

# Introduction to Computer Architecture

## Assignment 2

### Question 06 Compilation

**Of millions of advice you've been told, the one I prefer is enjoy being you.**

I hope you really enjoyed the class (at least for some moments) so far. I truly appreciate your trust and your continuing support, understanding, tolerance, and cooperation. Ever since we met, I keep working on how to provide you with a satisfactory learning experience in return.

For almost all previous editions of this course, an assignment question sought to solicit thoughts and suggestions from the participants. For example, do you gradually understand strategies or things from different perspectives and weigh their tradeoffs? What do you think is the real challenge for you to learn this course? Do you consider interactions in class helpful? What held you back when you were trying to ask or answer questions in class? What suggestions (for better learning this course) would you like to provide to other students? What help or assistance would you like from me or other students? All their [thoughtful and constructive feedback](#) has encouraged us toward a more rewarding computer architecture class.

This time, I would like you to introspect beyond this course. Taking a course should be rewarding in many possible ways. As we discussed in the first lecture session, even if you may barely practice computer architecture principles after the class ends, if whatever you learn through this class---whether it be computer architecture per se, a philosophy it implies, a study tip or inspirational quote we share, or a new friend you know---keeps driving you toward your greater self, this course fulfills its mission.

In particular, you are highly expected to develop a clear vision and be determined to strive for it. Most students in the computer architecture class are junior. The third year cannot be more decisive for your future. If you aim to work in an IT company after graduation, start practicing skills that help you ace the interview. If you plan to pursue a higher degree, join a research lab to cultivate research experience and application materials. If you have not decided, do both if your time and energy permit, see which one you really prefer. Try to make your decision based on your own goal and experience. Work with people who keep your interest and passion alive. It is really, really important to identify a right role model to emulate and learn from. It is also highly decisive to focus on what really is essential, especially given that [some of constantly emerging paradigms might turn into hypes and fade away](#). Stick to golden rules that should be objective during the selection. It should not be simply about what one claims to be or what one claims others less so. "See the world not as it is, but as it should be." Think of the proverb "shallow brooks babble loudest, still waters run

deep” once in a while. (Or as sg put it: “shallow water hualahuala, deep water kckc.”) In return, be part of the initiative that motivates yourself and people around you.

Meanwhile, if you ever consider assistance from me as possibly helpful, whether course related or beyond, never hesitate to reach out. As I proudly claim on my webpage, I am always proud to be part of the journey for someone to excel. And I am pretty sure that I would also love to be part of yours as well.

???Therefore, with this question, I would like you to share your thoughts on your goal and plan. For example, what is your goal after graduation? What is your plan to achieve that goal and what challenges might be involved? How do you manage to be motivated and determined? What helpful advices or suggestions did you get from senior students and professors? What suggestions would you like to offer peers with similar goals? Or, it is possible that you are still finding your goals. Don’t rush and take your time. Being at such a young age, you have infinite possibilities to live your dreams. “Commit to something and commit hard. Doesn’t matter if you switch later. It’s easier to prove yourself if you’ve had to do it once before.”

“Where are you? Here.  
What time is it? Now.  
What are you? This moment.”

“Old urges continue to arise, but urges do not matter; only actions do.”  
“A warrior is as a warrior does.”

“While they are deciding, make even more art.”

So pleeeeeease, live a life you deeply enjoy and will remember.

If not now, when?

\*\*\*00\*\*\*

Thanks for sharing your thoughts and for all your suggestions and acknowledgements.

I would like to share with you this anonymous compilation of all the collected feedback. As you may see, whatever you feel about and dream of, you are probably not alone. It is a perfect way to understand more of our peers and resonate with them. “If you don’t walk out, you will think that this is the whole world.”

For 2020 Computer Architecture, I took much time to write replies to all 56 compiled feedback. The first one went for the first mx handing in Q25. However, I did not manage to do that again for 2021 Computer Architecture.

This time, I decide to write replies to all the 53 collected feedback in this compilation. It is the least I could do to show my appreciation of your trust in me and dedication to this class. Yet it is conceivably time demanding. Hope you’ll get your reply soon. And I am always happy to discuss with you about your study and career plans. Feel free to reach out whenever you’d like to talk.

Of millions of advice you’ve been told, the one I prefer is enjoy being you.

Embrace life’s big adventure and devote to enjoy the best things in life.

**BE A LIGHT. SHINE YOUR WAY**

Wish you a joyful ride on every adventure you take!

### \*\*\*01\*\*\*

At the glance of Assignment-2, I was a bit surprised, to be honest. It is rare to see such a "non-CS" question appearing in a **hardcore** course. Yet I thought this question itself had gone beyond this course, and it indeed made me staring at the blinking cursor, pushing me to figure it out. :)

Currently, my short term goal is to excel several key courses: OS, CA, Assembly, etc. They are critical to my understanding of computer, and have an important influence on my GPA as well. Spending enough and essential amount of time on them is worthy. A plan to achieve this goal is:

- Make good use of all possible resources: textbook, lectures time, assistance from peers/TA/professors...
- Do labs independently: I would try to do all required labs and try to squeeze time for bonus lab.
- Peer-learning: active to communicate with my classmates/roommates about knowledge and their ideas, sharing mine as well.

My long term goal is to get a master degree, yet a specific research field hasn't decided yet. Maybe the OS? Architecture? CG/CV? Who knows! But I prefer a down-level field, which means irreplaceability and high threshold, and they are indeed interesting and fascinating. :)

Future is uncertain, which actually makes it beautiful. But I am sure the answer to "What's your thought and goal?" would ever refresh as I grow up. I am eager to re-check this question. >:-)

### \*\*\*02\*\*\*

Dear Kai Ge: hello, I am a student of an extended system, as you can see my foundation is very poor, the computer system of the course has also studied the (failed) twice, each time you start I want to understand, is full of but I began to make exciting encounter a experiment without exception, may be not very good at learning, Lab1 under the help of the students can achieve the result of the acceptance, but there's no acceptance report also delayed, therefore, every time I want to ask you questions but I do not know where to start, on the one hand, is afraid of being poor foundation, on the other hand, don't know the hole where, starting from the digital logic I study very hard, Your attitude towards people and things is very kind, and you are my highly respected teacher. If you can see my confusion, I hope you can give me some advice.

\*\*\*03\*\*\*

Dear Prof. Bu,

Before starting, I think I should say sorry to you for absence from class.

And before talking about my goals, I want to talk about something about my college life. Beginning at a high point in honor college, I wasn't ambitious but confused about the college life. Without pushing from teachers and the pressure of future, I lost the motivation to move on. However, after that, bigger pressure came to me, which made me lose the confidence. But everyone has to face reality, I at least didn't give up. Now, actually, I sometimes bear fear when attending classes. I think there are and will be some students like me who get lost in the college life. Although it doesn't feel good to live such a college life, at least I hold on after all that.

At this point, my goal is to at least earn a living by myself and learn some interesting techniques 😊. To achieve that, I will try hard to pass the courses and it still takes some time for me to decide to go to work directly or pursue a higher degree. For me and some students like me, I will say don't be too focused on the possibility of failure but on the process of dividing the problems to small ones and solve them and believe in yourself.

Wish you all the best!

\*\*\*04\*\*\*

I'm glad to share something about my goal and plan for my near future. But before of that, let me express my gratitude for having chances to participate in Bro Kai's class. It is a really interesting experience, because it reminds me of sincerity and enthusiasm, which is definitely precious in university campus (though I don't think it should be). As for my goal, since I'm already a fourth year student, somewhat I have more concrete plan for my next 5 years or so than I did last year. I'm preparing to study abroad for master degree.

Roughly this time last year, I joined a research lab in the university. It really helps me a lot. I've been building myself a knowledge base about AI in the lab, and also gradually learned what academic research really is. Until now, I have contributed to some part of a paper under the guidance of senior members. It's about AI & music, both of which I'm really into. Maybe few months later, I can see my name on a published paper for the first time. It's really exciting and rewarding, since efforts will eventually pay off.

Besides, currently I'm preparing for my own research project, and I have to say the process is really hard. The deeper I delve into the subject, the more I understand that research circle is actually a community. It's about conversations. One have to read a lot of papers (old and influential ones, new and cutting-edge ones, and comprehensive surveys as well) to grasp what the community had talked about and is talking about. What's more, they have to build insight deep enough to know what can they contribute to the community. After such a challenging process, they can finally design something new, but still have to struggle in lots of experiments.

Still, I believe the process is meaningful. Years later when I look back to the stage I once struggling, I will definitely miss it.

\*\*\*05\*\*\*

After graduation, I plan to continue my postgraduate studies. For seniors, the current plan is to review the exam content carefully. The challenge is to feel that my study in the first three years is not thorough enough, lacks organization, and meets many difficulties in review. Some experience for reference and suggestions on time planning have been obtained. I think that no matter whether you choose the test or not, you can refer to the books of the postgraduate entrance examination to have a certain understanding of the overall system of learning content and the way of investigation when learning some professional basic courses.

\*\*\*06\*\*\*

Currently, I am a 4th grade student from Electrical Engineering College and studying the double minor in Computer Science. Now, I have succeeded in getting a PHD offer. For me, it is such a blessing to be able to take kg's class. However, I was also a little regretted that if I had the privilege to do this thinking in my 3rd grade, I think I would not have been so anxious and impatient in my 3rd grade year.

