**P 3**

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【ask】

Let's start, um, you can briefly talk about your professional background, and the development experience you have done, that is, how long you have done development.

【answer】

Because I studied computer science in my undergraduate degree, I have received some development projects since the second year of my sophomore year, and began to learn some development projects. At the beginning, I mainly started from Java , and did some , At that time , it was mainly based on course projects, and then gradually from course projects , just a few of us, for example, a few classmates formed a small team and would do some small development, and then later , it should take more than two years to the senior year . About two years, and then stopped for a period of time during the postgraduate entrance examination, and then after the graduate school, I did some with my supervisor, of course, at the beginning , and then some off-campus , and some institutions may need some computer software. Or programs , I'm helping them now, maybe doing some system stuff .

【ask】

mean that off-campus is a company internship ?

【answer】

Oh, no, there are some, for example, it has some institutions, such as training institutions, it may not be, it does not need to find a professional team to help it maintain an official website, for example, or it wants to develop a When recruiting the system, it may not be necessary to find a large team, because their budget is not that much, we will find some small teams or some professional personnel to help them do it, and that's it .

【ask】

Well, I probably understand, so you should still have three years of development experience, just two or three years . Okay, got it . Then one of our research questions is aimed at Chinese programmers and Chinese developers . Then we want to know the characteristics of developers. Let’s just ask a simple question. What are the characteristics and differences between people in other majors and other occupations ?

【answer】

I feel that everyone knows one thing, it is young, and for young people , he has a relatively strong ability to accept new knowledge, and then he needs to keep learning. This is what distinguishes us from other industries, the computer industry. The technology iteration is very fast. Others are related to computer systems , for example they write code. It is my feeling that when writing code on the Chinese side, generally speaking, they may spend less time on design, and they spend less time in discussion and argumentation. Compared with some foreign companies, this will lead to They may maintain in the process of software implementation , especially in the later period, and then there will be many difficulties .

【ask】

Well, you are saying that Chinese programmers do not do much discussion before actually implementing a function .

【answer】

It may not have done enough research in terms of research. For example, foreign companies say that I heard some students say the same thing in the company. They say that when they develop a system, such as a software development, They spend most of their time in the team doing arguments about the system, just talking about it , just talking about how the system is, how we should implement these things now, they have spent a lot of time on the design before writing the code . Most Chinese programmers, I think there are many small teams, they directly implement some functions after reading a requirement document. His maintenance of the code may not be so thoughtful. But in the later stage, for example, if we want to repeat a system, or do some expansion, there may be some problems, and then when we encounter some bugs, maybe also , this thing is not very easy to locate .

【ask】

Understood , this is based on your own experience to compare and get, right? And the experience of other students ? right. Well, I understand, so what do you think is the difference between programmers in terms of their learning habits?

【answer】

Because of this new technology, it may not exist after it comes out. For example, we learn from books. It may be knowledge from many years ago , and books present knowledge systematically. Programmers are, for example, a company that comes out with a For new technologies, such as the emergence of a database technology, some companies may want to use it. Because the technology has just come out, it does not have so many tutorials, and it may rely more on the developer 's documentation and official documentation . , when they are learning, it may be like a piece of knowledge . It may be used to look up documents, just like looking up a dictionary.

【ask】

It is relatively fragmented, without that kind of systematization , because the speed of its update and iteration is that the speed of software update and iteration is too fast, right ?

【answer】

Even if the maintenance cannot keep up with the progress of the software, there will be a situation of incompatibility .

【ask】

So this refers to the document itself, the programmer itself , from the point of view of learning , do you tend to teach yourself or ask someone else ?

【answer】

It must be self-study , accounting for 95% or more. Because it will definitely be faster if you teach yourself through the documentation . If you ask for help from others, it must be a problem that cannot be solved by yourself before you go. But before they use a new technology, let's say we use a new technology , we might discuss it. What are the advantages and disadvantages of this technology? How do I get to grips quickly .

【ask】

OK, so the next question is, can you briefly recall what new technology, new tool or software you have learned recently? What is the whole learning process? We want you to give a more specific example, that is, you start from hearing about the software or technology to start using this tool , learn this tool, and then use it for development or development. The realization of some functions, etc., is how the whole process is.

