F. University 621

Chapter 621: Without Me, Bin, Programing Would Be in Eternal Darkness

Europe, Zurich, Switzerland, 2 PM.

The ACM International College Student Programming Competition officially kicked off at the Central Sports Stadium in Zurich. The competition is hosted by globally-renowned computer research institutions and sponsored by globally-renowned computer brands.

It can be said to be the most influential competition in the computer field among college students.

Countless genius researchers in the computer field have participated in the ACM International College Student Programming Competition.

Even the deputy head of the globally-renowned computer brand sponsoring the ACM International College Student Programming Competition, once participated in the ACM competition.

Entering the 1990s and the 21st century, the ACM International College Student Programming Competition continued to expand due to sponsorship, and the number of participating universities increased from a few dozen at the beginning to hundreds or even thousands.

Of course, after these thousands of universities registered for the ACM International College Student Programming Competition, they would all undergo certain selections in their respective competition areas.

The universities that finally made it to the global finals stage are the most top-tier ones.

Ding Yue quickly looked at this year's finals roster -

Imperial Polytechnic University

University of Chicago

California Institute of Technology

University of California, Berkeley

Nanyang Technological University

Haicheng University of Transportation

Moscow State University

Swiss Zurich Federal Institute of Technology

St. Petersburg State University

University of Melbourne

Looking at this list, which one isn't a globally-renowned university?

And the computer science strength of each of these universities is very strong, both in terms of teaching ability and in terms of research ability.

Of course.

The fact that Ding Yue's Computer Science Faculty of Mist City Arts and Science University can participate in the ACM competition finals with these globally-renowned universities indicates that Mist City Arts and Science University has the opportunity to become world-class in computer science.

Now it depends on whether Xu Bin, Chen Jun, and Ouyang Chen can deliver.

If they become famous in the ACM competition, the computer science major of Mist City Arts and Science University will be a major choice for many domestic students who love the computer field. In September next year's admission, I'm afraid, the enrollment of the computer major will surge.

However, Ding Yue is still not clear whether Xu Bin and his team can blast a bloody path out from today's smokeless battle.

After all, up to now, Ding Yue has already given all the buffs in their respective professional fields to Xu Bin and Chen Jun.

Even if they start revising now, it would be useless.

So Ding Yue is simply waiting quietly for the performance of Xu Bin, Chen Jun, and Ouyang Chen during the competition.

Ding Yue also looked at the competition rules of the ACM International College Student Programming Competition.

Each competing team from each university will use one computer and need to use a language such as C/C++, Java or Python to write programs to solve 7 to 13 problems within the total competition time of 5 hours.
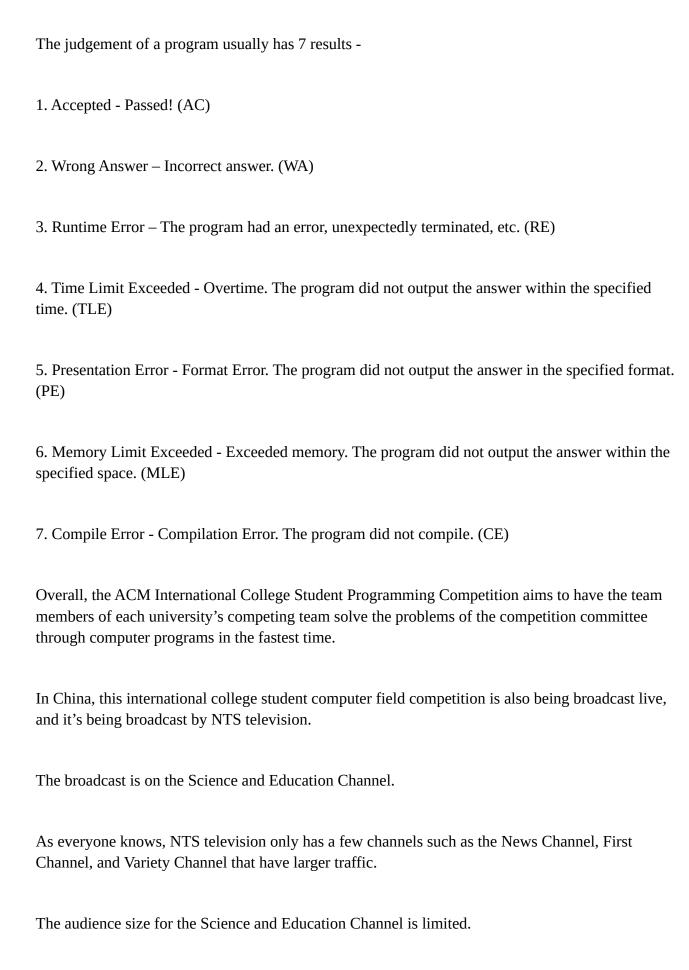
After the team's program is completed and submitted to the judges for running, the results will be determined as either correct or error and promptly notify the team. Interestingly, after each team correctly completes a question, the organizer will raise a balloon representing the color of the question at its position. The first team to solve each question will receive an additional "FIRST-PROBLEM-SOLVED" balloon.

The final winner, or the overall champion, is the team with the most correct answers and the shortest total time.

In the competition, each question's time will be counted from the beginning of the competition until the question's answer is determined to be correct. In the meantime, each time the running result is judged to be wrong, a penalty of 20 minutes will be added.

During the 5 hours of competition, there are usually 7 or more questions that need to be completed by the three members of the same team using the same computer. After solving a question, they will submit it to the judges who will determine whether it is correct.

If the program runs incorrectly, it will be returned to the team, which can modify it and resubmit the question.

The judgement of a program usually has 7 results -

1. Accepted - Passed! (AC)

2. Wrong Answer – Incorrect answer. (WA)

3. Runtime Error – The program had an error, unexpectedly terminated, etc. (RE)

4. Time Limit Exceeded - Overtime. The program did not output the answer within the specified time. (TLE)

5. Presentation Error - Format Error. The program did not output the answer in the specified format. (PE)

6. Memory Limit Exceeded - Exceeded memory. The program did not output the answer within the specified space. (MLE)

7. Compile Error - Compilation Error. The program did not compile. (CE)

Overall, the ACM International College Student Programming Competition aims to have the team members of each university's competing team solve the problems of the competition committee through computer programs in the fastest time.

In China, this international college student computer field competition is also being broadcast live, and it's being broadcast by NTS television.

The broadcast is on the Science and Education Channel.

As everyone knows, NTS television only has a few channels such as the News Channel, First Channel, and Variety Channel that have larger traffic.

The audience size for the Science and Education Channel is limited.

At this time, it's 2 PM in Switzerland, but it's around 9 PM in Xia Country.

The Science and Education Channel of NTS television is broadcasting the ACM competition via satellite. Although the pictures are a bit slow to sync, it at least allows domestic viewers to watch the competition.

"Xiao Zhang, have you noticed that this year's ACM competition has several tens of thousands more viewers than before?"

Chapter 622: Without Me, Bin, Programing Would Be in Eternal Darkness

The staff at the National Television Station 's Science Education Channel, who were in charge of broadcasting the ACM competition, couldn't help but share their shock with their colleague Xiao Zhang after checking the backend data.

"Really?"

Xiao Zhang was quite surprised to hear this.

In previous ACM competitions, the number of viewers was basically fixed, fluctuating mostly around five thousand.

But did his colleague just say that the audience suddenly increased by tens of thousands this year?

So Xiao Zhang went to check the viewing data for the ACM competition being broadcasted live on the National Television Station 's Science Education Channel.