In my 3rd grade year, because I did not like the research direction and topic of my major, I tried to change my research direction in graduate studies. However, because I did not join any labs at that time, and because I was taking many courses as minors, my grades were not very good and I was not competitive compared to other students. During the second semester of my 3rd grade, I sent emails to a lot of my desired teachers about my intention to finish the graduate studies with them, and eventually either did not reply or ended up finding out that it was not a good fit for me. From May to July of 2021, I was in a state of anxiety, seeing all the students around me find their preferred tutors, while I was standing still and doing nothing. Finally, fortunately, I found a good teacher, which was so lucky for me. If I had thought about my future direction in the first semester of my 3rd grade and prepared for it in advance, I wouldn't have been so anxious about it.

But it's never too late to mend. Studying for a degree is not the end of your studies, but the beginning in another sense. Therefore, I hope that I can actively learn about the basic abilities as well as qualities needed for PHD and actively prepare for them from now on. At the same time, I have not yet considered whether I will pursue academic research or enter industry after graduation. In order to make these decisions better, I should actively grow my horizons and broaden my experience, and take him seriously at all times, hoping to look back in a few years and be worthy of myself.



\*\*\*07\*\*\*

Hello Mr.KG! ;)

Actually it's my second time to be in this class. I don't have a good academic performance. And it's rather difficult for me to learn hardware subjects, especially the labs, so I choose to quit class in the middle of the subject last year. (And this makes computer architecture my last subject at ZJU. ) To be honest, majoring in Computer Science was not a decision that I made after careful consideration. Luckily, I didn't feel that painful during the study in Computer Science, and sometimes it would be quite interesting too.

However, I still do not suppose that I will take a software engineer in some Internet company as my long term career, like many students in Computer Science will do. During my three-year life in ZJU, besides studying, I also joined an organization that makes me feel like at home. I not only met some lifetime best friends here, but also find what I really want to do, who I really want to be and whom I can do these things with. The department I stay do video making. It really feels great when I work group with others to create videos, to be a storyteller. But it is way too hard to be a film maker as a normal student in this place. Thus, I adjust my goals to becoming an indie game producer. Of course, it doesn't makes the goals easier to achieve a lot. But this is so called DREAM right? What if it comes ture?

Practically speaking, it will takes many years and many steps to achieve my goals. First of all, I may go to study in Design. Then I will try to work in some big game companys as well as some game studios for two or three years. After that, if I have enough money, I will try to study Game Design abroad, and trying to work in some famous game companys or game studios there. During all these steps, I will continually make some game demos. Finally, when the time is right, I wish I could gathering my friends to create our own game studio, make our own game, and tell our own story.

This plan seems too simple to read but too difficult to achieve. And there will also be many variables ahead, so the plan will be more complex or even change drastically. I always know that the biggest obstacle is my laziness and procrastination. I have tried countless times to overcome but have failed, but I will still try. Fortunately, I also have a big heart. I believe that I can live in peace and joy with whatever situation comes my way.

Finally, thank kg, as well as all the people I have met and will meet in ZJU who helps me grow up and become a more completed person.

\*\*\*08\*\*\*

About this class: Sadly, I must say that I am not so interested in hardware knowledge, which may mostly contribute to my stereotype. I didn't learn well since computer organization. (although I think I studied hard) So at the beginning I was afraid of this lesson. But the first lab make me feel friendly, after finishing the lab I felt proud haha. Indeed, the full English teaching is a big challenge for me. I sometimes become absent-minded in class, when there is English, the frequency maybe a litter higher. Because the non mother language requires higher concentration. Most time when I find myself absent-minded, I begin to read PPT in my iPad. I also found that the textbook writes very clear. Beforehand I always only listen to your explain but barely look up, I think I should change this habit. I think there is a little too many PPT pages, which makes me difficult to turn pages and find key information when reviewing in time. If possible, some information can be converted in one PPT page. I disagree the opinion that the knowledge is learned in organization should not be repeated. For example, I have missed some details about cache, and the review is helpful to me(the organization PPT is also useful). When I meet problems, I always turn to my roommate, she is very focused and willing to help me. Compared to asking teachers, asking peers makes me feel more free to organize my language and question. (sometimes I even can't express my question explicitly)

In the first two years, I always thought that graduation, work and life were so far away from me. But when in junior, I suddenly feel that they are coming soon. Some days ago I read an article, which said that Chinese all have an age anxiety, that is to say, when you arrive the age, you must do something, otherwise you are defined abnormal. Therefore, there is no real gap year in China. At this stage, my preliminary plan is go to abroad for further study. My senior and my parents all support me. Because my grade is not so good that can obtain a postgraduate recommendation. To tell the truth, I don't so resist postgraduate entrance examination, but the cost performance is so low. Originally I can use this year to work, to travel(in my dream), to do all the things I wanted to. So I don't want to be fettered by exam oriented education. I'm preparing for the IELTS and other information. I want to see the outside world.

\*\*\*09\*\*\*

I have to admit, I was touched by these warm and powerful words.

To be honest, the experience of last semester's Computer Organization course decides that I would never like Verilog, Sword, or even Computer Architecture. But as the assignment put it, "Taking a course should be rewarding in many possible ways", and I do be rewarded beyond computer architecture principles. Take the English representation. I never thought that I could speak English fluently with so many jargons, without referring to notes. In fact, our group were to just read the notes bellow the slides if there had not been some problem with the projector and we failed to show slides properly. Nonetheless, I appreciate this incident, for it pushed me to drop the notes and justified that I do not lack the ability, but courage indeed. Another reward is this assignment, which spares me a whole morning to reflect and retrospect on the verge of midterm examination.

Making goals or plans always drives me weary. But I am not such person who follows one's bent and can just up and go. Rather, I am afraid of making a goal because I worry about not being able to accomplish it. What if I only make useless effort? What if others deride me as quixotic? One sentence in the assignment expresses me deeply: "Being at such a young age, you have infinite possibilities...". With vigor and promise, young should not make such fuss over nothing, because we can err, and we should try and err.

"What are you? This moment." is my favorite quotation in the essay. We are always asked such questions as "what is your ideal life?", which, in my opinion, is a little childish. Maybe rather than depict the ideal but illusory phantom, we should embrace and make ideal our current life. I had regret to choose CS as my major, hating coding, debugging, and the foreseeable 996 working scheme. But gradually, I discover my interest in Computer Graphics and find out that the dull keyboard can also be associated with the colorful balloons in the Disney-Pixar UP. I still don't like coding, but at least I am learning to accept and appreciate it.

如果再给你一次机会，你会选择稍微不如浙大的大学学你喜欢的专业吗

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发表于 2022-10-28 21:46:57 该帖最后由 作者在 2022-10-29 10:32:39 编辑

196 1 评分 引用 追踪

Well, so much for these pretentious and intelligible words. Hope I didn't bother you :)

\*\*\*10\*\*\*

Computer Architecture is the last hardware course of my undergraduate career, following Data Logic and Computer Organization. I really appreciate that I have met kg in my college life, who is keen to communicate with students. Although there is a lot of overlap between Computer Architecture and Computer Organization, I can learn a lot from the well-prepared classes. To be honest, I hope I can get more about how to deal with the final exams in the class, because the score I will get in this class is important to some extent.

I think I am still not sure what I would like to do in the future. As it becomes harder and harder to find a decent job nowadays, I suppose that it is necessary to get a master degree to improve my professional skills. To be honest, I'm not such a talented student who is able to gain high grades and become top students. In the following year, I will try my best to be recommended for admission candidacy. In the future, maybe I would enter an IT company like many other computer science students in ZJU. I hope that what I have learned from the class will enable me do work better than others.

\*\*\*11\*\*\*

Dear teacher Bu:

I think the computer architecture lesson taught by you is really excellent. In my three years of classes, your classroom atmosphere is quite good. However, I still feel a bit challenge in this class, most of the reason is my English is not really well and little of it is the course is a little difficult. The architecture is from Postgraduate Courses and is a expand of the Computer Organization and design, while I will really make effort to learn it. Maybe the reason to hold back the impulsion to ask question is I can't catch up with all the time just in class, and I need some time to think what I really don't know.

As for me, I plan to pursue a higher degree and do some research in my future. Therefore, I need to improve my GPA in the third year and do some research project in advance. I really hope I can reach my goal and get a satisfactory offer in the forth year.

\*\*\*12\*\*\*

For this course, I hope the code could be noted more detailly if provided for the course. Moreover, it is better to provide a gitbook and public slides step by step just like Tsinghua's uCore OS Labs.

For me, well, I'm in the 4th year now and just finished the autume campus recruitment. The future after graduation is just vivid for me - leaving me home alone for an uncertain future. My plan is to accumulate for about 2 years and try to return to the East for more.

\*\*\*13\*\*\*

First of all, I'd like to thank kg very much at the beginning for this assignment and this passage. For architecture for his I know this course is an extension and deepening of computer, we have no way to go for a brief experience in the course of time all aspects of the course mentioned, as we have no way to know a lot of things, but we can do is to know what they have learned, not just quickly swallow it, In the end it just doesn't get to the bottom of it. The biggest problem in the course of learning system is that my English proficiency limits my understanding and internalization of the knowledge in class. Most of the time, because I need to spend a lot of energy to translate English teaching into Chinese to understand, it is easy to lose my mind or thinking in the process. However, since I have chosen this course, I need to overcome this difficulty by myself.

