### 计网week1-lecture 9月5日 08:31

说话人1 00:00  
In the cabbage if you want the meal with I this is five, at least in the first we get secondly because this is more than in the next, i'm not on this 2 year program. So almost all courses use carries delivery. There are so called allowance in the form. Sometimes there is some, since, for example, the questions it is not clear enough or get along with. For last and over there. Also, I have a question. If you have questions, your fellow trust me can answer you, I can answer you as well. Professor of answer and he will not hear, and he will involved a recession running by him is local.

Most of the cases in terms of your assignments, marketing, and stuff. This is probably 1 set of one. This is the second of my care where first the source you should go to change with in paris. Then I i'm with bali yang. This is my email address in dongguan. I think i'm not the chicken daily people, probably maybe every second day to check on that. Professor huang zhan is here, so it was the I the issue is the sending up again. In terms of cost enrollment, i'm not so miss not like in hong kong in the next.

So maybe some people may not. You need to recall when you the lecture on google, but here on the you are being issued. Then if I didn't want to convert it and what we need, all right. The tutor after the every thursday, we have 2 hour lecture. After 2 hour lectures, you one is the 4161 is the 417. So I run one group and professor wang from another group. Is the same materials to presidency. All of your assignment project as a market. When we got my professor of one. In terms of project, I currently have the finance google market if professor huang maybe not. The market. I look at my student chinese soon in hong kong and he will a market, but certainly in terms of that's a project that you have. These are agreements. Are you contact him through the email you professor huang able to do that? Maybe I do not use. Chinese people is project.

So in terms of assessment, this course final, an example is 70 %. So that means whether are you successful part of australia? You see, you are the final exam is very crucial. Also, five final exam is compulsory. So you cannot say I can attend final exam, but I want to pass. Certainly, if you have 77 stand behind the particle thickness, for example, a traffic accident. So you need a medical attention. In that case, you need construction certificate. We can give you a pick up and maybe after the exam 2 or 3 days, you the fathers in the university forward, your request, I approve that i'm give you a pickup ok otherwise. If you missing a final example, you feel about imagine that's we are how you can pass the calls. We have. Two components. One is possible, basically, three assignment, one sa one group project. So this worth 30 % ok so you're finding them 70 %.

But again, I you reached at least 35 marks assessment mark. But past the 35, that is you passing the cost different with mainland in the part of here are 60. Basically you can you can use the uk system, you have a distinction private, okay? So I certainly is, as we learn cost growth to 30 %, you have three, not aa small size assignments. It is worth 5 %. Your final recall is worth 7 %. Your group project, this is the subject program. If I just want to know how many of you already done available in your undergraduate study, if you've done this in your hand, 12345, six, less than ten.

All right. I'm not sure some university if we are already have some program parts and most of the here is not simple. You create where the service for customers or something like that. When you give this location, you just implement the major functions services. In terms of the project. So basically the entirety, a teamwork, you have two people work together. You maybe have different opinions how we need to come to mind with each other. Sometimes, but one issue I have to say this is you find your problem.

Okay, not official, I did this what with you. So again, in the end, the market is your project. You always need one report on this report the market. For example, you gotta 6 point. So that means each of you 6 point in the past, we still have a student say we work together that I related to the nothing most jobs done by me with and get more credit. But I need to look into a group project, the success of our failure, some sense why you close to share the success. You failure. It was very the failure.

So in that case, you get the same mark whether another kind support part of already. So some cases say I prefer doing it by myself, so you can read your name. If you do by yourself, that's okay. So that's why I would say the group side up to q not more. All right. This is about the group project issue. This is just a temporary scheduling, because I haven't heard the timetable, because here and on time is different. Book holiday and book. Roughly, we already is first time in the due is 24. Maybe assignment due is in the sunday, midnight 11:59 pm you submit your job by that point. Certainly some students say in the internet working done, so you can allow a bit until next the morning before am just. We no deduction if beyond that point, for example, monday, morning 9:00, you submit that you have the penalty apply.