Indeed, there were more than 20,000 to almost 30,000 more viewers.

It's important to realize that if one wants to watch the ACM competition live, they have to tune into the Science Education Channel on the National Television Station website, as only the National Television Station's Science Education Channel broadcasts the ACM competition.

So, for the National Television Station, counting audience data is quite simple.

However, what Xiao Zhang and his colleagues completely didn't know was, where did these two or three extra tens of thousands of viewers come from?

It couldn't be that the audience size was fixed in the previous years and suddenly surged this year, could it?

At this moment, far away at Mist City Arts and Science University.

Many students there make up the audience that Xiao Zhang and his colleagues at the National Television Station couldn't account for.

The students of Mist City Arts and Science University knew that the ACM International College Student Programming Competition would begin around nine o'clock tonight.

Although Principal Ding and Director Xu were in Switzerland, Europe, the students of Mist City Arts and Science University spontaneously organized themselves to watch the live broadcast of this event.

Since only the National Television Station's Science Education Channel would broadcast the ACM competition, everyone flocked to the official website of the National Television Station's Science Education Channel tonight.

Although the ACM International College Student Programming Competition doesn't get much attention outside of the computer science circle at universities.

For every student at Mist City Arts and Science University, this is an event worthy of their attention, not just for students in the computer science department.

Because if their Alma mater, Mist City Arts and Science University, could get a good result in this competition, the social status of Mist City Arts and Science University would obviously be enhanced.

Most importantly, every student at Mist City Arts and Science University has a strong sense of honour and humiliation. The honor of the school is also very important to the students.

Who can ignore the fact that the place is their second home?

In the Zurich Central Stadium, the final competition teams from a total of 34 universities worldwide have all taken their places.

Ding Yue, Huang Youjie, and secretary Wen Ruohan are in the rest area for Xia Country's participating universities, watching the competition progress.

On the field, there are 34 universities, each with a competition team of three people.

Because the competition rules allow for a maximum of three members, each college must choose three contestants. After all, with more people, solving the program will naturally be more efficient.

"Chen Jun, you'll be responsible for the analysis of each question. Ouyang Chen, you will assist Chen Jun by providing whatever help he needs, and I'll take care of writing the program!"

Xu Bin made a clear division of labor for this competition.

Because the ACM competition is about efficiency, the faster the team solves the problem, the closer they get to the champion's seat.

And each team is only provided one computer for answering the questions.

Given this, Xu Bin has allocated the responsibilities: he will control the computer and write the program to answer the questions, while Chen Jun and Ouyang Chen can focus on analyzing each question.

In the 5 hours of competition time, the team which answers at least 7 questions or more in the shortest time wins.

So the coordination and efficient division of labor among the three members are very important for this competition.

"Sure, Director Xu, I will analyze the problem in the most concise way to enable you to answer as efficiently as possible."

Chen Jun nodded seriously and assured.

Ouyang Chen also nodded his agreement. Although his work was the "simplest", he would not relent a bit.

Because Ouyang Chen knew very well that he is an indispensable part of the team. He must do his best to assist Chen Jun in analyzing the problems to achieve the best result for the team.

In the whole team, Xu Bin's job is apparently the hardest because he needs to write the program to answer the questions after Chen Jun and Ouyang Chen analyze them.

Of course, if there are any difficulties during the answering process, Chen Jun and Ouyang Chen will also play a crucial role in Xu Bin's braintrust.

In fact, most of the participating colleges' team work distribution is basically the same as Xu Bin's.

The details may vary, but distinct division of labor is a must.

Xu Bin would never underestimate his opponents, as they were all from the top computer science universities around the world.

To say that the 102 competitors from the 34 teams on the scene were all computer science geniuses wasn't an exaggeration!

Indeed, it is so!

[National Television Station Science Education Channel Live Room] -

"I see our Xia Country's university team, Haicheng University of Transportation."

"Haicheng University of Transportation has once secured the champion title in the ACM competition multiple times. They are indeed our country's largest hope to win."

"This year Moscow State University and St. Petersburg State University are also participating, both of which seemed very strong in recent years."

"True. In the past few years, the overall championships were clinched by Moscow State University and St. Petersburg State University. But, think about it, their previous participating teams have graduated, right? Can the new teams continue to carry the championship banner and defend their titles?"

"Hahaha, I see our Northwestern University of Science and Technology!"

"To be honest, it's quite surprising that Mist City Arts and Science University managed to secure a competition slot this year."

"Students from Mist City Arts and Science University have stepped up. Let's fight for it!"

"I heard that Xu Bin of Mist City Arts and Science University is incredibly talented and has been revered by many grandmasters in the domestic computer science circle."

"Really? Is he that amazing?"

"Anyone immersed in the computer science field would know. Xu Bin has an ID called 'Bin'. The computer gurus nicknamed him —— 'Without me, Bin, the computer world would be an eternal night!'"

"That's badass?"

"I must be out of the loop."

"As far as I know, Bin might even be able to independently develop a super awesome operating system."

"Like Apple? Windows? Android-kind of operating systems? Is this an exaggeration?"

"It's just a rumor. No one's ever seen Bin's output. Who can't brag, right?"

"So that means, Mist City Arts and Science University's team genuinely has some substance?"

"Let's just wait and see. Who's pulling an all-nighter to watch the competition tonight?"

"It's Saturday tomorrow, surely I'll watch the full competition. It only ends around two o'clock. That's when the nightlife truly begins."

"666, can you all stay up late like this?"

At this point in time, Xu Bin was clearly unaware that he was being discussed by the domestic users watching the competition.

His focus was all on the competition.

The ACM committee quickly confirmed that all preparations were in order for all 34 university teams.

Then they started with the first question.

That is, [Question A].

The ACM competition questions will be presented in the form of A to G, and all the competing teams will start answering.

And the difficulty of the questions will gradually increase starting from A!

Once the first question was given, all the team members of the 34 university teams immediately got into the state.

No wonder they were all top computer science students from around the world.

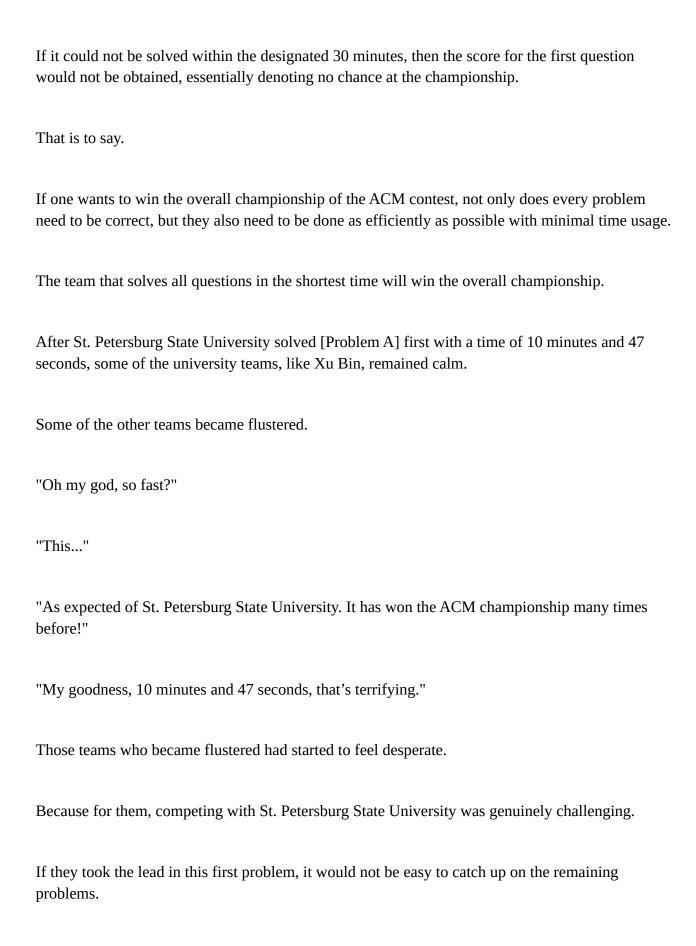"Chen Jun, start parsing the question."