As for some life planning, thank you very much kg these very powerful sentences, after reading very touched and very want to cry. After entering the junior year, I often feel confused, without a clear plan, and not very clear about my suitable direction. In many cases, I envy the tech geeks around me. After all, they love their industry very much and know that they want to engage in development or scientific research in the future. I really want to be a master of technology, but I often feel anxious because I find it difficult to achieve such a goal. Under normal circumstances, we need gentle efforts and a calm attitude to meet everything. Only in this way can we feel sufficient and practical while improving our happiness.

\*\*\*14\*\*\*

I am quite confused about my future. Even I am not sure if I will continue to work in Computer Science. My goal and plan are still being pending. I have always dreamt changing the situation, however, I just fail to do that up to now.

However, I am in deed encouraged by your words. So I am sure that I will gather my courage to make my choose.

Until now, I don't have a very clear direction. I have to say that I have taken a lot of detours to explore the direction before, but the road cannot be smooth, it is all the experience of life. If there is one goal that is farthest away from the present, I think it should be to create a successful business. What is success? For me, it is to do what I like, and for others, it is to bring value to others and meet the needs of target customers. Why would there be such an idea? I think on the one hand, it is because I am a somewhat ambitious person (the professional class teacher also commented on me), on the other hand, I joined ITP in the second year of my sophomore year. After a year of edification, learning and practice, I think entrepreneurship is really attractive to me.

What field should I start a business in? My current thinking is in the field of technology, and to be more specific, the metaverse. I want to do this not just because the metaverse is hot recently. Instead, I read a novel when I was in junior high school, which told about entering the virtual world through a helmet, playing dungeons with other people, and clearing the game. From now on, it should be a VR game.

Maybe it was because I was addicted to online games at the time, so I was excited to experience the virtual world for the first time. I felt that I experienced a completely different world through that novel. When I grew up, I started to feel less interested in games. On the other hand, after seeing a game that reduces the dimensionality of the current game, I am not very interested in the current game.

By now, there are so many directions to choose from that I have to search for my original childhood dream. But even focusing on the VR gaming industry, there are so many directions. There are computer graphics for rendering and modeling, computer vision for recognition and segmentation, human-computer interaction and related equipment for entry into the virtual world, virtual currency for financial systems in games, and architecture design of the entire system... .... With so many directions, how do I choose?

Maybe I can use the method of exclusion, tokens, to act as a bridge between the virtual world and real world finance, and it is easy to cut leaks, but I am not very interested. Computer vision, the application is interesting, but the interpretability is insufficient, so my heart is not at ease. The remaining three directions, one is the direction of partial system and architecture, one is the direction of human-computer interaction, and the other is the direction of computer graphics.

Unfortunately, I haven't decided yet, these three directions are also so big, and there are many small directions in the big direction. And I don't have much time left, because I want to further study in the future, and I want to go abroad to study for a PhD.

Why choose a PhD? The biggest reason is that foreign Masters are too expensive. Otherwise, using the Master as a springboard and familiarizing yourself with the foreign environment may be a more secure choice. Unfortunately, due to family reasons, I cannot afford this price. Of course, I know that in addition to the Master of Philosophy, there are also taught Masters in foreign countries, but there are too few programs for the Master of Philosophy, and the choices are very limited. So, if I want to go out and see, the only way is to apply for a PhD. But at present, the direction has not been determined, there is no publication, and there is no entry-level scientific research... I feel a sense of powerlessness, but anxiety does not seem to change anything.

Why choose a PhD? On the one hand, I have to admit that foreign countries are ahead of China in most areas of computing, whether in academia or industry. I want to go out and meet. On the other hand, foreign Masters are too expensive. Otherwise, using the Master as a springboard and familiarizing myself with the foreign environment may be a more secure choice.

Unfortunately, due to family reasons, I cannot afford this price. Of course, I know that there are MPhil programs in addition to lectures abroad. However, MPhil programs are too few and the choices are limited. So, if I want to go out and see, the only way is to apply for a PhD. But at present, the direction has not been determined, there is no publication, and there is no entry-level scientific research... I feel a sense of powerlessness, but anxiety does not seem to change anything.

My current thinking is to try the field of computer graphics first, I may have chosen the hardest path, after all, siggraph is too hard. The first important factor in applying for a PhD is connection, and connection is based on publication. Without publication, it is impossible to do anything.

Maybe, I'm thinking too far now, I haven't even entered the door, why do I still think so much? (self-deprecating)

There are currently 37.5 credits in this semester, and the pressure is relatively high. Currently, I plan to drop a course in the middle of the semester, and then drop a minor course in the winter semester.

While ensuring the mastery of professional course knowledge, try to focus other time on direction exploration. The original plan was to participate in paper submission, paper writing, experimental design, etc. at the end of the last semester of the junior year. However, at present, this goal is very difficult to achieve, and in this case, if I can determine the direction in the last semester of my junior year, I will be satisfied.

This semester, I am taking a business model course. The teacher assigned us an interesting task, that is, our own business model. I thought it was very novel and tried to write it. However, when I drew my own business model, it looked very ordinary. It seems that from the perspective of a relatively large business model, everyone's life is almost the same. However, if it is small to a lot of details, everyone is walking a very unique path. For me, I need to find my own path and go down. I think the sentence in Kai Ge's title is very good, "See the world not as it is, but as it should be." Perhaps, I want to change the world into what I want.

<p>KP重要合作 Key Partnership</p> <p>老师 同学 朋友 学长学姐</p>	<p>KA关键业务 Key Activities</p> <p>运动技能 学习 煮饭 找到适合自己的初期</p>	<p>VP价值主张 Value Propositions</p> <p>健康你身体 知识体系, 关键能力 核心价值 功能价值: 帮助 善意 自我实现</p>	<p>CR客户关系 Customer Relationships</p> <p>myself 血缘关系 友谊 陌生人</p>	<p>CS客户细分 Customer Segments</p> <p>me 家人 朋友 其他人</p>
<p>KR核心资源 Key Resources</p> <p>运动技能 学习能力 沟通能力 交际能力 判断能力 悟性</p>		<p>CH渠道通路 Channels</p> <p>定期锻炼 线下线下各种活动 线下见面 or 线上 日记, 博客 学习, 实践, 总结, 复盘</p>		<p>RS收入来源 Revenue Streams</p> <p>身体健康 家人的支持 朋友的帮忙 陌生人的感激 自我实现</p>

\*\*\*16\*\*\*

1. what is your goal after graduation?

**Answer:**

I will continue my graduate study in this school, and I think the research direction of operating system is suitable for me and I'm really interested on it.

2. What is your plan to achieve that goal and what challenges might be involved?

**Answer:**

I want to take part in a lab where research computer operating system in next long term, and current I'm learning something about embedding linux and linux kernel.

3. How do you manage to be motivated and determined?

**Answer:**

Try to do some useful project which can help me learn more knowledge and deep my understanding.

4. What helpful advices or suggestions did you get from senior students and professors

**Answer:**

In the case that internet winter, to do something about hardware may be more wise.

5. What suggestions would you like to offer peers with similar goals?

**Answer:**

To learn more knowledges, and whatever you learn will be useful sooner or later. It will also add another possibility to your future.



\*\*\*17\*\*\*

At first I can't adapt the pure English class because of my poor hearing. And I feel tired to pay attention to the class. These days I can follow the class a little, but I still can't understand all. For me, the reason why I didn't answer or ask questions is that I'm afraid of making mistakes thus classmates will laugh at me. Otherwise I feel awkward if everyone puts their eyes on me and will be very nervous. I think someone may have the same thought as mine. For suggestion, I guess it will be better if the class is small and the number of students is little. I have another class named iavi, which only has 12 students in class. So I always sit in the first line so that there are no eyes on me in my sight when I answer questions. In this way, I can answer questions without burden(The permit of speaking Chinese may be another reason).

I want to continue my study for computer science after graduating. But I have no hope to guarantee the postgraduate recommendation. Now I hesitate about going abroad or joining postgraduate entrance exam. I'm preparing for applying for college in America, British and HongKong. And I'm looking for some research that I can participate in to improve my experience. However I'm afraid that I can't get good offers. In my view, I go abroad to get better education not for the diploma. If I can't get an offer from some good college, then I'd better not go out. Thus I probably need to prepare for the postgraduate entrance exam, and I feel large pressure.

Another problem is that I don't have an exactly direction for the future research. I have taken a lot of classes in different directions. But I still can't choose one that I love most. However after taking the database system I think I don't like it at all. Now I feel a little interested in computer graphic or vision, as well as the computer architecture(I have met three excellent teachers in DLD, CO and architecture, that's an important reason). But I feel architecture may be difficult for me because I'm not familiar in hardware.

\*\*\*18\*\*\*

First of all, I am very lucky to be able to take the architecture class of Pro. Bu. In fact, I have heard from other students that you are very kind and get along well with students. After taking your class, I also feel that getting along with you is more like getting along with seniors. There is not much of a generation gap between us, and we can communicate freely with all kinds of questions and ideas.

I have always believed that the important thing in university courses is not learning, but the penetration between courses. Many times you will find that when you learn the architecture, you can think of operating system-related knowledge. After learning assembly, you will have a better understanding of C language. So I think that the focus of universities is to integrate, and a good course in optics is definitely not enough.

