Preparation for Placements

Aditya Vidhate

July 6, 2019

1 An Overview

Placements are, without doubt, one of the most important times to a majority of Engineering students for obvious reasons. With hundreds of people competing with and against you in a cut throat fight to grope the largest package, things are bound to become bat-shit crazy. There is no foolproof way of going through placement season successfully. It is a game. If you know the rules and loopholes, you will be a player with good and long health. If you don't know the rules and come ill prepared, you will lose your health too soon and be put under the risk of being thrown out. Your goal in such a game should be to maintain a perfect balance, do what is necessary, know the rules and prepare for the worst, and hopefully you will have a fun experience!

The process usually begins with making a CV. You need to have an airtight Resume (more on this later). You'll then apply with your Resume to whatever companies come for campus placements via an online portal. You will have to appear for the online coding round which is your Level 1 of the game and where most of the people will fail. After you have cleared this level there can be any number of technical levels from 1 to 4, sometimes even 7, where you will be rigorously tested on your technical knowledge. Usually the last level is the HR round. This looks the simplest of all, but some of the smartest of people have failed this and gotten rejected. Treat the HR like the final Boss. The boss level. The boss is not always smart in technical knowledge, and you may dismiss her/him as a mere formality, but they are the boss and their judgement is above everything and everyone else. This is one level for which you need to master the toughest of all skills - Soft Skill (more on this later).

The biggest factor that you need to keep in mind before you enter this game is unfortunately, *Luck*. Your interviewer is bored after an entire day of interview and doesn't want to listen to your stupid face, your interviewer might want to poop urgently and dismisses you before listening to you fully, your interviewer's girlfriend accepted his proposal for marriage after a week of readzoning him on WhatsApp and he is happy and approves you immediately, your interviewer missed her flight and now your interview is at 2AM with a sleep deprived interviewer who hates you before she has seen you, you get the exact question in coding round that you studied before entering the hall, you

1

get the exact question in your coding round that you skipped studying before entering the hall. There is one thing common in all of these scenarios - they are all **equally probable** in your placement season. Anything can and will happen. You need to make yourself luck-proof to survive this game, and also learn to take everything with a light heart to remain sane by the end of the week.

I have compiled a (hopefully) wholesome document to guide you through this Game. It is by no means the only way to go and I am by no means the most successful player. My only hope is that you gain something from it that you didn't already know, and that it soothes you if you are too worried about your situation.

All the best.

Let's begin!

2 An Airtight CV

I have read innumerable articles on CV making and the one advice which I found the most helpful is from these 2 pages taken from the book "Cracking the Coding Interview" by Gayle Laakmann McDowell.

Remember the following points about your CV/Resume-

1. This one piece of paper will represent you entirely. Make it meaningful. I have seen recruiters spread 15 CVs on a desk, graze through them and select 4 within 40 seconds. You need to be in those 4.

2. It should be in the most distilled form. Meaning every single word on your CV should have a purpose because of which it exists there, even "and", "to", "a" and "the". If you have words which you can do without, erase them.

3. Zero room for error. Be it grammatical, spelling mistakes or technical. Proof read your CV 10 times. Make 10 other friends proof read your CV. Make me proof read your CV.

4. Don't trade space of Technical Projects to mention Extra-curricular activities.

5. Technical details like mentioning the RMSE from a regression study you have done will go a long way. Mention wherever possible. Don't forcefully put in numbers just for the sake of it.

6. It is perfectly alright if your CV doesn't fill an entire one page. Having a short but firm CV is preferred over a long unsure one. (I got placed on a CV that did not fill one entire page)

7. Remember that you will be scrutinized over every single thing that you mention on your CV. Be prepared to answer questions to any depth about whatever you have mentioned. Vice-versa, mention things about which

you can answer to the deepest core. If you are even one bit unsure, erase it from the CV.

8. Optimum number of projects to mention is 3. Have a hard upper cap of 4.

9. If you are sitting for different types of job roles (eg: Data Science and Software Dev Engineer), I would advise you to maintain 2 different CVs, each prioritising the work done in that specific field.

3 The Coding Round

By now you should've gotten used to coding fairly well. By "fairly well" I mean the following-

1. You should be able to perfectly accept input and produce output in any format given/asked.

2. You should have experience using STLs from C++ and you should be perfectly skilled in using C++.

3. You should be able to get at least Brute Force solutions to problems that you encounter

4. You should have made decent progress on interviewbit.

If you do not qualify towards any items from the above list, it is perfectly ok. Begin immediately, pull all nighters and unleash your beast mode. Do as much as you can, as reliably as you can. Make sure your knowledge is air tight. Don't leave gaps/confusions in any concept.