"Okay!"

Chen Jun began to parse [Question A] in the most convenient way to communicate with Director Xu.

The purpose of this was to enable Xu Bin to start developing the solution program more efficiently based on the analysis of the question.

In other words, Xu Bin and his team could start answering while parsing the question, an efficiency not many teams possess!

Chapter 623: Is this University a Joke?

When the competition committee released [Problem A] to all the participating university teams, the contestants from the 34 universities stood ready.

"This problem isn't difficult."

After hearing Chen Jun's analysis, Xu Bin also looked at the problem and quickly started writing the program to answer it.

Everything seemed to be going smoothly.

Xu Bin's fingers danced over the computer keyboard at lightning speed, his eyes wide open, hardly needing to look at anything, he could write the program code just by the picture in his mind.

To Xu Bin, solving this problem was like having a fixed formula, but there might be some confusing phenomena during the process.

But Xu Bin made accurate judgments about these confusing phenomena, and both Chen Jun and Ouyang Chen were providing a comprehensive analysis of [Problem A].

Therefore, there was certainly no issue with Xu Bin's problem-solving approach.

Besides.

[Problem A] was the easiest of all the problems in this ACM competition. If someone couldn't solve it or made a mistake, that would be absurd.

About ten minutes had passed.

Xu Bin was still entering the final phase of the question.

At the contest, the competition committee hadn't announced any university team's success, everyone was busily answering the questions.

Beep!

Suddenly, a sound rang out in the competition venue.

Consequently, the competition committee announced through the venue's broadcast the first university to solve [Problem A].

"Congratulations to St. Petersburg State University for successfully solving [Problem A] in 10 minutes and 47 seconds, becoming the first team to solve [Problem A], congratulations!"

With the announcement of the competition committee, at the location of the St. Petersburg State University team, a balloon labeled "FIRST-PROBLEM-SOLVED" suddenly rose up.

Solving [Problem A] in just 10 minutes and 47 seconds undoubtedly added pressure to the other university teams.

However, Xu Bin was not flustered at all.

He knew perfectly well that becoming flustered would waste his time on solving [Problem A].

The committee had set a time of 30 minutes to solve [Problem A] as quickly as possible. The entire contest would last 5 hours with at least seven problems, implying that each problem had its own time limit.

If it could not be solved within the designated 30 minutes, then the score for the first question would not be obtained, essentially denoting no chance at the championship.

That is to say.

If one wants to win the overall championship of the ACM contest, not only does every problem need to be correct, but they also need to be done as efficiently as possible with minimal time usage.

The team that solves all questions in the shortest time will win the overall championship.

After St. Petersburg State University solved [Problem A] first with a time of 10 minutes and 47 seconds, some of the university teams, like Xu Bin, remained calm.

Some of the other teams became flustered.

"Oh my god, so fast?"

"This..."

"As expected of St. Petersburg State University. It has won the ACM championship many times before!"

"My goodness, 10 minutes and 47 seconds, that's terrifying."

Those teams who became flustered had started to feel desperate.

Because for them, competing with St. Petersburg State University was genuinely challenging.

If they took the lead in this first problem, it would not be easy to catch up on the remaining problems.

About two minutes later, the contest committee announced the second school to submit a solution to the problem, which was judged to be 'AC', meaning it passed.

"The second school to pass [Problem A] is: California Institute of Technology, with a time of 13 minutes and 03 seconds."

The strength of California Technology University from America was unquestionably, becoming the second team to solve [Problem A].

"Director Xu, how much longer do we need?"

Chen Jun looked at Xu Bin, who was seriously coding and asked curiously.

"Soon, it might be a bit slower because it's my first time participating in this competition. As soon as I get used to it, it'll be fine."

Xu Bin responded.

The reason he hadn't solved [Problem A] quickly was not because of the difficulty of [Problem A], but because it was Xu Bin's first time on the ACM competition stage. Some unfamiliarity, mentality, and environmental factors might have caused his problem-solving speed to be slower.

But as soon as he gets used to the swing of things, such a problem will be easily resolved.

Beep!

"Haicheng University of Transportation passed [Problem A] with a time of 14 minutes and 51 seconds!"

Beep!

"Moscow State University passed [Problem A] with a time of 14 minutes and 53 seconds!"

Hiss!

The audience at the scene couldn't help but gasp. It was surprising that Haicheng University of Transportation from Xia Country and Moscow State University from Russia only had a 2-second difference.

Both these universities were also famous ones that had previously won the overall championship in the ACM competition.

Xu Bin was engrossed in solving [Problem A] and didn't pay attention to any external information.

Gradually, Xu Bin found the satisfying feeling of the task at hand.

"Submit!"

From the moment Xu Bin clicked submit, it meant that the time taken by Mist City Arts and Science University to solve [Problem A] had stopped. If approved by the judges of the competition committee, the submission time would be considered as the time taken by Mist City Arts and Science University to answer the question.

Chapter 624: Is this University a Joke?

If an answer is incorrect, it will be returned by the panel of judges and there will be one more chance to continue answering; the time for answering in this case will be added to the previous one.

Very quickly, an feedback from the competition committee was received on Xu Bin's computer - AC!

It means that it has passed!

"Mist City Arts and Science University passed [Question A] in 15 minutes and 14 seconds!"

Accompanied by the announcement from the competition center, Ding Yue finally breathed a small sigh of relief upon hearing this result.

Since it was Xu Bin's first time participating in the ACM contest, factors such as nervousness could slow down their answering speed.

However, it wasn't as slow as expected. Compared to ace school teams like those from Haicheng University of Transportation and Moscow State University, they were only about 20 seconds slower.

And compared to St. Petersburg State University, the first to solve [Question A], it was less than five minutes behind.

All these could be made up later, hence Ding Yue was not that pessimistic.

In regards to his buddy Xu Bin, Ding Yue treated him with an optimistic and confident attitude. The more nervous he got, the more likely he would be disappointed.

"Principal Ding, what is the standard of our 15-minute-14-second score?"

Wen Ruohan, the secretary on the side, didn't understand the rules and scores of the competition very well. Seeing that their university had passed the first [Question A] and the timing results were out, she asked Principal Ding curiously.

"Upper-middle level, I guess." Ding Yue glanced at Wen Ruohan, responding with a smile.

"That means, we could catch up later based on the forthcoming questions, right?" Huang Youjie, upon hearing this, was still hopeful about the final results.

At least they hadn't been left behind in the first question and had not yet lost the chance of winning.

"Yes, generally speaking, if the time exceeds 20 minutes, it becomes a bit difficult to catch up. If it exceeds 25 minutes, there will be almost no chance, as one question typically takes around 30 minutes, and a more difficult one may take an hour,"

Ding Yue nodded and explained briefly to Huang and Wen Ruohan.

"University of Cape Town answered [Question A] - WA!"

Suddenly, an announcement from the competition committee came from the center of the competition, there was the first university that had answered [Question A] incorrectly.

"University of Cape Town? The one in Africa?" Ding Yue felt somewhat familiar when he heard the name of the university.

