :)
→ Reply

sr4saurabh

4 days ago, # ^ | 0

ahh,we both have same dp's! but our colors are different. xD. I am stable 1400 now. I have solved around 300 problems but still it is not working for me.Can i know how to improve my quality over quantity?
→ Reply

yash_daga

4 days ago, # ^ | +1

I think giving virtual contests and upsolving upto C would be a good idea also while practicing you could add rating filter 1000-1500 without any other tags.
→ Reply

sr4saurabh

4 days ago, # ^ | 0

yeah,thanks! i ll try.
→ Reply

harshilbhatia2001

4 days ago, # ^ | +1

The number of problems you have solved doesn't really matter , you should solve problems that you find hard . I would recommend work on your week points first (filter problems using tags) and then try solving problems that you couldn't do before in a timed fashion that would help you .
→ Reply

4 days ago, # ^ | 0

yep after reading many blogs I have started to find out what sort of problems trouble me and

sr4saurabh

yep,after reading many blogs I have started to find out what sort of problems trouble me and then on same concepts I am working.Hope, at least this works out. By the way thanks for the advises above!

→ Reply

4 days ago, # | ← Rev. 2 0

Um it depends from person to person too. I have been solving 1400-1500 questions and 1600-1700 questions as well. I think practiced nearly as enough as you did but I happened to just touch 1400 recently (after 2 months of practice)

Nice tips. My strategy happens to about similar.

Also an addon to a possible reason for WA (which is kind of silly and happened just yesterday with me..) Sometimes you may end up writing something extra in the code which may cause it to fail it at some testcases (where they shouldn't normally)

sayan_244

So besides handling corner cases that can happen too. So I have been focusing more on speeding up my B solutions and try writing them efficiently against previously where I used to consider B as not so important and as something to be taken care of quickly and move towards C. (This is for maintaining the stable 1400+ range. As mentioned you only need to be able to do A and B fairly fast with/without needing to do C)

(My math background isn't so strong so I am pretty sure that's holding me back too as someone just mentioned in the comments)

→ Reply

chen-.-

4 days ago, # | 0

Thanks for sharing! I think my biggest problem is too slow to finish a problem. Actually I can do some 1500 or 1600 problems but its too slow for a 2-hour contest. Does this mean my proficiency is not enough?

→ Reply

harshilbhatia2001

4 days ago, # ^ | 0

I don't think that has anything do with proficiency , and if you can regularly solve problems of rating 1500-1600 just try solving them fast enough , you will be up in cyan / expert in no time. For solving fast enough try practicing under time constraints.

→ Reply

chen-.-

4 days ago, # ^ | 0

I see,thx!

→ Reply

ubc_123

4 days ago, # | ← Rev. 3 +24

Congrats. Increased participation due to COVID-19, this might be one of the reasons why. I can see the volatility in my rating curve as well.

→ Reply

rustam_habibulla

4 days ago, # | 0

Awesome approach indeed. Thanks for sharing. I want to ask one thing — while practicing 1300-1400 questions a lot of problems has "data structures" tags, but you did not mention them. Also, most of the time DIV2C and DIV3D involve some kind of data structures. Did you learn any of them? If yes, which ones you found useful?

→ Reply

harshilbhatia2001

4 days ago, # ^ | ← Rev. 2 0

Learning stl and practising questions on Manipulating Data structures is important because even when i could think of the approach a lot of times i would not be able to correctly implement like using a bunch of arrays where a map would have solved it easily , not using sets and queues in my code ,etc __

I actually forgot mention this in the tags . PS- u only need to learn stl and maybe BIT for now ,but you don't need to know how sets,maps are implemented .

→ Reply

prajwal_sonawane_IT_pict

4 days ago, # | 0

Please go and see my profile, whatever you said motivated me because my stats are as like you and I want to reach expert as fast as possible...your efforts for writing this blog are appreciated

→ Reply

umang__

4 days ago, # | 0

Thanks for your post.This time for me it's very motivating:)

→ Reply

rohit7s

4 days ago, # | 0

Thanks **harshilbhatia2001**.

→ Reply

TOXIC_MSA

3 days ago, # | 0

Thanks , it was really inspiring for me.

→ Reply