【answer】

I will give a specific example. Let ’s take a P ytorch , because I learned this technology before , because I used tensorflow a lot when I was doing deep learning . Later, I found that after tensorflow was upgraded from 1 to 2 , it was The difference between the versions is relatively large, and then it is right . The previous version means that the 2 version is not compatible with the 1 version , and then it was changed to the Pytorch framework . I probably started to learn and use it from March 21, so part of our learning is to go to the official website to check the documentation. Its official website has a 60-minute video tutorial. I probably browsed this video to know the basic architecture of Pytorch , which modules we want to use , and then we will check the corresponding official documents. Because Chinese developers have provided a document, through this document, we mainly read the first few chapters, the first one about some details about the use of this technology, and then went to check some Chinese communities about the use of this technology . A generalization, we probably know what we have in mind, that is , what steps and things to pay attention to when using it , and then when implementing specific functions, such as implementing a demo, implementing a demo, how do we make data Loading, data processing, and then how to build a model, how to make it train, it has many parameters for each interface and API, this is how we know the functions in it by checking the documentation to make it practical , so Developer documentation is a very important part of learning new technologies . We studied very smoothly at that time, mainly because the document felt well done, and the correspondence with the version was also very good . Well, if we give another example , it is a bad example . There are still many online complaints. When we first developed this small program, it had a lot of problems. Because the applet is about 18 years old, it will just come out, and the documentation is not very complete, but it provides official documentation. By downloading the developer tools, and then going to the documentation for some demos, we will implement a program, Then I found that on the official document , the same code exposed a lot of exceptions, that is, the same code was copied and an error was reported . , and later we checked some information through the Internet, and there were also some books, which were about this knowledge . Books refer to books such as tutorials . We went to check related issues , and then there were many problems on the Internet , similar problems. , I solved it in a similar way , but in the end of its documentation , after our program was implemented , we found that the documentation was still not maintained and did not keep up .

【ask】

You mean X X developer documentation ?

【answer】

X X applet this document. Many documents on the X X platform are like this.

【ask】

It is equivalent to your entire learning process or mainly relying on documentation to learn , and just use official documentation to learn, right?

【answer】

But it has a premise , that is, you have a macro understanding of this technology , and already have some basic knowledge, that is, I want to choose code, which part I want to do first, and which part I want to do first , that is, what is the process? After you have this process, after the specific process details , for example, we need to load data, and I know that this is a big fast, then to load data, it may use a lot of techniques , such as this numpy , pandas , Or pytorch comes with some APIs in it . When we encounter these details , we will check the document. If we encounter some macro concepts , I may need to read the overview section in the front of the document. A summary of the architecture is also very important . On the one hand, it is some experience that others have implemented . May also be heavier. If it can provide a complete demo, it is very, this is very good .

【ask】

Then you mentioned this P ytorch just now , you read the Chinese version, right ? right. Is this Chinese version its official Chinese version ?

【answer】

It is officially available in Chinese and English , which can be switched .

【ask】

Then I mentioned this community. Does the community mainly refer to the community of C SDN ?

【answer】

I checked more foreign communities , because like csdn , you just said yes . It also has its advantages, that is, it is more friendly to Chinese developers , but there is a problem of plagiarism or that there are too many reprints , and then you may often not find what you want, so it is like the situation in foreign countries. For example , on stackoverflow , it provides very rich, because its audience may also be more, and the summary of various problems on it is very rich, if you search in English, go to Google Search , you can often find the answer you want. Because of this community , like C SDN , what they do should be more like a summary. For example, I learn a technology, or I will summarize it after a while, and then I can read it myself and give it to others. Look, but it's a lot of technology, it's not that way of asking questions . But stackoverflow ’s way of asking questions , for example , what problems do I encounter, let’s see if there is a way to help me solve it, and then there may be a lot of methods listed later , then it may , if it is solved, it has a That green checkmark , that C SDN or that blog garden , it is more like a personal summary or a way of personal note taking, that is to take notes and share them by the way, no matter whether the quality is good or not , in many cases , you You will find a link to another document, and then you may end up with the same one .

【ask】

Good to understand, I just mentioned the official documentation, the community of this kind of programmers, and then the textbook tutorials, right? Then there are other documents that you have used . In addition to these, you also use it, not just documents, but data . Do you usually use other data?

【answer】

document a class ? Are all documents considered a type of document?

【ask】

Yes, we actually don't have a clear definition of this developer document, and the current literature research has not been clearly classified, so we want to know that developers are usually learning, in this work , in the development process. We need to know what kind of knowledge to ask for help, and what kind of information to ask for help .