This was when Huang Youjie nodded and said, "Yes, that South African university. It seems to be quite powerful, and it's also a member of the World University Union."

"I wonder how they managed to get this first [Question A] wrong." Wen Ruohan murmured curiously.

To the general audience at the scene, and those watching the competition through other channels, the first question in the ACM competition, [Question A], was apparently the easiest. It can't be true that they couldn't even solve this one, right?

The majority of the teams from the participating universities solved this question within about 20 minutes.

Only the University of Cape Town from South Africa had answered this question incorrectly, eventually taking more than 30 minutes.

This implied that the University of Cape Town from South Africa was virtually out of the competition.

Since they didn't score anything on the first question, even if they wanted to catch up later, it would be very difficult.

However, despite getting [Question A] wrong, the team from the University of Cape Town can still continue to participate and solve the remaining questions.

The ACM competition rules do not include any rules for elimination, just timing, right and wrong answers, or other special circumstances. All universities have the right to answer all the questions in the entire competition.

Of course, by this time, the universities that have not yet solved [Question A] have another choice - leaving the competition directly.

However, the University of Cape Town obviously wouldn't choose this. Instead of leaving, they might as well continue to answer the remaining questions, though they've basically lost the chance of winning by this point.

If they would directly leave, it would be really embarrassing.

"I don't think the Computer Science major at the University of Cape Town is a top-tier one, right?" Huang Youjie mumbled.

"Even so, it's absurd that all 33 university teams were able to answer [Question A] correctly but the University of Cape Town answered it incorrectly. I think the University of Cape Town might be joking."

Ding Yue joked.

Isn't it absurd enough that they stumbled right at [Question A]?

Half an hour has passed since the competition started; the time given by the contest committee for the first question has now ended.

Next, it signifies that [Problem B] will be making its debut soon.

The difficulty will increase by a notch.

"Now, the organizing committee will provide [Problem B] to all participating university teams. Each team has up to 30 minutes to complete the problem!"

With the announcement of the organizing committee, [Problem B] officially took the stage.

Clearly, for those leading college teams with illustrious reputations, [Problem B] posed absolutely no difficulty. The challenges that they aimed to take on were naturally the final two or three problems.

Ding Yue noticed that whether it was the universities participating from Russia, or America, or even that from Europe, when encountering [Problem B], they seemed pretty much at ease.

Of course.

For the teams participating from Xia Country, Haicheng University of Transportation was also under no stress. Indeed, [Problem B] was rather simple for them.

How the Northwestern University of Science and Technology was faring, Ding Yue did not know. He saw that the expressions of the three participating team members from the Northwestern University of Science and Technology were frozen, seemingly a tad tense.

In the end, Ding Yue redirected his gaze to his own home team from Mist City Arts and Science University. Watching Xu Bin, Chen Jun, and Ouyang Chen, he noted their calm composure and complete lack of tension. They had already started to tackle [Problem B] proficiently.

Chen Jun was the one who analyzed [Problem B]. Ouyang Chen was assisting him, while Xu Bin wrote the solution to the problem based on Chen Jun's analysis.

The whole process was like a smooth flow of events. Xu Bin was gradually getting into the groove thanks to the first problem.
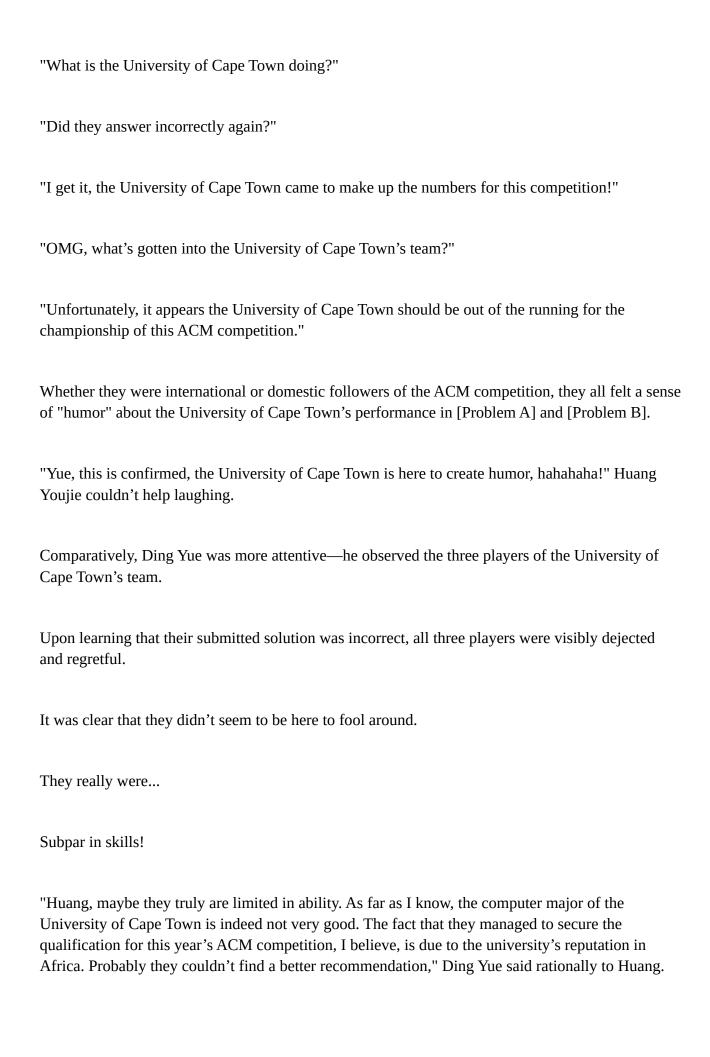
Thus.

Now, Xu Bin had already more or less gotten the hang of typing code to solve the problems. Being proficient, it was time for him to compete against the other universities in terms of speed.
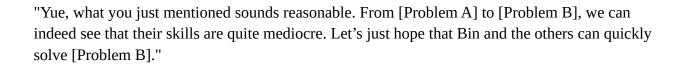
"The University of Cape Town submits a solution to [Problem B], WA!"

Suddenly, about eight or nine minutes in, the committee's voice announcing the reports echoed in the venue.

The University of Cape Town submitted a solution to [Problem B] in less than ten minutes, and the result was WA! Which meant it was wrong!

"Hahahaha!"

"What is the University of Cape Town doing?"

"Did they answer incorrectly again?"

"I get it, the University of Cape Town came to make up the numbers for this competition!"

"OMG, what's gotten into the University of Cape Town's team?"

"Unfortunately, it appears the University of Cape Town should be out of the running for the championship of this ACM competition."

Whether they were international or domestic followers of the ACM competition, they all felt a sense of "humor" about the University of Cape Town's performance in [Problem A] and [Problem B].

"Yue, this is confirmed, the University of Cape Town is here to create humor, hahahaha!" Huang Youjie couldn't help laughing.

Comparatively, Ding Yue was more attentive—he observed the three players of the University of Cape Town's team.

Upon learning that their submitted solution was incorrect, all three players were visibly dejected and regretful.

It was clear that they didn't seem to be here to fool around.

They really were...

Subpar in skills!

"Huang, maybe they truly are limited in ability. As far as I know, the computer major of the University of Cape Town is indeed not very good. The fact that they managed to secure the qualification for this year's ACM competition, I believe, is due to the university's reputation in Africa. Probably they couldn't find a better recommendation," Ding Yue said rationally to Huang.

"Yue, what you just mentioned sounds reasonable. From [Problem A] to [Problem B], we can indeed see that their skills are quite mediocre. Let's just hope that Bin and the others can quickly solve [Problem B]."