As for career planning, I actually spent two years in the university, so I definitely have some ideas about the future. In the future, I may not plan to engage in scientific research-related work, because after entering the laboratory in my junior year, I gradually felt that I was not motivated by the enthusiasm for scientific research. In contrast, I will be more inclined to engage in software development related work. In fact, I have also worked hard for this slowly, and developed some web pages and applications in the school organizations I joined. Maybe I won't be famous in the future, but I believe that as long as I can live comfortably and fully, it doesn't matter what kind of work I do.

\*\*\*19\*\*\*

I think the biggest challenge for me to learn this course is that I cannot well understand kg's accent of English(this is mainly my personal problem). Some extracurricular readings or alternative courses maybe helpful for me.

My goal is to become a software engineer. So I'm trying to write some projects, and then look for an internship next semester. At present, what bothers me is the conflict between schoolwork and extracurricular learning. If I choose to do something more helpful to work skills, it could do harm to my schoolwork. Another consideration is whether to study for a master's degree or work directly after graduation. My current thought is to work directly. If I want to return to campus someday, then I can also use my work savings to apply for a master abroad. I don't know whether this is a good choice.

For those who have the same goal as me, I will suggest them to read [csdiy.wiki](https://csdiy.wiki).

\*\*\*20\*\*\*

Hello kg!

My teammate jr has told me that he suggest you pay more attention to my assignment-Q6. Well, it makes me feel nervous at first thought, because I have to carefully consider every sentence I have written, in case I write something wrong. But after a few deeper consideration, I find it a great opportunity than a kind of burden. This letter is not an "answer" to the question 6, just a "carrier" of my thoughts on goal and plan -- as mentioned in the question. So...I will take it easy, just share my thoughts and feelings (even ignore the grammatical errors, haha).

As for my goal and plan... in fact, I'm still confused. I once consider that a PhD degree is the best choice. However, the original motivation is just like pursuing a higher score in gaokao -- to achieve a goal that is widely acknowledged. But in the past two years, I gradually realized that there are many different ways to self-actualization. We are not lived in others' opinions. I totally agree with it. But I am still a little confused, because I don't know what the life is like when I choose working after graduation / pursuing graduate degree / studying abroad ... Maybe I'll be more determined when having experiences of each of them.

My preference is to pursue graduate degree, Phd in particular (why not have a try, I think). And interestingly, a few weeks ago, I casually delete "comparch2022/index.html" from the url of course website, I find kg's personal website (which is expected [ac01]). And your [article](#) really helps me. And I realize that there is a lot to catch up on, like participation in some researches. In the past a few months I put all my energy into the courses... it's necessary to set some aside for research.

What's more, I have considered studying abroad... yes, my goal is to apply a PhD overseas (at least for now... oh, I'm already junior /cry). And I am preparing toefl for it. But with so many colleges and professors, the choice becomes a big problem. So what does kg think is the best way to know a college / a professor?

As for the future, maybe I will try to be a college professor, but it's hard to say -- It seems so far away. For now, I have to work hard, and spare more time for research... (wow, considering the goal and future can make me realize that I have a lot of things to be done -- a sense of urgency)

Best wishes.

\*\*\*21\*\*\*

I think I have made my decision but I am not sure. I think I can achieve my goal but I am still not sure. I started to find my goal early when I stepped into the college. After struggling for a period of time, I went on a journey to Shanghai and had a close visit into the company I was looking forward to. It was at that time that I made my decision to be excellent enough and be able to be invited into this company as a formal employee.

This company do excellent work in game making, in the meanwhile I enjoy myself in game playing. I want to be surrounded by an energetic and passionate environment where everyone can put forward some interesting ideas without concern. I want to be with someone who are talented and have an interesting soul. That's why I want to be there.

However, it is not that easy. The requirement is tough. Only someone with the extraordinary ability in computer technology and rich experience in working can be admitted into the company.

The first thing I pursue is to make myself qualified. Therefore, I work hard with my study and keep improving professional skills. Then, I expected myself to be involved in CAD&CG lab and major in computer graphics. The problem is, the competition is so fierce that I am still not sure whether I can make it.

I am not good at asking for advices. Therefore, few people shared their suggestions with me. Someone may laugh at such a shallow life goal like being involved in game making. But I will push forward. Pursuing with no teammate is a very common thing.

\*\*\*22\*\*\*

Well, by learning computer science for 2 years, I have got a rough image of this subject. To be honest, I still have no clear picture of my future after graduation. I always get advice like trying to build your special project or participating in research as early as possible from senior student. However, I have little interests in building softwares.

One possible direction that interests me is numerical computation. But my math is not very good and there are lots of methods I have not learned. And the most important thing is, I don't know whether I truly love it before I dig into it. Fortunately, I can learn from online courses. I decide to learn these courses in my third year in university, and after I have got basic knowledge, I want to contact with professors working in this field.

\*\*\*23\*\*\*

Hi, Kg.

I've been quite frustrated about hardware since computer organization course. I don't want to recall the awful experience in computer organization and I've once thought computer architecture would again be a torture for me. But I think, things are going better now. I'm now more interested and confident in hardware, thanks to the well-designed labs, the clear illumination on course content and the ease brought by the intimacy among students and you. Thank you for your devotion.

I highly suppose it a good attempt to let students give presentations on recent hardware researches, through which I gain a more profound insight into computer architecture and simultaneously practise my spoken English. I've never given a speech on something to do with my major in English actually and before I was on the stage, I always thought I would be tongue-tied. Yet when things turned out, I just did well enough, at least to my own criteria.

I've been searching for my goals for quite a long time, and I've been vast and hazy for quite a long time. My interest seems to be always varying with the time. But at least, I'm going forward, pace by pace. I know my attempt on some field is never fruitless and will finally help me in some time in the future. What I know now, is that I want to work with c++, and for the reason, ridiculous as it may sound, is that I highly appreciate its elegance, ranging from managing resources by programmer themselves, to some tricky idioms.

For the future arrangement, I'd like to get a master degree in computer science in ZJU. It would be best if I can be exempted from Admission Exam, but because of my poor performance in Computer Organization, I have to focus more on my study to ensure that. And after I get it, I would like to get a job in either Hangzhou or Shanghai, which is near my hometown. If I can get a offer from BAT, it would be best. But I know, only students of hardworking deserve it, so I will try my best to push myself to be a more excellent student.

Thank you again, Kg, for your great contribution to the course and your great concern on our future development. I really think it of vital importance to find our goal, as for myself, I can only focusing on studying for a long time when I know what I want.

For the only piece of suggestion I can think of, is that I think you're taking too much time on making your lecture consecutive. For instance, when you switch ppt to the next page, you sometimes take too much time before focusing again on the main content you want to show us. That is, too much conjunctions are made during the lecture. Without this, I think you will be less troubled with the problem of running out of time.

Bless you with promising future in research.

\*\*\*24\*\*\*

Dear kg:

*Two roads diverged in a wood, and I took the one less travelled by. --Robert Frost*

The road to choose is what I agonized about. Once I dreamt of being an AI engineer when I marveled at its dominance over games like chess or mahjong. I hope that I can combine AI with finance, which is called quant, to earn a fortune. But after I entered the university, I learned more about AI. Suddenly I found how naïve I was. AI is not as funny as I once thought. It relies on repeated guesses and trials of structure and the coefficient of the network, at least for those who lack creativity like me, and massive hardware resources like graphic cards. And this field is much more involuted now. Only the top students in the top2 universities can be hired by excellent quant companies.

So later I decided to be a common software engineer instead of a scientist. At first, I want to hunt for a job just after my undergraduate. Yet the severe situation of domestic IT employees discouraged me. Although they enjoy a satisfactory salary, they have to bear 996 which stands for an unbearable workload. Thus I turn to overseas companies, especially the top companies in the US. It requires a US university degree to apply for a visa and to adapt to the local environment. As for me, a master's degree in CS may be suitable as it is job oriented.

Therefore, I am struggling with TOEFL now. You see, my English is very poor. I have to refer to the dictionary before I write down each sentence. And like most Chinese students, I suffer most from speaking and writing among the four subjects. Besides, my family does not support me much. They are afraid of the tense relationship between China and the US, and they need my company as I am the only child in the family. So I am still kind of tentative.

Your English teaching helps me in learning English to some degree although it is a bit unclear to me. And what may be beneficial is to group the students who have the same goal together in a QQ or Weixin group so that they can communicate with each other without disturbing others.

Anyway, thanks for your dedication! :)

Yours, sincerely

???

\*\*\*25\*\*\*

Maybe the real challenge for me was the increasing complexity of lab code, especially when most of their content was already given, which required me to second-guess the creator's intentions and analyze the meaning of each signal.

I plan to go on to graduate school after graduation. Maybe? As for the plan, I plan to strive for postgraduate admission. If not, I will take the postgraduate entrance exam. However, my ultimate goal is to go to work. The reason why I study for a postgraduate degree is that the salary and treatment of a postgraduate degree are better, especially in some units that focus on qualifications. As for the rest, I didn't think too much about it. I might go abroad for a one-year master's degree, but that's expensive, that's all.