【answer】

For example, there are many technical books. The book is more systematic, but it is more that it may have macroscopic and microscopic, as well as some detailed explanations, but it is more to clarify one thing, or to make it clear A technology, but when you actually encounter problems, we can do this when we are learning, such as learning new technologies, for example, we can refer to these books, but the books are often thicker, so now it is possible I don’t want to go to see it, and when I encounter problems in development, it is mainly just talking about Google search, and then like that stackoverflow , sending some questions , and then a discussion between technical personnel , which is also an important way , that is to say, someone may have encountered this before, so that you can save yourself from going to the Internet and ask again, and solve it directly for you, which is also very important . Then there is , in fact, it may not necessarily say in the document, it only contains that kind, that is to teach you how to use it, I feel that the correct document should also contain some, that is, some summaries of commonly used problems, Q &A , um , because they will definitely encounter a lot of feedback when they release it. They make a summary of the feedback and then make a better reply. I feel it is very important. This is also included in the document, which is actually counted . This possibility is relatively rare. That is to say, there are not many , and more space may be about its technology , how to do this , how to use this? What API parameters are there, what does this parameter mean , yes , that's all .

【ask】

That is to say, in the current official document, it is mainly this specific method , that is to say, most of its content is to teach you how to implement it, but it does not anticipate or anticipate the problems you may encounter, and then it Even with Q&A, the list of issues is not very comprehensive. So do you think documentation is important for development work?

【answer】

There is no doubt that it is a very important thing. As I said just now , when we use a technology , whether it is a new technology or an old technology, just like looking up a dictionary, we implement a function. Our developers, it may not be necessary to memorize all the APIs . This is meaningless. When we encounter a problem, we will check whether there is a corresponding solution, or whether there is a corresponding solution . API, we directly call or de - multiplex. It makes us encounter this kind of problem, just like looking up a dictionary, we can't do one, let's look it up , in the process of looking up the dictionary or in the process of looking up the document, it needs to understand this technology through the document, But it doesn't need to be said in itself. If I come across a technology, I will memorize it. After encountering it, I will not need to check the document . If it is not necessary , I can just read the document directly.

【ask】

It is equivalent to the role of the document. It is a reference book. Check it when you encounter it, and then this document can let you solve a specific problem, right, and the other is to let you understand this technology .

【answer】

And I feel that developers should put more time and energy into system design, to be forward-looking, um, to be able to say to the future , when it comes to expansion, or when doing some other functional upgrades , or Do some system iterations, when doing distributed calls , how to implement these details, or it should take more time in design, but in terms of implementation , compared to design , it is relatively Comparatively less . \_ A large system or a relatively good system should feel like this .

【ask】

Well, you just mentioned that the design is more important, so does the development document have a certain meaning for the design itself ? Does it work?

【answer】

more effective to target code because more documents are used , but in terms of design , it can have some documents, for example , in terms of design, how to carry out our different systems, how to combine different technologies , or to say Matching, looking at these macro aspects, maybe for one, for example, it is a document for this python , it may not need to say, I think about how to call each other with Java in the future, it can call , through this Data, you can implement this function-level call , and it may be completely or unthinkable when it is doing it . It is how I can explain my python functions in a more detailed and popular way. I feel that the design aspect is more dependent on the experience of the developer and the collaboration aspect of the team.

【ask】

is the documentation that focuses more on the code and the specific code implementation, so in the development process, in the specific implementation, the documentation may play a greater role, um, understand . So what do you do when you encounter problems during development? Will I look at the documentation first or will I ask someone else ?

【answer】

My habit is generally to go to Google to search first to see if there is a corresponding answer, and then if it says yes , I do n’t have to go to the documentation page to check it , and then I can solve it directly. I didn't find it, I looked at this , just to see the corresponding function in the document, or whether there is any problem in the implementation of various aspects, if there is no problem, I may go to Google to search again , to change the keyword to search by myself , and then for example Say it in English and search like this .

【ask】

That is to say, it is mainly solved by searching . Will there be a direct look at the document?

【answer】

There are also, for example, when I used the Alipay interface before, I needed to use the Alipay interface to develop an education system. It was implemented online, because when we started testing, the Alipay and Alipay online implementation documents were very few, because Anyway, it's just that one article, everyone is copying it, then I go to search the official document of X X at this time. If I encounter a problem, I feel very intimate about that document. It directly gives a good code for implementation . A demo , let us directly see how it is implemented, we can do it, that is to say, we can call it directly by changing the code .