Ding!

"Congratulations..."

As Huang Youjie finished speaking, the competing university team who first solved [Problem B] emerged.

Chapter 625: The birth of a genius and a champion!

"Congratulations to Imperial Polytechnic University for being the first to solve [Problem B], taking 11 minutes and 9 seconds!"

With the announcement of the competition committee, a balloon marked with "FIRST-PROBLEM-SOLVED" rose behind the area where the three players of the Imperial Polytechnic University team were located.

This is the honor of the team that solves each problem first.

Upon hearing that it was Imperial Polytechnic University, Huang Youjie was slightly disappointed. He thought it might be Bin and his team who had solved [Problem B].

"Imperial Polytechnic University is strong, there is no doubt about it. They have done a great job taking only 11 minutes and 9 seconds to solve the problem." Ding Yue couldn't help but frown.

If this trend continues, will his Mist City Arts and Science University fail to make it into the final championship contention?

The rules of the ACM competition are calculated based on the total time taken to answer all the questions. The shorter the time a university takes to answer, the greater the chance of winning the championship.

If there is only one problem left, it is still possible to catch up by solving the last problem when the time difference between many universities is only a few minutes or ten minutes.

Even if there is a gap of twenty or so minutes or half an hour's time performance, there is still hope.

What they are afraid of is those powerful universities that solve the first few problems in around ten minutes, which make them pull away from other universities.

Ding!

"Mist City Arts and Science University has successfully solved [Problem B], taking 11 minutes and 26 seconds!"

The sudden sound of the competition committee's announcement surprised Ding Yue!

His own Mist City Arts and Science University!

It turned out to be the second college team to solve [Problem B], which was really unexpected for Ding Yue.

The time rank was quite good for the first question, and the second question was the second one. The difference with Imperial Polytechnic University, which was the first to solve [Problem B], was only 17 seconds. This is not a gap at all.

"Yue, Bin and his team are awesome! They solved this problem so quickly?" Huang Youjie excitedly grabbed Ding Yue's arm after hearing the competition committee's announcement.

"Hahaha, it seems that Bin indeed did not disappoint me, both Chen Jun and Ouyang Chen did well."

With such good results, Ding Yue naturally felt happy.

Based on the time taken for the first and second questions, Mist City Arts and Science University could probably be among the top, right?

Subsequently, St. Petersburg State University, California Institute of Technology, Nanyang Technological University, Haicheng University of Transportation, Moscow State University, and other universities also passed [Problem B], and the time they took was actually similar, with a maximum interval of one or two minutes.

These are all first-tier competing universities, powerful in all aspects.

As competitors, they must be taken seriously.

Subsequently, another dozen or so universities also passed [Problem B], including Northwestern University of Science and Technology from Xia Country.

This time, not only the team from the University of Cape Town in Africa fell through [Problem B], but surprisingly, three other school teams had issues while solving [Problem B].

After 30 minutes of answering time, these four universities could not achieve any results.

So, the University of Cape Town from Africa has completely lost the chance to compete for the ACM championship.

The remaining thirty or so universities are currently divided into two tiers. The first tier includes powerhouse schools such as St. Petersburg State University, Imperial Polytechnic University, California Institute of Technology, University of California, Berkeley, Haicheng University of Transportation, and so on.

Of course, Ding Yue's Mist City Arts and Science University is also in the first tier. Moreover, the results of the two problems after the completion are currently at the forefront of the first tier.

This question was more difficult than the previous one. The competition became exciting with the start of [Problem C].

Because when the competition committee released the third question, all university teams were busy answering it.

This time no university solved [Problem C] in about ten minutes. The most important thing is that the time for answering this question given by the competition committee is actually 45 minutes.

The increase in time to answer a question signifies a sharp increase in the difficulty of the problem.

The team from the University of Cape Town, a university with not very strong power, was somewhat at a loss when faced with [Problem C].

"It seems this program cannot be solved!"

"Impossible, would the competition committee issue an unsolvable problem."

"Can you try to solve it using the C language?"

"This difficulty is really too big, or it's simply impossible."

The teams from the universities with poor performance were stumped by [Problem C], like a difficult hurdle.

Through this question, a clear distinction emerged between the participating teams with strong computer skills and the ones with poor skills.

When faced with this question, the teams from the universities in the first-tier showed no signs of difficulty, they were all calmly solving this program.

With the strong support of his two teammates, Xu Bin found coding almost like a fish in water.

This problem indeed poses a great difficulty, but for a computer genius like Xu Bin, the difficulty is only that the process of writing the program is slightly more complex, it is not an unsolvable programming problem.

Chapter 626: The birth of a genius and a champion!

Like Xu Bin's team, the contestants from the first echelon universities are calmly programming to solve this problem.

On the other hand, some of the contestants from the second tier universities are doing quite well, keeping their cool just like the first-tier ones.

Others have started to discuss among themselves.

Discussion implies that they did not have an immediate solution in mind, which is a big waste of time.

After all, the ACM International College Student Programming Competition is a test of who can solve the committee's questions more quickly and efficiently.

Twenty minutes have passed.

The competition venue is still very quiet, with no teams yet to solve [Problem C].

Even Ding Yue can't help but hold his breath, wondering how challenging this problem could be.

The first two problems were generally solved within 10 minutes, but now this problem has taken 20 minutes and there's still no sign of progress.

[National Television Station's Science Education Channel Live Room]:—

"I'm a computer science major, and frankly, this problem has baffled me."

"It's been twenty minutes, hasn't it? No team has solved this problem yet?"

"Damn, it's hard."

"This problem seems like a good opportunity to catch up. Go, Haicheng University of Transportation!"

"Go Mist City Arts and Science University!"

"Go, Northwestern University of Science and Technology!"

"Damn it, I'm a computer science major and I hardly understand the third problem of this ACM competition."

"Indeed, it's very difficult. This problem is extremely complex to solve."

"Yes, yes, yes. Not only is it complex, but a slight mistake can cause a program error. It's pretty hard."

In the live room of the National Television Station's Science Education Channel, there are more than 20,000 viewers from Mist City Arts and Science University.

This ACM International College Student Programming Competition is vital to Mist City Arts and Science University.

Because it is the first international competition for Mist City Arts and Science University, many students from the university are actively following the competition progress.

Ding!

At the competition venue.

The familiar sound everyone was waiting for finally rang out.

"Congratulations to Moscow State University for successfully solving [Problem C] in 23 minutes and 41 seconds!"

Bang!

With the announcement of the Competition Committee, an orange balloon with the sign "FIRST-PROBLEM-SOLVED" rose behind the three contestants from Moscow State University.

Actually, each balloon is different in color.

"It seems that each subsequent problem takes more and more time." Upon seeing Moscow State University take the lead in solving this problem, Ding Yue couldn't help but reflect.

The time taken to solve this problem is almost double that of the previous one.

"Moscow State University is formidable, almost bagging all the ACM competitions along with St. Petersburg State University in recent years!"

Huang Youjie, holding his phone, remarked.

He just checked and learned that Moscow State University and St. Petersburg State University have won many ACM competitions in recent years.

"I just want to know when Bin and his team will solve this problem!"

The expression on Ding Yue's face became somewhat serious.

If every subsequent problem takes a long time, there could be a lot of uncertainties.

For instance, St. Petersburg State University, which solved the first problem first, has yet to solve this problem.

Ding!

"Haicheng University of Transportation has successfully solved [Problem C], taking 24 minutes and 07 seconds!"