\*\*\*26\*\*\*

At present, I plan to continue to study for higher degrees after graduation, so I plan to lay a good foundation for undergraduate knowledge at this stage, and on the basis of this, I will properly understand the direction of discipline expansion, and choose the field of interest to focus on relevant knowledge; In this process, it is likely to face challenges such as insufficient time and energy and difficulty in choosing the direction of further education; In terms of self-management, detailed and appropriate plans can bring appropriate positive feedback to improve enthusiasm, and mutual encouragement with students can enhance confidence and determination; From senior seniors and professors, I got a lot of specific information about the direction of further education, which is very helpful to my life planning; For peers with similar goals, I suggest that we must think carefully and weigh carefully before making a choice, which can prevent us from blindly moving forward and losing our goals.

(目前,我毕业之后打算在继续攻读更高的学位,因此我计划在现阶段打好本科知识的基础,并且在基础之上适当了解学科扩展方向,选择自己感兴趣的领域集中了解相关知识;而在这过程中很可能面临时间精力不充分、难以抉择深造方向等挑战;在自我管理方面,详尽得当的计划能够带来适当的正反馈提高积极性,与同学们的相互鼓励能够增强信心和决心;从高年级的学长和教授那里,我得到了许多有关深造方向的具体信息,这对我的人生规划有很大帮助;而对于有类似目标的同行,我建议在做选择之前一定要进行审慎地思考和仔细地衡量,这可以防止我们盲目前进而丢失目标。)

\*\*\*27\*\*\*

As a student hoping to get a good grade at this course, I'm undoubtedly worry about the final exam, worry about whether I have truly understand the knowledge taught in class. But just with the English slides and a few exercises, I can't get the confidence of what I have learned. More assignments are actually my prefer. Also, I'd like to see more examples in the class to show how to use the knowledge, more complex examples than those in the textbook.

As for my plan for future, I have to admit that I'm still finding my goals. That doesn't mean I have done no thinkings, but based on my limited views and experiences, I'm still in a state of confuse facing the choice of my life road. Maybe I'd like to work in some IT company? No matter what, I'd like to get a master degree before I go to work.



\*\*\*28\*\*\*

After studying 2.5 years in ZJU, Computer Architecture is the greatest course I have taken, not only because this course teaches me a lot in computer hardware, but also thanks to Kai ge's consideration about our growth both in study and life. Kai ge gets along well with us and gives us humanistic care which a superb university should have. Although all English teaching is a little hard to follow and easy to get boring, it is indeed an opportunity to learn English listening! The only problem is that a lot of knowledge has been taught is Computer Organization, many students may not like to learn it again. Maybe we can focus more on parallelism.

About myself, I am at the edge of postgraduate recommendation, it is hard for me to tell which one I like, work career or doing research. My goal to study computer science is determined since my junior high school when I first contacted a game Minecraft. Afterwards my goal is to develop a video game. However, recent years show recession in the game industry, consequently I have to reconsider my future goal. What I know is that my family needs me to convert my education to money. So I tend to apply for an overseas graduate to improve academic qualifications to acquire more competitiveness, then get a good job to become economically independent. Maybe I can keep my hobby of developing and playing games in my spare time.

Finally, thank to Kai ge for this precious assignment. I sincerely wish you to find your beloved girlfriend asap!

\*\*\*29\*\*\*

Dear kg:

I have sought a lot in this semester about how can i study well, maybe, what i really want is that I can live an unhurried (想表达的是从容) life. Before my “philosophical thought about life”, the answer to “how to learn this course well” ,for me, is just devote enough time. When you really spend time and want to learn it well for this course, the way suit for you to learn it well natural go to your head. Be practical and realistic to each question, to each lab and to each course is also a way enough for every student in ZJU learn every course well, however, it is not a easy thing since so many things may distract our attention.

About this course, the biggest “barrier” for me is English. It does not mean teaching in English is “bad”, it means, i really need spend some time to improve my English. In a word, this course taught by kg is good enough, different teacher has different way to teach, hope kg can spend more time on finding a way that you can enjoy your teaching (if a teacher enjoy his teaching I think its course must also be enjoyable).

For me, although i still can not figure out every thing in my life, i know one day, i can be more “从容” in my life. I think i may like studying and doing research. this thought is just like a seed burried in my deep heart i think. I hope one day, it can become a tree. Maybe what i am talking about is strange, whatever, let it go.

Finally, i like a word to describe myself, it is “weeds”, why? i like a sentence in chinese “野火烧不尽我们的野生野长”. So many things may like wild fire which may discourage our enthusiasm, but for weeds, it is just does not matter. And after the fire, it can grow stronger, just like “What doesn’t kill you, makes you stronger ”, difference is i am just weeds. Last thing, thanks kg for your wish that hope every student can enjoy your course and i also hope you can also enjoy this course(maybe already).

\*\*\*30\*\*\*

To Dear Professor Bu,

To be honest that I can hardly understand What I should write here. It seems like that I should only answer some questions blow your essay, but after I see some template, it makes me more confused. I can feel your passion on this course and you concern for us. In your class, it is the first time that I feel the atmosphere of University :-).

As for this course, I think I can learn more thing in this course than in Computer Organization:-(. Recently, I feel that the content of Computer Architecture is similar to Computer Organization, maybe we will learn something different in winter semester.

Now let me answer the questions in your essay `owo`.

1. My goal after graduation? Well, I am also confused about this question. On the one hand, maybe having a Master degree can give me a better work chance, On the other hand, I lost the interests on studying. So now I can't answer your question, maybe I can determine my choice gradually.
2. For the plan, maybe try to cross the exam of Master is a good plan? That means I should prepare well in the coming year. As for the challenges, maybe my laziness, the passive attitude, and the difficult content are the biggest challenges.
3. I don't know what can motivate me and determine my goals. Maybe a better future? But the future is so far that I can't see it.
4. Suggestions I get from : In Professor Bu's class his spoken English is so good that I can understand a lot although I have a poor hearing, and from that I get that I should practice my hearing English. When I tried to finish our experiment, I faced and I will face many difficulties, our classmates are so kind that they will share their experience, one day if I have a chance to help others, I will try my best to help.
5. Suggestion I offer to: In fact that I don't think I have the qualification to give others, because I haven't built some relationship with classmates. So far, I can only see their advantages.

Well, that's all what I want to say after reading your essay. There may be a lot of grammar fault. :-)

Lastly, I want to appreciate I can meet such a good professor. Thank you!

\*\*\*31\*\*\*

First of all, I really appreciate to attend kg's class. The first week I met kg, it gave me a feeling that he would be not only a teacher but also a professor who treats his students as friends with kindness and passion. It will be a real challenge for me to learn this course especially since the lectures will be held in English which makes it harder for me to catch up. However, regular preview and review will help a lot. As for the future plan, I really want to pursue a higher degree if the condition permits. But because of the weakness for me in coding, I'm not sure whether continue to learn CS and work with it in the future. That is the thing really bothers me recently. All I have to do now may be just studying hard and try my best to improve my skills."Live a life you deeply enjoy and will remember." Thanks again for kg to bring us professional knowledge and some deep thinking.

\*\*\*32\*\*\*

Dear Prof.Bu,

Thanks for your heartfelt letter to us. Varying from general natural science courses to advanced computer science classes in the university, it's quite rare for me to encounter such a teacher devoted to education, wishing to facilitate the comprehensive development of students. I'm sure I will benefit a lot under your guidance, grasping more computer architecture knowledge and discovering my interest. And here I'd like to share with you some thoughts on my past, goals, and plans.

Before a vision of the future, let me look back to the past first. I was a freshman in computer science when I first entered the university, although I did have a taste of the programming language PASCAL in primary school. Thanks to my high score on the College Entrance Examination, I took CS as my major without an interview (otherwise I might not pass the intense competition, LOL). Many students around me chased CS keenly due to high salary, promising careers, and mainly herd mentality I guessed. Admittedly, I might be affected by these factors, but I was aware (though not very confident at that time) that I was interested in CS, based on my experience as a child and learning C language on the summer vacation. It turns out that interest, which grows either by nature or by nurture, is the best teacher as an old saying goes. I tried my best to achieve good academic performance, become adept at my major, and be enthusiastic about learning new knowledge over the past two years.

All along the way I just wanted to be a graduate of Zhejiang University, which seemed not hard for me, until this summer vacation. After a long talk with an estimable professor, I realize that I can jump out of my comfort zone and dream a bigger dream. Why graduate, not Ph.D.? Why not try to go to an elite university abroad if I can? It's said that the trial and error cost is the lowest when undergraduate. Different research fields are attractive to me, and just take a look and participate in some projects!

With this mind shift this summer, I choose a more tricky way to my future. Now I am busy with three aspects: curriculum, English learning, and research. Multitasking is a big challenge for me, but I have confidence that I will make progress by step, and the trip to be better than ever will not end.

Sincerely,

xxx

\*\*\*33\*\*\*

My major is Computer science and technology, but my GPA is not very good, so my goal is to work in Hangzhou. You can use what you have learned to have your own pure land in Hangzhou. I talked with my head teacher about my idea. My head teacher also gave me some useful suggestions, the most important is that he said to me: "we must learn the content of the third year, because the content of the third year has been in line with the modern to a certain extent, so learning the courses of the third year will be of great help to my future work." My roommate is also very helpful to me. He has good grades and works hard. I come from Yunnan and I have many difficulties in study. But with his help, my study became much easier. Therefore, I understand a truth: a good friend is the most important in college and society.