【ask】

So I think the X XX document of this X X is better . Well, another problem is when you read the document, for example, you have already searched for this document, and then you click to see , how do you quickly find the information you need ?

【answer】

If it's learning, I'd probably just read it has a few chapters. Generally speaking, there are some introductions, some concept chapters , and then we will look at the content of this chapter, and we also have a general understanding of the macro , and then go to the details, we will learn some commonly used functions. Many commonly used functions are just like that. Of course, some rare ones are those that we don’t use very often. Then we can check them when we use them. If we encounter problems , generally, look at the directory Take a look at the corresponding entry , or we can open it directly, because an official document is in the case of pdf, we can just search it directly. If it is the online kind , you can only go a little bit, through the directory method, find the corresponding entry , and then look at its explanation. It may correspond to other scenes, and then look at it again .

【ask】

Do you search by keywords? The search for keywords inside the document , or the document itself has a small search engine.

【answer】

This is generally useless, and I have never seen it .

【ask】

So what do you think , you have read some foreign and domestic documents, so what do you think of their quality?

【answer】

Frankly speaking, it is the foreign company that does it better , and the quality is generally higher. For example, we use the document of Java SpringBoot . Its official document is extremely detailed, and then the content is very rich and very rich . The problem , as long as you read it from 0 to 1 , he will give it to you . Domestic documents, I just said that Alipay document , I think it is not bad . There are many others , some small companies , or, in other words, including the document X X , it may not be doing so well, or there are some problems in its own code , the code sometimes fails to run , and this kind of problem occurs. In general, because the development of the Internet in foreign countries is earlier than ours , our domestic feeling is more likely to be in a state of savage growth . Rapid growth may seize the market , but it does not pay much attention to technology. so many. But the head Internet may be better . But foreign companies , many companies , most companies have complete documents, and then the documents of small companies are made by a small team in small companies . It makes a small and beautiful system . For example, we often use some ide, um, that ide PyCharm , they are also made by a small team, and their documentation is very comprehensive .

【ask】

That is to say, the documents produced by small companies are more comprehensive and can take into account the needs of developers .

【answer】

The main reason is that there are relatively few systems in our country like making basic software for others to use. Well, we may be able to make databases in our country. For example, if we use mySQL , right, it is also some foreign ones. It was widely used in the beginning. For company acquisition, there is no such company in our country. For example, if I make a database for you to use, it does not mean that there is no such company. I understand a XXX , it is to do that distributed database . Of course, its team is not very large. For such a company, it has requirements, but it is relatively small, but X X has also developed database components by itself . Now they will have self- developed databases, and now they seem to have a time series database . . Anyway, there are, but it is not so rich compared to foreign countries, and we may use foreign ones more when we use them . That XX one , it may be for example, when we make a small system, it may not necessarily be used . More for some enterprise users , may be relatively large, such as 2 B.

【ask】

That is, you mentioned a point just now, such as foreign documents, it is relatively complete, and then you feel that the content of it is relatively comprehensive, and what are the points that you think it has done relatively well. Do you think this document is better, besides the good content, there are other aspects ?

【answer】

Structure is also one aspect. Because you write a document , it is the structure and content, and then the structure, it has a community, for example, to discuss some problems that arise, and they may directly participate in an activity of such a community .

【ask】

there is a community inside this official documentation site ?

【answer】

No , of course they have a separate website, such as a community . For example, Java has some ecological communities. They may also participate in some issues in some communities . For example, the community is mainly for discussions. In other words, the development of related components and the like, they will also have related ones . Those who do this in China are now paying more and more attention to the quality of this technology, and they are doing better and better , such as the platform you mentioned. I feel that I have never used them , because I know that this company has not used the specific technology of the distributed system. But I feel that from the online evaluation , they are doing well, not bad.

【ask】

That is, apart from the content and organizational structure, do you think they are doing a better job, and how are they doing in terms of interaction design, because the document itself is a thing with a very large amount of text . For example, it may provide some keyword search functions , copy code , and even code can be directly interactively implemented in that demo.

【answer】

Anyway, there are some like this, what is that called? Open source documents, they can directly write code there. These are all small demos . It is like a big demo . It may run a system and it may not be enough for you to be online. demand .