Unexpectedly, Haicheng University of Transportation was the second to solve [Problem C].

Indeed, it is one of the most promising domestic universities. The strength is remarkable; they even stand a chance to compete for the championship.

Ding!

"Imperial Polytechnic University has successfully passed [Problem C], taking 24 minutes and 29 seconds!"

Ding!

"Mist City Arts and Science University has successfully passed [Problem C], taking 24 minutes and 33 seconds!"

Soon after, within less than five seconds, two more universities have solved this problem.

One of them is Ding Yue's Mist City Arts and Science University, which almost outperformed Imperial Polytechnic University on this problem.

"The gap is not that big, it's okay!" Upon hearing the result of Mist City Arts and Science University on this problem, Ding Yue sighed with relief.

The gap with the first place is just about a minute, which won't have much impact on the subsequent problems.

"Principal Ding, our Mist City Arts and Science University seems to be doing quite well on these three problems."

Wen Ruohan happily said.

"Hmm, we can only say it's okay so far." Ding Yue gave a glance at the excited Wen Ruohan and said, "We need to keep this up until the end of the contest, and hoping other universities alternate in performance. That way, we might stand a chance."

By alternating, Ding Yue means the universities like St. Petersburg State University which solved the first problem first, California Institute of Technology which solved the second, and Moscow State University which solved the third, should be slightly slower in solving subsequent problems, then the time results will be leveled.

Compared to these, Ding Yue's Mist City Arts and Science University, which is among the frontrunners on each problem, and has not much time gap with the first or second place, could potentially lead according to this calculation.

Chapter 627: The Birth of a Genius and Champion!

However, St. Petersburg State University has always scored well, and like Ding Yue's Mist City Arts and Science University, California Institute of Technology has never won first place, but they have always been consistently in the forefront.

Sometimes, they even perform better than Ding Yue's Mist City Arts and Science University.

minutes had passed.

In the end, only 25 out of the participating universities managed to solve [Problem C]. This roadblock of a problem directly thwarted nine universities, suggesting that the subsequent problems would be of a higher difficulty.

"Yue, all the problems coming up are going to be even more challenging, right?" asked Huang Youjie, sitting next to Ding Yue.

"Absolutely, each subsequent problem is going to cause one university after another to fall behind. If we fail to solve even one problem, we can basically say goodbye to winning the competition," Ding Yue nodded and replied.

"Then Bin and the others absolutely cannot make any mistakes!" Huang Youjie suddenly became nervous.

The third problem alone had already stumped nine universities, Huang Youjie had every reason to be nervous.

However, Ding Yue reassured Huang, saying with a smile, "Huang, we need to believe in Bin and the others."

Having said that, deep down, Ding Yue did not truly feel confident. Even though he trusted his team, the unknown factor of whether they could get through all the rounds continued to sprinkle doubt on his hope.

Wouldn't the sixth or the seventh problem be incredibly difficult?

As time ran out for the third problem, the organizing committee quickly launched the fourth problem without missing a beat.

Even though the competition was for a duration of five hours, and it could potentially extend due to various reasons, there shouldn't be too much time wasted between each problem. Any substantial delays would cause the participants to lose their momentum and train of thought.

[Problem D] was introduced.

In the competition area of Mist City Arts and Science University, Director Xu Bin sat in front of a computer, with Chen Jun and Ouyang Chen on his right.

"Director Xu, this problem involves fixing a security flaw in the program," Chen Jun explained after analyzing [Problem D], adding, "This seems quite challenging, we could approach it by...."

If it were up to Chen Jun alone to solve the problem, he might be at a loss.

With a three-member team, and Director Xu Bin at the helm, it lessens Chen Jun's worries significantly.

"A security flaw?"

Upon hearing Chen Jun's words, Xu Bin looked at the problem at hand.

He has always taken a keen interest in programs with security flaws.

Since he started studying computer science at Mist City Arts and Science University, Xu Bin has always been working on a security system.

All the basic network devices across the university campus are protected by a security system, which was developed and designed by Xu Bin himself.

Starting from the fourth problem, almost all of the university representatives, were eagerly discussing potential solutions.

Right!

For the first three problems, many universities began coding and debugging as soon as they saw the problem.

However, efficiently solving the fourth problem wasn't that straightforward.

"If the first three problems were appetizers, then starting from the fourth problem, the real challenges have arrived."

"This problem doesn't seem easy to solve."

"Without a doubt, the problem-set of the ACM challenge session every year is extremely difficult. Those who are able to solve all seven problems smoothly are among the top in the world."

Audience members, who were passionate about computer programming, were engrossed in active discussions.

Among these audience members, many were computer experts, after all, the influence of the ACM competition was quite substantial.

Even these computer experts, had to admit, that the fourth problem posed a significant challenge.

However, these computer experts didn't claim that this problem couldn't be solved.

The problem was definitely solvable; the difference would be in the approach taken by the competing university teams to solve it.

"This security flaw doesn't seem too formidable; the difficulty level isn't too high," stated Xu Bin after reading the problem, before starting to address this security flaw.

To solve this fourth problem, the competing university teams were expected to resolve the identified security flaw through programming.

To fix this security flaw, it was essential to have a thorough understanding of how the program code of the security flaw functioned.

Many universities were stumped at this stage.

But for someone like Xu Bin, who had come across countless security flaws, it didn't seem that difficult.

Very quickly, Xu Bin found the program code for the security flaw at the earliest opportunity.

He then commenced fixing the security flaw in line with the requirements.

Considering that the committee allotted a full hour to this problem, it was apparent that the difficulty level of this problem was considered high.

"Director Xu, are you familiar with the program code of this security flaw?" asked Chen Jun, surprised to see Director Xu Bin so quickly start addressing the security flaw.

While others were still trying to dissect and understand the program code of the security flaw, Director Xu Bin was already well on his way to resolving it.

This meant that Director Xu Bin was well ahead of other universities in tackling this problem!

"I have come across it before; I've worked on many security systems and have experienced a lot of these," replied Xu Bin, while working on the flaw, adding to Chen Jun, "This is indeed a coincidence."

Chapter 628: The Birth of a Genius and Champion!

Upon hearing Xu Bin's words, Chen Jun didn't ask any more questions, knowing that any further inquiries would only delay Director Xu's process of fixing the security vulnerability.

For this question, the roles of Chen Jun and Ouyang Chen had suddenly diminished. Essentially, it had become Director Xu's solo show.

Upon seeing Xu Bin starting to write programming code to fix the security vulnerability from the backstage resting room, Ding Yue couldn't help but feel a little excited.

"It looks like Bin is determined to get this question right!" Ding Yue exclaimed excitedly.

"Really? Eh? Bin has started fixing the vulnerability? Other university contestants are still discussing it!"

Huang Youjie also observed the competition scene through screen in the resting room.

The screens showed all 34 university teams. A majority of the participants, including those from top-tier universities like St. Petersburg State University and Imperial Polytechnic University, were still discussing how to fix the security vulnerability.

Meanwhile, Xu Bin from Mist City Arts and Science University had already begun to fix it. Chen Jun and Ouyang Chen, standing beside him, seemed to have completed their tasks and had now transferred all authority to Xu Bin, who was in charge of programming the fix.

Gradually, more people started to pay attention to the contestants from Mist City Arts and Science University.

Their approach to solving this question was different from the other universities, almost no discussion took place before they started fixing the security vulnerability.

minutes and 30 seconds later, the jury received the "answer sheet" submitted by Mist City Arts and Science University.

"Did they fix the security vulnerability this quickly?"

A member of the judging panel looked at their colleagues in astonishment.