Due to my poor English level, I totally failed to follow the teacher's footsteps in the first four weeks, which also led to my missing classes. I can't answer the teacher's questions in class. However, I can see the teacher's enthusiasm for teaching. As far as I know, other teachers don't have a presentation, but we do. This presentation was very helpful to me. First of all, it makes me dare to express myself in English in class. Secondly, in the process of collecting data, I have a further understanding of the computer architecture. I think it's very good. For me, I personally think that for some difficult parts, we can explain them in Chinese, so that we can have a better understanding.

\*\*\*34\*\*\*

Dear kg:

Firstly, thank you for giving me this opportunity to rediscover myself. I still remember that at the end of last semester, many seniors recommended me to take your class, and I was glad to follow their advice. Before starting the first class, I think you just teach a good lesson and can tell the knowledge clearly. However, the first class gave me a different experience, which was different from other courses in the university. You are not only limited to teaching the knowledge of computer architecture, but also concern about our future and the ability to think independently. I am deeply moved.

I think the biggest challenge of this course for me is English. Sometimes, it's not that I don't want to listen, but that I can't understand English. But I tried to follow you when you speak Chinese. To overcome this difficult, I think it's necessary to preview before the course and I'll try to make it in future. Although my English is poor, I quite agree with English teaching. Besides, your course is active for there are many interactions, which is helpful to focus on for me. And your course covers a wide range of knowledge, which is helpful to have a better understanding of the technique's origin and development.

Well, let me get back to the theme. I plan to pursue a higher degree because I think the knowledge of computer is interesting and my current ability is still poor for the future work. I need to further improve myself. Although my current grade is not very good, I will always keep a positive heart and go to fight for my goal. I long for higher education and further exploration of knowledge.

Thank you again and please persist in yourself!

Best wishes

\*\*\*35\*\*\*

What held me back when I were trying to ask or answer questions in class is that my spoken English is not that good, and I'm afraid that the listeners will not understand what I'm saying. Although I can generally understand kg, I cannot express them in English by myself.

But what I have to admit is that the English skills is needed to a code farmer. And the presentation in class is more like a graduation defense. And the way to discuss and cooperate with others especially peers is also significant to us. I really appreciate the chance to stand in front of so many people and practice it in computer architecture class. I believe it will become a valuable memory.

I am truly thankful that at this time there is a teacher stand here and tell me: you need to think about your future. In the last two years, the problem with work do not worry me more like now. After making sure to taking part in the entrance exams for postgraduate schools, I must study CA and other subjects harder, trying not need to spend much time at reviewing them when preparing. If I am lucky enough(also hard enough) to pass the exam, I will come to the interview of kg's laboratory without stopping. And hope we can meet at that time. The learning and discussion atmosphere in the CA qq group has always been my yearning. And it was the first time that I met a teacher who could get along with students and cared so much about students' experience in class.(在这里想表达上课感受, 我也不知道用哪个词好了)

The teaching assistant sister's experimental guidance is also very detailed and practical. I would also like to thank my teaching assistant sister for returning every second~

End with the end of our group's presentation, push kg academician, push classmates learn CA, and push myself to a better one.

\*\*\*36\*\*\*

For me personally, the goal is a thing full of contradictions and two sides. Sometimes, when I see those big cows shine on the stage of China and the world, I always fantasize and hope that I can, in I have carved my own imprint on the history of mankind and passed on what I have created to others. But more often, when faced with the pressure of academics and the future, I always think that ,in the future , only guarantee the daily life of my family and myself is enough , then slowly sink into restlessness and slack.

Going back to the course of computer architecture, I didn't know the specific content of this course very clearly at the beginning, and now I gradually began to understand the connotation of this course. I feel that I have indeed learned something (and English listening).

\*\*\*37\*\*\*

在之前学过计算机系统概论、计算机组成的课程的基础上，我觉得计算机体系结构所讲授的知识在目前的教学进度来看并不是很难理解，因为确实有很多方面与计算机组成重合了。但是我认为跟着凯哥学体系的一大挑战是我的英语水平实在拉垮，我可以以零散的小片段为单位勉强听懂，但是全神贯注地跟下来对目前的我来说有点难度。所以我可能就更多地去关注PPT里面备注的亿些信息来配合。然后跟课程本身内容更相关的挑战是概念实在太多了，亿些缩略词刚记住转头就有些生疏。因为我之前的计组成绩就不是很好，所以也在和其他同学保持交流互相学习。

在我并不清晰具体的未来规划里，我承认自己可能没有科研报国的志向，物质的说，我想要在杭州找到一份工资待遇不低岗位，而为了得到较高的职场起点，我或许需要一份研究生文凭，但是这样也会迟滞我的职业生涯，或许研究生的学习内容也并不能对我的未来工作起到直接的帮助，或许我本科就业也不失为一种选择，这都是我在考虑的一部分。但是在观察了上一届的保研情况之后，这种不确定感又大大增强了，因为自己的成绩排名可能会处于线的边缘，所以我也得做好考研和本科毕业后就业的打算。这些东西我和同学也在不断地分享和讨论，我短时间内的打算还是加强学习上的投入，以达到保研为最佳预期，同时在寒假要开始准备练习以应对实习面试，了解工作的需求与自己现状的差距。我和一些学长也保持了交流，他们分享了他们的一些面试或是实习经历，我也有在认真听取并思考。作为十八线小县城考出来的没有特长的普通学生，没有类似的兄长亲戚的经历参考，我觉得自己没有放手一搏的勇气和底气，但是又觉得自己在选择面前畏首畏尾。我凭着走一步看一步半的心态学习到了现在，仍然需要拿这个学期的成绩作为下一步的依据。具体来说本学期尽力而为，假期刷力扣找找实习，看情况准备考研。

\*\*\*38\*\*\*

从数字逻辑设计开始，硬件课对于我来说一直是一门非常困难的学科。由于之前对这些完全没有了解，并且硬件的编程思想也与软件的编程思想相差很大，尤其是Vivado每次生成bitstream都需要近半个小时的时间，导致我每次做实验都十分痛苦。但是好在有凯哥和助教的帮助，凯哥帮我打好理论基础，助教再帮助我们弄明白实践的逻辑，相对来说，这次的上课体验，与之前相比，还是舒服很多的。

其实之前我也非常疑惑，为什么我们要学习硬件课程。随着年级的升高，不同课程之间的关联越发紧密，我才发现，所有课程实际上都是互通的，只会软件是远远不能满足要求的。就好像学习一个库的使用，只知道每个API是做什么的当然也是可以写程序的，但是弄明白API背后的执行逻辑，无疑会让我们更加有把握的编写程序，优化代码。而硬件课对我来说，就是一个学习具体的执行逻辑的过程。有了硬件的基础，无疑会让我们的软件的性能更加优秀。尤其是我日后想要进行CG方面的研究，对硬件的了解更是必不可少的。

其实现在上课，最困扰我的还是自己的英语水平。单纯听倒是也能听懂，但是根本没有时间记笔记，而不记笔记的后果就是听完立刻就忘了，而且非常容易走神。因此现在我选择的方式就是，以PPT为基础听课，这样就能够记下笔记了，也方便了日后的复习。

从我的角度来说，我还是希望凯哥在比较关键、难理解的知识点部分可以用中文讲，毕竟单纯用英文讲的话，我会有一个转化的过程，在知识点过于难以理解的时候，转化的过程就拖累了自己的听课，于是就整段都跟不上了。上一次课的时候，最后的那个知识点整段用中文讲，确实感觉容易理解了不少。

\*\*\*39\*\*\*

First of all, I want to divide me into two stages after graduation: graduate study and employment stage (I have no plan to pursue a doctoral degree at present, but I do not rule out this possibility, and I will not be included in this plan). Next, I will spread it out, paragraph by paragraph.

Postgraduate stage: At this time, the learning will have a strong direction, to be targeted at my possible future work (my current learning direction is computer graphics, but then you may change later) for targeted learning. If I can stay in the tutor's research room again, I will participate more in the science and technology innovation projects, expand my experience and enrich my background, which is also considered as one of the indicators of this stage. Of course, having a successful master's degree is the most important indicator. At this stage, I should also start to contact with various enterprises to understand their technical needs, and did not lay the foundation for my future employment.

Employment stage: I looked at the graduate employment quality report in recent years, the whole school and this major have. The first point of my attention is the matching situation of positions (professional relevance). From the whole side of the school, the data is stable at about 70%, and the position matching degree of this major (computer technology and science) has reached more than 95%, indicating that I do not need to worry about this aspect at present. However, what I have learned from my seniors and various forums is not the same as that mentioned in the school report, so I will not press the table first. The second point that I pay attention to is the level of professional ability and accomplishment of graduates and the needs of employers. I have found that having relevant professional knowledge is not the first aspect that employers should consider. Considering that the specific classification of each statistics is different, I can summarize the following four important points: professional ethics, independent learning and lifelong learning consciousness, the spirit of unity and cooperation, and the enterprising spirit. This will also be my hard work in the direction. In the first two years of employment, my plan was to find a more desirable job to stabilize first. I personally tend to work a little easier, but if the situation is forced. After stabilizing your job, you have to try to climb up and try to improve your value. It is relatively difficult to determine the target at this stage, because the specific aspects are greatly affected by the work I chose later. As for whether it is a private company or a state-owned enterprise, what kind of position (direction I am currently determined: computer graphics), I really can not predict now, because the professional knowledge has just begun to contact, the future is really unknown.