【ask】

But as a programmer, you think you still need such humanized interaction design, right?

【answer】

Yes, it is definitely needed. For interaction, I feel that it is also a part of UI, right, and search is also a part of interaction, like UI , it is more reasonable in design or something . If some of the documents are badly done, just click on it, and it is really just that there are advertisements inserted in the document, and the work is very unsatisfactory.

【ask】

Can you give me an example of what this is ?

【answer】

For example, I inserted some, especially some on the Internet, for example , it should not be an official document, there are some documents released by individual developers , like gitbook , like that peros , there is a self -maintained , personal maintenance pytorch , That's it, many of these documents are shared through git book, and some advertisements will be inserted in it .

【ask】

Unofficial, there are occasional advertisements. This is also because you think the interaction is not very good . Oh, do you have any requirements for the language?

【answer】

Programmers are generally bilingual, although it may be this, um, speaking and writing may not be very strong, but it is especially like, or when programmers have more professional vocabulary, he is generally speaking Directly understand this English document, because the English document is a technical document after all, and the vocabulary in it is more inclined to the professional vocabulary of this computer, and then the developers of this field , this vocabulary is also so Some , but what he can understand, I feel that personally, I can understand most of them.

【ask】

That is, you don't have too many obstacles to read by yourself, what is the reading speed ?

【answer】

Hmm, the speed may be equivalent to Chinese, maybe slower .

【ask】

Do you have any hope that there will be a switch between Chinese and English ?

【answer】

Of course I hope there is such a thing. The pytorch I mentioned just now , I switched directly to Chinese and read Chinese at the beginning. If it is implemented in Chinese and English, it means that the description is the same, and if some processing is done, then it looks like It will be pleasing to the eye , and moreover , it is a good experience. It does, but it is more perfunctory to use Google Translate directly .

【ask】

some examples of what you think are better for doing this bilingual now, except for pytorch .

【answer】

Tensorflow is also one of them. Like I said before, springboot is of course only in English. It should only be in English, and then others. But if it is a language , it is fine to choose directly . Like Java , many of them are in English, not Chinese. of. Because foreign companies are still relatively rare in Chinese, they only do it when it is particularly popular in China , or it promotes this technology for a certain period of time. It is not only Chinese and English , but can do many languages.

【ask】

So can you recall some examples of poor documentation ? Is there anything else besides X X ?

【answer】

It 's bad because the code it wrote itself may run on my side , but it has some problems in itself, and of course I'm not alone in saying that the environment may be wrong , but there is a lot of voice on the Internet . , a lot.

【ask】

is in addition to the content itself , its structure and organizational structure.

【answer】

I feel that its interface, or its layout , or its that , because its that document may be divided into chapters. The navigation bar can still do it , but there are some problems with the content, and because when it first came out, it may have some iterations later, its technology has been iterated , but the document has not kept up, it is the version Does not correspond.

【ask】

this happen overseas ?

【answer】

There may also be foreign countries, and it may not mean that they are doing so well. Then we are actually following up in our country. The better we are now, of course, it does not mean that foreign countries are necessarily good. There must be some problems, but I've come across not too many .

【ask】

That is, the official documents of the foreign products you encounter are still relatively good .

【answer】

Yes, because if I use technology, I may go more, just for this, um, it should be said that the system can run stably, we may do more , just say the more popular ones or the ones with a relatively large number of users, Because in this case, its product has a certain guarantee, it will do better in this area, it may be smaller , um , it was the fast test before , anyway, there are some technologies, and there are some problems in its documentation , It may not be so perfect, and there are many good ones in China. And many small teams in China may also realize it. For example, if it is open source, its open source project, for example, its technology is very outstanding , and its structure is very good. Like X X 's fastjson , it also has some documents , and also Well done. Some time ago, when I helped an external company and some organizations to build an OA system , I used these open source products in our country . The OA system has a very good document, and I said how it implemented this system . When running, it is to follow which components to achieve which steps . It has a special explanation. Then, when you do some customized configuration, how to do it , it is detailed, and it is described in great detail, and then In the later stage, you can also add some of your own components, which are all possible, so it still has some Q & A.

【ask】

Do you think Q &A is actually very important in this official document .

【answer】

Yes, it is also very important. When you encounter a problem, even if you do not encounter a problem, you can take a look and see if you can avoid it later , especially when writing some code, if you look at it, you may be able to avoid this The problem, just look at it before you use it.

