

Team Reflection

Before our first contest, all three of us had never met before. To help break the tension of working with a group for the first time, we had decided to meet the night before to go over some of our strengths and weaknesses we have as individuals. We had also picked a name for the team: Mell's Meat Heads.

Contest 1 (3/8): The contest for this week was focused on network flows. This was the guinea pig week as we were getting our bearings of how it would be to compete in a team setting with only 2 computers at a time. Person A made quick work of the easier problems in the contest while Person B and Person C focused on other questions in the contest. Once the problems were sufficiently thinned out, we all started to work on individual problems until we had questions to ask each other regarding our problems. Person C spent most of their time working out the permutation problem, making quick work of what the trick to the question was but was coming up with a wrong answer (turned out to be missing a simple case for certain digit orientations). This put the group back some but Person A and Person B made great progress on the rest of the questions.

Contest 2 (3/15): In this week's contest, we had one contest together under our belt, but the strategy was still quite vague since we didn't have the time to communicate and review information prior to the contest. Person A has been taking care of the hardest questions contest since Person B and Person C have more difficulty getting codes to run. After the questions this week was alright in terms of difficulty. Dynamic programming is Person A's second language after English, so he solved most of the questions that required DP, while Person B and Person C spent more time with coding questions that are more simple to solve, offering their input on the DP problems when they could.

Contest 3 (3/29): Just like the week before, the topic of the competition this week was Dynamic Programming. Because of this, Person B made progress with his knowledge on DP but the strategy was still very similar to the week before with Person A working on the majority of the DP problems and Person C and Person B working on the other problems and offering their input where they could. After the competition, most of the problems were solved over the weekend through discussions on Discord on how to solve them.

Contest 4 (4/5): This week was a challenge for the team since 2 members weren't able to attend the Friday competition. However, as the sole member remaining, Person A worked through the problems methodically, ultimately solving all but one. This was mainly due to the fact that the majority of the questions were relatively straightforward algorithm implementation questions with

minor twists. Additionally, Ethan had an advantage because he had seen two of the questions

(forest and sushi) while attending programming contests as a guest a couple years ago.

Contest 5 (4/12): This week's contest was on binary search, and most of the harder problems involved utilizing this technique in a unique way. After the easiest problem was solved, we split out efforts in reading and approaching different problems. Person B took on the "Need for Speed" problem, Person C started working through "Bullseye", and Person A began work on "Jumpman". Throughout the contest, there was more communication than in previous contests, but we still had a tendency to get stuck on each of our specific problems. Further on in the contest, we had a couple solutions that worked on the example data, but were getting "wrong answer". The last hour consisted of some collaborative troubleshooting for Person C's solution for "Bullseye" and Person A and Person B eventually finding the DP solution for "Tri graphs". Listening to the hints after the contest was helpful, and we were able to upsolve two additional questions immediately after the contest.

Contest 6 (4/19): This last week there was some slight progress on the team by Person B pushing more questions during the competition, as well as better communication with the entire team members. Person C was able to help to decipher a code algorithm for a question that was difficult. As a team we learn how to push more and learn how to dynamically make the team more effective by figuring out each other's strengths and exploiting them. Person B is really good at coming up with ideas on how to solve a problem, Person C is extremely great with logic and edge cases, Person A is the goat of the team by making the hardest questions look easy and having the most extensive passion for coding.

In the first contests, we didn't communicate very effectively and didn't have the best contest strategy, which made it harder than it needed to be. Every contest since then has increased our confidence and ability to work as a team, but there are still some areas we could improve in. A large part of our struggles have been due to balancing the various strengths and weaknesses of each team member, but in recent contests we have been figuring it out.

Instead of getting stuck on each of our own problems, time is better spent by bouncing ideas off of each other and uncovering misunderstandings. Problems with the most certain solutions should be coded early on in the contest, while the team slow-cooks solutions to the harder ones. Communication is key in both parts of this process; team members need to deliberate which problems are worth attempting, while also collaborating to work out the harder ones.

The way we will prepare ourselves for the final is to refresh our learning, to have clear roles for the day on how to make the entire coding competition more smooth and to allow Person A to make magic with the hardest questions, while Person C and Person B push through and test the easy problems and share ideas.