"Let's see, based on past experiences, fixing this kind of vulnerability typically takes about forty minutes," said another juror.

Subsequently, the jurors began to assess whether the "answer sheet" submitted by Mist City Arts and Science University had passed.

About three minutes later.

"This... the security vulnerability has really been fixed!"

The jurors were amazed!

[Problem D] was the only security vulnerability program design question in the ACM competition. Given the high difficulty level, the question was typically given a full hour to solve.

But in just 27 minutes and 30 seconds, the team from Mist City Arts and Science University had successfully fixed the security vulnerability.

For the jurors, this was absolutely incredible!

"Genius, it's indeed genius to fix this security vulnerability so quickly!"

An amazed juror named Schmaeg exclaimed.

"Pass, let's announce it!"

The jurors unanimously agreed that the "answer sheet" submitted by Mist City Arts and Science University had indeed achieved successful repair of the security vulnerability.

Ding!

While the other 33 university teams at the competition venue were still working hard to fix the security vulnerability, a heart-stopping sound echoed.

"Congratulations to Mist City Arts and Science University for successfully solving [Problem D] in 27 minutes and 30 seconds!"

As the announcement ended.

Immediately afterward, a loud "bang" sound was heard, and behind Xu Bin, Chen Jun, and Ouyang Chen, a red balloon symbolizing "FIRST-PROBLEM-SOLVED" finally rose.

It was unclear whether it was a deliberate design or a coincidence. The balloon that rose after Mist City Arts and Science University became the first to solve [Problem D] was red, which symbolized the East. Could this representation be a mere happenstance?

Perhaps this was merely a coincidence.

"Principal Ding, a red balloon! Director Xu and his team are just too remarkable, they are the first to solve this problem! They are amazing!"

Upon seeing this, Wen Ruohan was teeming with excitement.

This was Mist City Arts and Science University's first time being the first to solve a problem, but Wen Ruohan did not know whether 27 minutes and 30 seconds was considered fast.

In fact, Ding Yue also wasn't sure whether this was considered fast—it would all depend on how long it took for the second place team to solve [Problem D].

Only the members of the jury knew that 27 minutes and 30 seconds had actually broken the record for solving a security vulnerability problem in previous competitions.

"Did Mist City Arts and Science University solve it that quickly?"

One contestant from Haicheng University of Transportation, another university in the Xia competition district, cried out in amazement.

"Indeed, they were quick. It's incredibly surprising. But let's not waste time, let's focus on fixing the vulnerability as soon as possible," another contestant from Haicheng University of Transportation urged.

Sharing the same shock as the contestants from Haicheng University of Transportation were many other universities. When contestants from St. Petersburg State University, Imperial Polytechnic University, California Institute of Technology, Moscow State University, and the like heard that Mist City Arts and Science University had completed the task of fixing the security vulnerability in a record time of 27 minutes and 30 seconds, they were all stunned.

While some were shocked, others were delighted.

The most delighted one was none other than Ding Yue.

"Hahaha, Bin didn't let me down. He started by taking the lead." Ding Yue nodded in satisfaction.

At the same time, Ding Yue was privately calculating when Mist City Arts and Science University's cumulative competition time would temporarily rank first?

Currently, the teams ranking ahead of Mist City Arts and Science University in terms of cumulative competition time included St. Petersburg State University, Moscow State University, Imperial Polytechnic University, California Institute of Technology, Haicheng University of Transportation, and University of California, Berkeley.

Chapter 629: The Birth of a Genius and Champion!

Six in total.

The time difference between Haicheng University of Transportation, University of California, Berkeley, and Mist City Arts and Science University was actually less than 30 seconds.

Now, those 30 seconds have passed.

However, these two universities still haven't solved the security flaw problem.

Meaning, the cumulative time score of Mist City Arts and Science University has now surpassed Haicheng University of Transportation and University of California, Berkeley.

The time difference between the first four colleges and Mist City Arts and Science University is at least 1 minute. Due to St. Petersburg State University achieving a first place, the current time difference with Mist City Arts and Science University is more than 5 minutes.

In the next 4 and a half minutes, Ding Yue's heart was filled with anxiety.

But then.

Those four and a half minutes quickly passed.

At this moment, Ding Yue felt both surprised and doubtful.

What's going on?

Why hasn't any other university solved this security flaw repair problem?

Even if St. Petersburg State University were to pass [Problem D] at this point, they still wouldn't be able to surpass Mist City Arts and Science University in terms of time score.

The temporary first place seems to be secure.

[National Television Station's Science Education Channel Live Room]

"Hahaha, our Mist City Arts and Science University is awesome, we could be ranked first in time score now, right?"

"This is impressive, solving the security flaw repair problem so quickly."

"Are we first?"

"What? Has Mist City Arts and Science University won the championship?"

"Eh, eh, eh, don't jump to conclusions, we're just temporarily first in terms of score, the championship isn't guaranteed, there are three more problems to solve, and each one is harder than the last."

The audience back home is already bubbling with excitement.

To everyone's surprise, Mist City Arts and Science University has temporarily taken the lead. It seems everyone had underestimated the strength of this university.

Many people thought that Mist City Arts and Science University was just getting lucky and was only there to make up the numbers.

But from the first problem to the fourth, the performance of Mist City Arts and Science University has been excellent and clearly visible to all.

The fact that they were the first to solve the fourth problem so swiftly completely changed the way everyone looked at Mist City Arts and Science University.
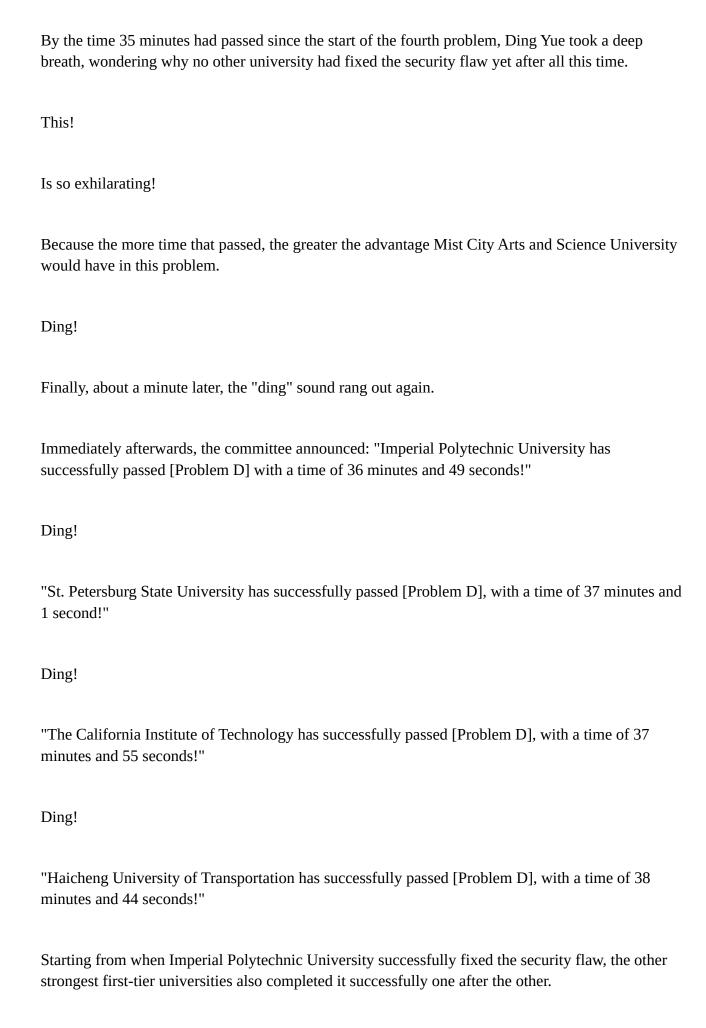
Now, of the three domestic universities participating in the ACM competition, the strengths of Mist City Arts and Science University and Haicheng University of Transportation have been recognized by the audience, and they believe these two institutions have a chance to win the championship.