【ask】

In addition to this , the next thing is to ask if you have written technical documents ? After doing so much development, have you written documentation yourself?

【answer】

I have written that it is not a technical document , for example, when the system is handed over, it is more like a user manual, how to use it . Because our team has not done anything, just say, um, some components that can be directly used by developers, so this aspect may be relatively small, but I feel that it may not necessarily be said that it is like a document , it only contains the specified The documentation, maybe when looking at some open source code, that comment may also be considered a kind of documentation .

【ask】

Yes, the very important point you mentioned is that comments are also a kind of documentation .

【answer】

And like many documents in JAVA , it may be extracted from the annotation , and it can be combined directly. Then if you do an open source project , or when you contribute this code , I feel that comments are very important .

【ask】

Comments are the ones written directly in the code, right?

【answer】

Yes, of course , it is written in the code. It is when we write a function method . Before our method , we need to explain whether this method is useful, what kind of things it will transmit , and what type will it return? Then we define some variables or constants, you have to do a detailed elaboration . This code without comments is disgusting, then you just look at it bit by bit and think about it for a long time . If the comments are well written , there is a way for yourself and others to say that it is very easy and efficient .

【ask】

In addition to the one mentioned just now, it is Java, right? Java is mentioned , and what else is the comment in the demo it provides is well written . Oh, you mean open source, right?

【answer】

Open source projects may have to rely on developers, and the developer with the largest background may rather write a few more lines of code than write that comment. Writing comments is a very annoying process. And that is , I feel that there are a lot of developers, especially , because a large company may have a set of standardized processes, so you must ask you to write a code, you may have to write comments , all of which have this rigid rule , they may write, like some small teams, or in other words, when some college students are working on some projects, they don't want to write comments , because the whole system may not have many comments , then if they want to If I take this open source for others to use , I will use it. I have to run it and see what the code means, so it is a very annoying process . Then I was recently looking at an open source component of X X company , the rocket and call, the message queue component, its code, the comments in the code are also very detailed, and it is doing very well now, because it is mainly Thinking of you, it is an open source component. It may have a very large number of users and many companies are using it. And after open source users use it, it will enhance the company's influence in technology. They also provide influence and want to promote, this technical document, it has those technical documents, his documents are in Chinese and English , and then The document also has a lot of elaboration on the architecture and details of his overall system , and in the code, the code and comments are very , that is, I feel that it is very complete . But his notes are also in English.

【ask】

That is to say, if this kind of official product, official document, if it is open source, it should have a relatively standardized regulation, and then the written comments are relatively standardized, but open source like some individuals is relatively small-scale. For open source organizations, the comments that may be written are uneven .

【answer】

Yes , that's a really disgusting thing for developers to say about writing comments .

【ask】

The last question is to think, because our project is cooperating with enterprises, we want to help them evaluate the quality of the document they wrote themselves, the quality of the developer's document, and then help them improve the quality, and then I want to ask about the program Member, what kind of document do you think is a good technical document ? Apart from the few excellent examples you mentioned just now and their advantages, can you think of anything else ? To summarize , a few points.

【answer】

um , to make a technical document, it wants to give this technology to others . In English, it means get started, which means starting the first step . Provide developers with a case that can run, and then after it , if it can run directly , it is followed by a lot of explanations such as Chinese and English, which can correspond to your code and read It's easier. If there is no such demo or these cases, then it should be very boring to read the documentation, and then it will not be able to verify whether you are right or not. It is in its own system. To verify, it may be dedicated to open a new demo project .

【ask】

Just say the first point is to have specific examples , examples that can run.

【answer】

The second point is that we are talking about the navigation bar , and its document has a scientific and standardized organization . For it, you need to organize your information in a scientific and standardized manner, that is, if the information is all put together, it may be very troublesome to find. . Then on point 3, I feel that you have different components of this system, because if you give a document to developers , if you give it to users, it is an ordinary manual. How would you use it, the user will take it It's that system, it 's a black box, he doesn't need to know what's the use of yours, I just need to click this button and something will appear , and that's enough to know. But for developers, it must be to look at the details inside , the technical implementation details, what specific role does your function or a class have, and then the type returned by this function, and what role does it return parameters? Or what's going on in it, that's how to do it.

【ask】

That is to say, you not only want to teach me how to use it, but also teach me why it should be used in this way, just explain the principle .