In my opinion, you should also begin-

1. CodeForces as soon as possible.

2. Don't begin randomly. Start following a2oj Ladders. These provide the best systematic approach towards CodeForces.

3. You should be able to solve Div.2 B without breaking your head.

4. You should start attempting Div.2 C which will give you a great exposure to Dynamic Programming problems, which is a very very important concept frequently asked by Interviewers.

5. Try to reach 20 in Div2B ladder and at least 10 in Div2C.

6. More importantly, start registering for CodeForces Div.2 contests and try to solve A, B and C problems within the given time. This will warm you up very well to what is asked in the coding rounds of company placements.

You should be very nicely skilled in coding. This is your ticket to clearing Level 1. There will be many smart people in your batch, but this is the first step where you can beat them. The Coding Round.

1. Remember that you will have a strict time limit on solving the given questions and a strict time limit in which each of your code should get solved.

2. Expect 3 codes in general with at least one being a tough one and hence carrying a bigger weightage. Your goal is to maximize your score **and** attempt the tough one as nicely as you can.

3. Remember to not get stuck in a difficult question. Time is precious.

4. **Think before you code!** Read your question properly. Understand what is asked of you. Usually if a total count of something or total number of solutions is asked, beware you don't have to find every single solution, which means this is most probably a DP problem. Gather such hints.

5. If you don't get any crack at the problem solve the bruteforce first. No crack till the end? Code in the bruteforce. A few initial testcases will get passed and you will have some score which is better than 0 score.

4 Technical Round

After you have successfully cleared the coding round, you will be gathered up along with other dicks like you and made to sit and wait in a room till the interviewers arrive and get ready to whoop your ass one at a time. The technical round is the real and only challenge in the game that you can beat by working hard. If the company is sane, and really wants to recruit good people, this round will depend least on luck. If you study well and if your knowledge is good enough (no one is perfect), you will have the ball in your court. These videos are a must watch.

Technical preparation for the interview round should be as follows-

1. Make sure you have gone through all the previous year questions of the company whose interview round you are sitting for. GeeksForGeeks will be your best friend in this.

2. DSA and DAA will be the most asked questions. You will be given a problem that you have to solve very elegantly using beautiful data structures and cute algorithms. Approach is more important than solution. Start with Brute Force and build your way to better $O(f(n))$. Watch the referenced videos linked above to get a very good idea on this.

3. Have your knowledge of Graphs and Trees well sorted in your mind. These are some of the favourite questions of interviewers.

4. Dynamic Programming, DFS, BFS should be at your fingertips.

5. If you can't optimize your code any further, think of Hash Maps. They can help you in the most difficult times.

6. You should have squeaky clean knowledge of OOP concepts and you should have tried at least 10 different Object Oriented Design problems before. This problem can be as absurd as - create BookMyShow (I was asked this in one of the interviews. Lasted 45 mins.) For this you should have the correct way of defining classes, objects and functionalities.

7. Know the difference between Objects in JAVA and Unions in C. They are very similar indeed. Also know why you need Objects when you have Unions.

8. A sound overview knowledge of OS is desired. Virtual Memory, Multi-threading, Multi-processing, Scheduling, Memory Management, Page faults etc. Have at least a general idea of all of this.

9. Networks is possibly the least priority subject of all, but knowing the basic concepts keeps you on the safer side.

Other miscellaneous preparation is as follows-

1. Buy lots of packets of your favourite biscuits. These will be your stomach's best friends during the interview rounds. Rounds last for hours without food breaks and if you don't want to faint, these packets are your saviours.

2. Wear good formals. Don't be shabby. Also don't overdo it. It is a necessary criteria, but in no way a decision making one for your interviewer.

3. Be relaxed and comfortable. Don't get blank in front of the interviewer. Take a chill pill and pat yourself on the back for getting this far.

4. Have a good perfume/deo. Don't stink even if the interview is at the end of the day.

5 Boss Level: HR Round

First rule of HR round is to never underestimate the HR round. You have not won yet. This is the last obstacle in front of you and you **have to** crack it after getting this far.

1. The goal of HR is to see if you are fit to join the company and if you can work cohesively in a team. If you are convincing on these fronts, it should be enough.