As for Northwestern University of Science and Technology, it can only be said that they're a bit weaker, but they're performing quite well compared to the second-tier universities.

However, given their current time score, Northwestern University of Science and Technology basically has no chance of winning the championship.

Unless Northwestern University of Science and Technology excels in the seventh problem and solves the problem in record time, which is nearly impossible.

Everyone knows that the seventh problem is notoriously difficult to solve.

By the time 35 minutes had passed since the start of the fourth problem, Ding Yue took a deep breath, wondering why no other university had fixed the security flaw yet after all this time.

This!

Is so exhilarating!

Because the more time that passed, the greater the advantage Mist City Arts and Science University would have in this problem.

Ding!

Finally, about a minute later, the "ding" sound rang out again.

Immediately afterwards, the committee announced: "Imperial Polytechnic University has successfully passed [Problem D] with a time of 36 minutes and 49 seconds!"

Ding!

"St. Petersburg State University has successfully passed [Problem D], with a time of 37 minutes and 1 second!"

Ding!

"The California Institute of Technology has successfully passed [Problem D], with a time of 37 minutes and 55 seconds!"

Ding!

"Haicheng University of Transportation has successfully passed [Problem D], with a time of 38 minutes and 44 seconds!"

Starting from when Imperial Polytechnic University successfully fixed the security flaw, the other strongest first-tier universities also completed it successfully one after the other.

The gap between them is not significant, but compared to Mist City Arts and Science University, the gap is substantial.

On this question alone, it's nearly a ten-minute difference!

St. Petersburg State University was somewhat impressive, though, the time difference on this question is less than ten minutes, taking into account their five-minute advantage from before.

This means that the difference in time between St. Petersburg State University and Mist City Arts and Science University is only about three to four minutes.

Ding Yue earmarked St. Petersburg State University as the biggest competitor to his Mist City Arts and Science University on the path to the championship.

Of course, the powerful universities like Imperial Polytechnic University, Haicheng University of Transportation, and the California Institute of Technology should also not be taken lightly.

The fourth question resulted in a significant change in the scores on the field.

Some originally first-tier universities dropped to the second-tier because of the security flaw repair problem.

And some second-tier universities, since they solved the security flaw in more than forty minutes, moved onto the first-tier.

But the universities teams at the bottom, they are still pretty much the same, underperforming as usual.

Especially the University of Cape Town from Africa, they failed to pass [Problem D] yet again.

Each problem seems to be challenging for the trio representing the University of Cape Town. One can only wonder how their fellow students must feel seeing the competition unfold?

After the fourth problem, it's apparent who has the chance to win the championship and who's just there to fill the numbers.

Chapter 630: The Birth of a Genius and Champion!

The fifth problem didn't seem to be as difficult as they had imagined.

Moreover, the organising committee had only set aside 20 minutes to solve the fifth problem, which shockingly turned out to be the shortest problem-solving time.

However!

The short time limit for the fifth problem did not mean that it was not difficult.

Indeed, the problem didn't require much programming, but it was tough; many second-tier universities exhausted their wits and still had no idea how to crack this programming problem.

The top-ranked first-tier universities seemed quite composed.

It looked as though even the fifth problem couldn't stump them.

With the perfect cooperation of Xu Bin, Chen Jun, and Ouyang Chen, they used 11 minutes and 27 seconds to get through the problem, coming in third for this question.

The time gap between the first two places and Mist City Arts and Science University was at most only a minute.

This also indicated that although Mist City Arts and Science University was not the first to solve the fifth problem, the university was still temporarily leading in cumulative time.

"If we can hold on like this, it seems we have a chance to win the championship!" Huang Youjie glanced at the cumulative time score as the fifth question was about to end.

Mist City Arts and Science University ranked first for now, followed by St. Petersburg State University, Imperial Polytechnic University, California Institute of Technology, Moscow State University, Haicheng University of Transportation, Nanyang Technological University, University

of California, Berkeley, Zurich Federal Institute of Technology, and Stanford University came in tenth place.

Speaking of which, Stanford University is a world-renowned university in the United States, often ranking among the top globally, sometimes even in the top three.

However!

In the ACM competition, Stanford University's performance wasn't particularly strong. It seemed their team couldn't quite match up to the others in terms of capability.

At this point, the top ten colleges are evidently the hot favourites for the championship.

Ding Yue hoped that as Huang had said, if his Mist City Arts and Science University could just hold steady, wouldn't the championship be within reach soon?

However, the sixth and seventh problems were coming soon, and it was indeed a big question mark if they could maintain their lead.

If they can clinch the championship, they can make a name for themselves, at least in the field of computer science.

If they can't win the championship, no matter how brilliant they were during the fourth problem, it would be in vain, because, in the end, people only care about the championship.

"Huh."

Ding Yue sighed deeply before saying to Huang, "I hope Bin and the team can hold on. Of course, it would be even better if they could recreate the accomplishment of the fourth problem."

"Yeah!"

As Ding Yue and Huang Youjie were chatting, the organising committee announced the start of the sixth problem.

The difficulty of Problem F was cranked to the max, with a problem-solving time of an hour, according to the committee's rules.

Solving Problem F within an hour was mandatory; failing to do so means failure and no score for this question.

For those university teams that still had a chance to win the championship, not scoring on this problem meant instant defeat.

The difficulty of the sixth problem was beyond many universities' expectations.

"This... this is almost impossible!"

"Too difficult!"

"An hour? Even if I had a whole day, I might not be able to solve it!"

"Mike, start quickly!"

"Hurry, hurry, let's try our best while we have time!"

Upon seeing the sixth problem, many students from renowned universities started to lose heart.

In fact, even Xu Bin knitted his brows.

Chen Jun and Ouyang Chen, sitting next to him, also both looked anxious.

"Director Xu, I'm afraid it's not going to work just with Ouyang Chen and my analysis," Chen Jun confided to Director Xu earnestly.

"I understand, but that's okay. Let's try to solve this problem together. You two can contribute as much as possible with your ideas."

Xu Bin might be frowning, but he didn't panic.

Because he knew that he had to stay calm at this moment, and once they lost composure, they might indeed fail to solve the problem in an hour.

After all, they say that three cobblers make one Zhuge Liang.

Even more so when Xu Bin, Chen Jun, and Ouyang Chen were not cobblers but college geniuses in computer science.

The three of them may perhaps work wonders if they unite and cooperate.

In his year and more at Mist City Arts and Science University, Xu Bin excelled in computer science thanks to his genuine interest, natural capabilities, additional learning buffs, and other various perks from Ding Yue.

Although he's not absolutely confident when facing the difficult problems in the ACM competition, Xu Bin believed he could bring something to the table.

However, unlike Xu Bin, the students from the other colleges were feeling a bit downcast.

They didn't feel much pressure solving the first five problems; the fourth problem just took a bit more time.

But on the sixth problem, some students even started to feel a little frustrated.

"I believe we simply cannot solve this program within an hour!" sighed Wilke, who's from the University of California, Berkeley, in America.

"Hey, Wilke, we have to stay confident!" Wilke's teammate encouraged.

"But..."