【answer】

Yes, tell me the principle inside. But this is for, say, we propose a function . Another is the organization of your code, how do you organize the code, for example, you , because the programmer has some UML tools for you to draw some, through the way of drawing, you can talk about your different components or between different classes It is how to organize it , and then it is helpful for programmers and developers, when he comes to locate or learn .

【ask】

That is to say, in addition to text, there should be some pictures .

【answer】

Yes, picture description, pictures to assist the explanation and understanding of this system . Then, of course, these are all macro aspects . The most important thing is that the elaboration of your code must be detailed and obtained, and then it cannot be too little . It may be that there is actually an error, and the code you provided, the case just mentioned is right, it is a complete system, it may also have some small code behind it, and some small code with a small number of lines. Code, you must be sure about this code. Your code is in the system . When I use it, it has no principled errors. Well, this is correctness , correctness , and then there are UI , UI interactive experience . When you are an enterprise or a team, when you are making a document, whether you are careful or not , it may be in the aspect of your text. Of course, everyone pays attention to this aspect. The UI aspect is also a very important point, as I just said. For those searches, it can provide some keyword searches. I feel that in most of them, China actually has it, and some will provide a small search box , but many times it does not have it, and it can only be accessed through the navigation bar . Looking for it, some of them will directly give you a pdf file, you just read it a little bit, that is, interactively , it is not as good as this kind of website. Then , I feel that its document, um , the other ones just thought about it, and can't remember it.

【ask】

There is also a problem with this language, bilingualism.

【answer】

Yes, yes, the switch between Chinese and English is right , then in terms of computer language, it is the mainstream language , which should be supported, C ++, Python , Go, that is, if you make an open source component for others to use , different languages , because there are many kinds of computer languages , there may be hundreds of languages, you do not need to implement all of them, but the mainstream language is the language that everyone is using to support .

【ask】

That is to say, the software itself must support different languages, and then its document should also have corresponding instructions, which is such a description for different languages.

【answer】

Well, just in terms of implementation , because the documentation is what it needs , we programmers look at the documentation, and it will eventually fall into the implementation . If he has some problems in the implementation process , he should provide one, for example, an official technical forum, ask questions through the forum, and then some other technical staff will explain to you on it, or your team. Support is good, just say you can solve this problem . A technical forum is like many communities, right, many technologies need to be used by the community , because the community does a good job, it is also very good for you, the developer, and the promotion of your technology and iterative update of products. , because it is used by different users, he will directly discover your problems and help you iterate , right?

【ask】

This is actually another type of Q&A , just whether it is the expected Q&A , or the Q&A that everyone really encountered in the actual development process.

【answer】

Yes, and then I just said a point that maintenance must keep up. It cannot be said that your version has been upgraded to 5. This document is still at 2, because it may have some interfaces or some codes will change when the system is updated. , or its parameters may change, or its name may change, because if the code can't keep up, it won't be right. As far as what is said on the Internet, it is said that you are a good person, but you have become wrong after using it. In other respects, such as good documentation, I think it is very important if it can provide a video tutorial, for example, the database like MongoDB , it will regularly open some courses, which are dedicated to explaining it and this database . How to use , connect with Python system, Java system and C++ system . Then it may talk about their product on the one hand, and then build a complete small system through some other product components .

【ask】

Is this video tutorial placed in its official documentation center, or is it linked through other video sites ?

【answer】

Generally, it has its own official website , put it on its own website, and then if it is a document, it is said that the first document of its document must be the home page , or an introduction , an introduction, and there will be a link in that regard. , we have a video tutorial here, and then you can click me to watch it .

【ask】

Good point , do you have anything else to add ?

【answer】

Well, that's about it, I feel like this is the main architectural aspect of a document . It 's just a team, um, I said just now that it writes comments and says that programmers may not like to do this, and it's also a kind of thing to write documentation. Therefore, as a team, it is also very important to ensure the quality of this document through some institutional measures and some norms, because if it does not want to write it, it may be written to simply describe this thing, why , how to use this , and also These are the things .

【ask】

Even in today's Internet companies, their documentation team is called a mixed team, that is, there are both technical personnel and document writers, that is, some people with a liberal arts background.

【answer】

Well, that's very good, like some big companies in the head, then they need to do a technical document , especially the technical document of XX company is very large in this country, just like Java , their document may do It will definitely be better.

【ask】

there anything else to add?

【answer】

That's probably it .