2. You need to be in your best presentation mode for this round. Good formals, perfect etiquettes, good posture while you sit, confident answers about yourself without being inappropriate and without showing yourself in an incomplete light. Be smart. Be witty. Win it.

3. Questions like - "Tell us about yourself", "Where do you see yourself in 5 years?", "Why do you want to do a job?", "Your CV is Data Science oriented but you are being offered SDE. Why do you want to compromise?" etc. will be asked in this round. Diplomatic answers are not going to help you. Prepare for a few of these. Have firm answers to all of their "Whys" and be convincing. Take a stance. Give an opinion without making a ruckus.

4. You will also be question on your extra curricular activities here. Be sure about your "Why did you do this?" question.

5. A good presence of mins is the key in this round. Sometimes the HR would want to get you talking so that they can judge you. Talk more and express more if you can take the hint. On other times the HR might want to be to the point and have very specific questions. Know when to keep it short and crisp and when to elaborate.

6. As you may have already understood, this round depends on your understanding of the situation around you and how much presence of mind you can show both of which are subjective. Confidence and calculated honesty is the basic key.

6 Mental and Emotional Health

One of the biggest problems during the placement season is to your mental and emotional well-being, which is of utmost importance during these few days. What usually happens, and what you have to try to avoid, is that you get rejected from a certain interview and that depresses you because maybe you feel you are not good enough, which spoils your performance for the next interview, which reduces your chances of successfully cracking it because you are not at your best, which leads to rejection and before you even realise it you are stuck in a vicious poisonous cycle of emotional damage and mental stress at the most important time of your college life.

I know you probably think that this will not happen to you because you are stronger. But in my experience this is inevitable. It happens to the best of us and you should prepare for it with a few simple steps-

1. Always remember the golden rule of the game - a lot of it depends on your luck. If you didn't get selected through an interview, fuck it. You had a bad luck. Don't fret.

2. Try not to compare yourself with other people who crack interviews successfully. There will always be one guy who you feel got through unfairly and you deserved it much better. It is ok. The placement process is not perfect. Forget it. Move on.

3. Have a group of close friends who can joke and laugh it off with you after every bad experience. Friends will be your life support during these times.

4. Take a small break. Play Frisbee for a while. Get your mind off it. But after you are done, get back to sharpening yourself again. Make sure you don't make the same mistake again. You have to get it the next time.

5. If you get placed, don't over-brag in front of your yet unplaced friends. Keep it low. Let your entire group get placed. Your party can wait a week longer, but your friend being depressed is a much worse cost to pay.

6. Sleep well. Don't stay up for too long hours and compromise your performance for the next day. Interviews might begin as early as 7AM and end as late as 2AM. Have the mental stamina to last long.

7 My Story

My background is a dual major is Physics(MSc.) and Computer Science(B.E.) and since forever I was passionately driven towards Physics without having ever considered making a career in Computer Science. Because of this, I never took any step towards placement. No competitive coding experience; Scored B- in all important courses like DAA, DSA and DiSCo; Never participated in hackathons/online coding competitions/ACM-ICPC/GSoC. It is fair to consider that I begun at the bottom of the pile when it came to placement preparation. I started my prep properly only 1 month in advance.

I got placed in the Dream Week at SymphonyAI with a package of 18LPA CTC (12L-14L in hand) and it was a thrilling, depressing and exhausting experience.

The first few companies were way out of my league. I only started clearing my level 1 after the 3rd company came in, where I couldn't clear my interview rounds. By the 3rd or 4th day of placement I started making it to the final rounds.

The first job offered to me was by ServiceNow (21LPA CTC) wherein they made it very clear to me that I won't be allowed to experiment on my own with the things I will have at hand. I (indirectly) declined this offer in favour of a company which I loved a lot - Joveo. Joveo took about 5 Technical rounds that lasted till 1:30AM with the last technical + HR interview taken by the CTO himself. At the end they chose just 1 guy out of the 3 of us and it wasn't me. It was an enormous leap of faith I took by letting go of ServiceNow and it backfired majorly.

After 2 more days of toiling, depression, exhaustion and losing good companies because of under-performance, I finally got placed with a firm whose purpose I truly believed in - SymphonyAI. I had one technical round for Data + Software development profile that lasted about 30-40mins and one HR round that lasted about 45mins.

The very next day I flew away from college to Bangalore, where my research thesis in Astrophysics began.