Suggestions from the mentor is currently focus on the current learning, can follow the laboratory senior senior do some project chores, gradually understand the progress of scientific research, experimental project steps, to understand the research progress of each direction, to confirm their specific scientific research direction, and learn relevant knowledge for bedding.



\*\*\*40\*\*\*

When thinking about problems, I rarely weigh strategies and always think about it. When learning the system structure, what is difficult for me is that the abstract hardware structure is difficult to understand, always only seeing the parts and difficult to take into account the whole, and difficult to keep up with the classroom is something affecting my interaction in class. It is always difficult for me to know what the teacher is talking about and always need to review after class.

In the idea of the future, I am a little confused at this stage. I may have no hope for postgraduate protection, and I can not make so much determination to take the postgraduate entrance examination, and I do not know where my interest is。

\*\*\*41\*\*\*

During my first two years of college, I heard the word 'confusion' a lot from the people around me. In fact, it's too common to feel confused at our age.

We don't know what to do after we graduate, we don't know what we should contribute in our precious youth, and we don't know what we really want. But I seldom feel like this. (I don't mean that I'm determined or impregnable). I say it for that I always find something to do and always do something to chase a better 'I'.

I don't know how to express, maybe this is my life creed. "Just do something to make you better".

When I was young, I want to be a carpenter. So I learn how to cut with a saw, how to make a chair or desk. During the learning process, I do my best to achieve my little goal, maybe I don't want to be a carpenter anymore, the time I spending on the learning may be a lost of time as your think. In fact, I don't think it's meaningless, I will never forget the learning and the sense of achievement when I make my first chair, which is still in use in my home.

In high school, I want to be a mathematician. And at 2019.6.7(one year before my College entrance examination), I post a blog like this:

2020年，清华大学，应用数学。  
我才17岁，还可以做很多事情。

That' my goal, but as you know, now I'm a zjuer majoring in computer science and technology.

I pay a lot for the goal to be a mathematician, but finally I choose another thing.

I don't regret these cost, because these are all for a better me.

The most correct thing for me, is just to do something without any hesitation, don't care about what it should be, just be sure that can make you better.

Return to the course, I feel quite hard for me to understand because of my poor English. After class, I need to spend too much time on comprehension. But thanks to the gorgeous PPT, it helps a lot.

I hope for more examples for the remarks in PPT.

\*\*\*42\*\*\*

If I understand correctly, this assignment asks me to write some feelings about the computer architecture course and future plans.

I always think that computer architecture is a very thoughtful course, and also want to learn it well (although mainly because of its high credits and I want to get a good grade), but for me, there are so many challenges of learning computer architecture, but all of them are my own problems. Sometimes I cannot fully understand kg's English lectures, and I didn't learn well in digital logic design and computer organization, that's to say my foundation is relatively weak. Besides, my verilog coding ability is relatively poor, so I may rely on my teammate too much to complete the labs. I have always wanted to improve in these aspects. As for the help I want from the teacher, I hope kg can give lectures about some important questions in the quiz and final exam, which will be of great benefit to students like me who has a weak foundation.

With regard to the future plan, in fact, as early as when I entered the university, I made up my mind to study further after graduation. At that time, I had not even determined my major. Later I was admitted into the CS department, and my grades were good in the first year, at least I'm very satisfied with it. That was the first successful step I took towards postgraduate recommendation. As soon as I came across the major courses in the second year, my grades gradually declined, and I once doubted whether I was suitable for this major. The admission line of postgraduate recommendation of CS has soared this year. This made me feel lagging behind (my gpa is 4.16 now, optimistic in previous years but no hope in this year), further into disappointment and confusion.

I come from a poverty-stricken county in Sichuan and I believe that knowledge can change my fate. I have been struggling with exams since my childhood, thus I'm good at solving problems mechanically but lack the ability of practice and experiments. So far, I have never entered a laboratory, zero scientific research experience. No internship, zero work experience. In terms of my study experience in past years, just dealing with homework and experiments almost consumed all my time and energy. Therefore, my initial idea has never changed and I still want to keep my gpa and spare no effort for the postgraduate recommendation in the third year.

Nevertheless, I didn't think I could make an academic mark. It was just a practical desire to get a better degree to survive the IT winter -- to get a good job in the IT industry. If so, I think my years of hard study reaches its full significance.

Choosing CS as my major is because of good employment prospects, I almost did not take other things into consideration. Fortunately now after two years' study, I neither like nor hate it. I noticed that kg mentioned in the previous section on employment or further study that "do both if your time and energy permit, see which one you really prefer." Maybe prefer here is a good word. There are probably students like me who don't like both but have to prefer one.

\*\*\*43\*\*\*

Dear Professor Bu:

This is the reply to question 6.

It's already the seventh week of this semester. It is a pity that I didn't learn that much on this course. It's not because Professor Bu didn't teach well, but my weakness on English.

For me, language is the biggest barrier of my learning on Computer Architecture. My experiences show that, it's difficult for me to concentrate on the class which are given in English, let alone take in whatever the professor taught. To be honest, I've hesitated to give up this course, but at the end I rejected the idea, because I've heard that Professor Bu is a conscientious teacher.

It's really hard to see interactions in college classes. Everyone is on his/her laptop or smartphone, so do I. Interacting with the teacher is always a challenge for me, from junior high school to college. One possible reason is that I'm afraid that my questions are so silly, or it's already told in class. It's the evidence that I was distracted in class sometime. And there are so many areas that I've not known yet. I didn't even know what to ask for start. So for me, keeping silent is the safest choice.

Personally, I wish Professor Bu can speak Chinese more often, though it seems to be unrealistic. Another suggestion of the course is that, Professor Bu can determine an order of the students who wants to check on the experiment, and call the number for the next when finishes one check.

It's a shame that I didn't have a clear schedule of my future. I always complain about the difficulty of finding jobs, but I don't know what to do right now. Just finishing my work before the deadline can make me satisfied. I'm living unambitiously, with the only dream to find a good job, and help my family live a better life. When material life become fulfilling, I will pursue the meanings of my spiritual life.

Thanks for the kindness of Professor Bu, I was deeply touched the first time I saw the message. Rarely do teachers do this. I hope I can learn more during the rest of this course, whether course related or beyond.

Sincerely yours,

\*\*\*44\*\*\*

Well, I found it very hard to find a particular goal at my pace; However, I may have some before. Many relatives and friends consider that I was extremely gifted in computer programming (as I had some achievements at high school in Olympiad in Informatics), and pushed me to learn this major. Somehow as a result, years ago, I dreamed to enter a laboratory and do some research in some fields of Computer Science; But after that I realized that I was really not quite interested and gifted in this subject, and was about to give up this thought.

As a more practical way, I would also consider to work in an IT enterprise, as many have suggested. However, I asked myself, is it that the way that I will be satisfied? I lived for others' expectations till today; I wanted to earn much money to support my single mother, and learning CS was the best way. But could I live in a brightened and enlightened life, that I myself could enjoy? I don't have many luxury desires, so do I want a disturbed life for work just to earn money?

I finally decided to follow my heart's desire. I laid my interest on History for years. I found I am more interested in how human society works, not a machine; Though I can learn it if necessary. Recently, I started considering turning to learn History when I finished my undergraduate terms. For that, I may start to prepare my exam for postgraduate, as it will be a hard way.

But would I be on that route at last? I cannot be sure. I found myself cruel, cold-blooded, and only thinking of my freedom and freiheit and libertas, considering little about my surroundings. Was I never satisfied with my designated way of life? I have lots of excuses to avoid binding myself to a single choice.

However, a man should never regret his own choices.

*Live a life that you finally get free when you died;*

*But not a life that others finally get free when you died.*

*--Ata-Malik Juwayni, the History of the World Conqueror*

\*\*\*45\*\*\*

I think the real challenge of this course is that it is difficult to be fully engaged in learning. One of the reasons is English teaching. Although I am not unable to understand English classes, the difference in language environment will cause my thinking lag. Sometimes the class can't catch up with the teacher, and then the whole class can't catch up. It can only be made up after class. Secondly, I am not good at learning hardware courses, and even have conflicts. The current course content also overlaps with the previous courses, which makes it difficult for me to invest in self-study after class, and the learning efficiency is low.

I hardly answer questions in class, because I know that some students know the answers, and I may be wrong.

I understand that my ability is very limited after graduation. Therefore, in order to find a satisfactory job, I need to continue my studies. However, due to the long-term lack of clear goals as the driving force for efforts, which led to the previous learning slack, I have lost the opportunity to guarantee the research. On the two roads of taking the postgraduate entrance examination and going abroad, I tend to take the postgraduate entrance examination. Because of my poor academic performance, my enthusiasm and determination suffered a certain loss. Now I can only learn every course as well as possible and improve the performance point as the goal of my efforts, without considering the lofty ideal. Even if I lost my enthusiasm, I did not lose confidence. I believe that as long as I can persist in learning, the future is still bright. I hope that after studying hard, everything will improve and I can regain my goal.

I am still at the exploratory stage and cannot make suggestions on course learning. In addition, everyone has their own learning methods. I don't think it is appropriate to make comments. I can feel your dedication to this course, but I am better at adapting myself than giving advice. Therefore, I am unable to make possible suggestions on the course itself.

Thank you very much for giving us this opportunity to pass on our inner thoughts. I'm also sorry that I'm not good at expressing myself and making suggestions. I hope that with your efforts, this course will become better and better.

\*\*\*46\*\*\*

Thank you for the teaching of Mr. Bu Kai, listen to your words, feel a lot. As for my goal, first of all, I want to go to graduate school, because now the employment situation is general, so graduate school is my best choice, if as expected, after graduation I want to enter the Internet companies for a period of time, after having a certain amount of money and energy base, currently have two plans. First, continue to stay in the Internet companies, step by step to the management, the second, and like-minded friends to start a business together, the pursuit of their own lives. The former may be more monotonous and boring, but this is not the majority of life. The latter comes with certain risks that will need to be evaluated in time, but it will make my life full of changes and challenges, and that is really the life I want to live. I'm still in the planning stage for the future, and I don't have a very precise goal. But my current mission is basically set, and that is to go to graduate school, and I will work tirelessly to achieve it.

\*\*\*47\*\*\*

Dear Kg,

I was so pleased that I could have such a chance to express my feedback to our computer architecture class.

The computer architecture class is so wonderful. I haven't attended such an amazing class since I entered University. It is not only a good place for us to practice English listening, speaking, reading and writing, but also help me understand some aspects of computer architecture that I had never discovered before. Its carefully designed homework, challenging labs and interesting classes all help me a lot. If my English listening ability could be better, I am sure I will have more fun at class.

Thank you again for the excellent class you provide for us. Hope you have a happy life every day.

Best regards.

Yours sincerely,

\*\*\*48\*\*\*

Frankly speaking the difficulty what troubles me most is not anything about the architecture theory or lab, instead, all of my pain is from the English.

Actually, as a student whose English is in a mess, I never learn anything in any cs-major-course of ZJU. What I can do is only learn by myself after class. At the beginning I often persuaded myself that class in English is for the Global perspective. However, what's the Global perspective?

Maybe, from my own perspective, is actually nothing about the language. What matter is about Curriculum construction. In my opinion, how to get the Global perspective is learn the Curriculum construction from top universities such as CMU or MIT or many many famous open classes like cs229, and so on. The class I appreciate most is the "Operation System" of NanJing University opened by Jiang Yanyan professor. That's the best Global perspective class in my mind. The quality of it can actually come up with the MIT. They learn anything from the top Universities except the unnecessary language. Sadly, the most classes of ZJU, learn nothing from the top Universities except of the English. (Of course, my English is in a mess, maybe for others who has a good command of English, the classes of ZJU are good, too).

That all is just a unimportant grumble of an English-hater.



\*\*\*49\*\*\*

I think I can talk about my thoughts for three days.

When I graduated from high school in 2020, I only wanted to learn computer and in the future create one game successfully. However, when I got into Zhejiang University, The reality forced me to rethink about my future. Partners around me all learned C well, even C++. But for myself, I couldn't understand the codes well and when writing a program, I always failed to implement it. So I had deep self-doubt. Then gradually I got bad and didn't study hard and lost in my future. And because of the epidemic, the employment situation in our country also became bad. The rat race intensifies in both university and society. And maybe only the best students in university can find a good job successfully. All these factors caused that I really don't know what I can do. I'm not cleverer than others and study programming more late.

But now, I gradually know what I should do. In the present era, the most important thing is being alive. For myself, There is no possibility to get postgraduate recommendation, and for an undergraduate, finding a satisfying job is almost impossible. So I will prepare to join in the postgraduate entrance exam and try my best to be a postgraduate of Zhejiang University. Maybe I lack the talent in programming, But I will work hard to make it come true. And in the future, in my opinion, I will be much satisfied if I can find a job that can support myself. To make it come true, I need to study in junior year of college and next semester I will prepare for the postgraduate entrance exam. Maybe I will fail, but the experience itself is also precious treasure for my life. Don't forget the meaning of journey itself. So, I think I'm not an eligible student, at least in the first two years. But in the next two years, I will work hard for my own future.

For the course, because I didn't study the computer composition well, it's hard for me to learn the course. And I think that it's too difficult to understand, for my oral English is not so good. But no matter our teacher or our teach assistant are both very good. And for reasons of my own, I don't like to interact in class. But I think the interactions in class are useful. The most important, the course is too difficult for me. So I hope that our teacher can show mercy in the future.

Wish you all the best.

\*\*\*50\*\*\*

b.  
Actually, I don't have a specific goal for my life at the time. Studying in ZJU and in Chu Kochen College, I am always surrounded by all those extraordinary classmates, which often makes me lost and keeps me doubting myself. Being showed of all the achievements of my seniors, I kept wondering can I become as successful as they are. After two years' study, I have already realized the limit of my ability. And in my third year, my goal is nothing but to graduate successfully and find an ideal job that I'm glad to devote myself to.

However, I don't think that means I would give myself up or abandon my study. Having known my own shortcomings, I need to work even harder to compensate for them, hoping to achieve the best result that I can. Concretely speaking, except for attending every class and doing all the homework and labs of each lesson, I need to make better use of my spare time. After all, finding a satisfying job is never easy.

Some people say that growth is the process of accepting oneself. In my opinion, discovering the gap between myself and others is not always disappointing, but

can somehow encourages to work harder for my life. Although I may not end up as successful as others, the result must be satisfying to myself without regret. To realize this goal, there is no reason for me to get slack.

\*\*\*51\*\*\*

### ***Course suggestion***

1. The arrangement of hardware courses is a series, with pre-digital logic design and computer composition. Therefore, there will be students who have not learned well due to many of their own reasons, and there are great difficulties in this course. I mean that this will be an objective problem, not a problem of the teacher in this course. As a student, I will hope that teacher will have more psychological presuppositions and patience for those students who are still willing to struggle instead of directly messing up. They are also anxious under the pressure provided by their classmates. But at the same time, I hope that our teacher don't blame his own teaching problems.
2. The lecture content is theoretical knowledge and is not completely synchronized with the experiment to be completed. But in order to complete the experimental work, students may focus more on the experiment than the theory. In addition, English teaching is more difficult to understand, and the learning effect may not be very good. But in fact, after carefully reading the PPT, I think it is very clear. But I don't have a clear understanding of the framework of the knowledge system, and I feel that there is a lot of scattered knowledge (which may be related to my inappropriate learning methods).
3. The exam will have calculation problems that do not have examples that can be learned and understood, and if there are more homework available on the PPT, and I hope to provide them on the PPT or more homework or some learning materials to give us exercise.

### ***My thoughts on my goal and plan***

My current vision of a future career is a product manager or a university teacher. I think that I would love working with people and negotiating collaboratively. I need to study and experience further to match my imagination.

Thank you for asking questions very sincerely, which makes me want to answer very seriously.

\*\*\*52\*\*\*

#### **main struggles of the class**

this class is mainly taught by English, and the lecture may not be so easy to understand, at the meanwhile, the PPT is lack of outline and make the lecture not so easy to follow.

lab and lecture is seperated, may be not so easy as Computer Organization.

#### **interactions in class**

I think it is not so necessary to have the interactions in class, which may cause embarrass and blank. As students always follow is few, so it is more interations with certain students than with total class, and some students may have their mind abstracted within the interspace.

#### **Goals**

I'm not pretty sure about the future field I would take, but I know I don't like the hardware, as the outcome may not be obvious and can't hold my interest all the time.

#### **Suggestion**

My suggestion to peers is hold the code and ppt of Organization, may do help with the lab, as I 'm about to foget the realization of data Hazard.

\*\*\*53\*\*\*

To be honest, my computer system concept knowledge is very weak. I had difficulty in the previous courses of digital logic design and computer system concept. In particular, the composition of the computer is an important foundation of the computer architecture, and the loopholes in the previous courses directly affected my efficiency of listening to this course. Even in this exercise, I also forgot much knowledge about cache. After a comprehensive review and doing some related exercise in reference book, I finished this assignment. But fortunately, this process always let me realize the feeling of harvest, even if the feeling of the road ahead is at a loss, I suddenly also increased confidence, can continue to go step by step.

Before this, I felt that the computer hardware course was not suitable for me. I could not understand the knowledge at all, and I was at a loss in the face of the experimental code. The idea that I could only understand software classes and write software code was ingrained in my mind. Therefore, in the previous relevant courses, I avoided a lot. In the face of the experiment, I just sat in a dull position. Subsequently, the head teacher gave me two remedial courses on computer system concept, which allowed me to successfully escape in the mid-term and final exams. At that time, I found that hardware knowledge was no different from software knowledge. I could understand and remember it, but I had fallen behind too much, and I was afraid to move forward.

In this architecture course, I should have tried harder to catch up and bridge the gap, but it didn't happen. Both the English teaching method and the quagmire caused by the previous knowledge shortage made me unable to move forward. At present, with the help of some Chinese tutorial books and some relevant exercises, I can still slowly fill up the holes, which does give me some confidence back. However, in the face of the pace of learning new knowledge, I still can't get rid of the pressure of despair. However, I know clearly that doing nothing will only change nothing, so I just need to keep doing what I can and walk the way that I can still move forward, even if it is just a little bit. I still have a little faith and pride in my heart.