Maybe it's 20 % deduction your. You save the money after the official deadline passed you. In principle, no market will give me this is the graph indicator. You can see a big cap, you can draw the 13. So when you are using as master, your is possible to become very serious because you need a systematic applied and already learned in this is a master project doing something, not just on this project, every other project. It should be on the seminar workload. So you need to have some expectation, putting this final exam is reading the exam, like you said, here, we put the paper, so you need to 2 hours already.

Then we talk about the assignment. If your assignment once deceived the capability, one or two is the market.

All right? And also, in sometimes you are about five or six children have the marketing about 200 students. Missing one here are just one person maybe take on. This is the longer. Once finished marking, you can see your mark in the carriage, each assignment, you can see your mark. And also, i've been encouraged to use the electronic market. So you can access in the market paper. In that case. Also, I give you a solution, different solutions, certainly. That solution not unique. You may have your solutions, right? So as long you think your is correct, the market is wrong, you need a context in your market first to see whether you can resolve your 50. If you both insist, basically it's wrong, you say you are correct. So then you send an email to me. I'm the final job with a a few new market back often.

And as these also need for the production, say that this another, according this question, probably answer. That's the procedure. So this is the entire prototype you should follow. One issue is your all here should be done within 2 weeks after announcement solutions. From that days are in the past 2 weeks.

In the past, we have a student oki do nothing to do that in the end of five exam already done all of the practical mark. I got 59 whether I am able to get a 60, but this assignment is market. Give me that mark, this kind of things we do not deal with at all. So each time you doing finish assigned the market, once or last minute, you shoot down within 2 weeks. Did you have 2 weeks away with all the difference? The dispute otherwise? No further contribute to the end of the semester? I think if most of you should be from capital science, lots of maybe from different areas, chemistry is there or method or whatever. In this case, the protocol will be part of basic programs here on the where sophisticated and you ever often master one at once.

Finally, if you say or becoming this master problem, if I undergraduate rules, you'll also take a program language because you need some other problem you can take. Typical. You guys are really familiar with the past in java. Some of them may be used to c and c plus plus, yc and c plus plus is dominant economy. Internet start from the middle 70s in that time, the people you see and see how other people there are 80 itself. That's what's the south korea, political vision, you see? In terms of academic, honesty or integrity, ok don't achieve ok so your parent, here you are having teachers and say, you come here, you have to learn something. You can find a decent job, you pay the money, you check it, you got nothing, you want to work nothing. Right? Commodity. Why is you do not copy code a solution from your classmate or good friends?

You and the third part of sources include the challenge cpd so certainly when you write the essay in the past, some students just a copy from the internet.

So the china cpp if you doing china cpp a marker, you can do similar way, can double check if I have by the 2 or 3 kind of software, as I have to check it without you copy someone here.

If in terms of that reason, I give to him. So whether you are the same cabbage, where are you buy the you okay with that student a favor or that student? You are not. So then you get the same kind of energy and a family that is not good, not just said in this course, actually. In the future I your risk alive is your personality. You are moral as you can. Since you must training from where you are starting, this is basically not. The typical case is usually we reported to here haven't from the department yet, but there are organizations in this part. Maybe you can use selling one, maybe goes through and the committee in the final position on that. So another issue is for cost of attendance, because the easy way it is just running to our lectures, one tutorials.

If you just say I have had a nature, and I had a tutorials, spend a minimum amount of rmb assignment, you can ask the call. But i'm not guarantee you will come from each other to find a job, because you you need participate. Each is a master, the three or four courses. So some of these are very important in new york little, but all right, you're supposed to participate in the class as much as possible. And this is a two way street. You have questions. The lecture may be more than thirsty teaching. You, if you do not want to participate, the lecture million also lost here.

Constant interview. This is about the logistics. Do anyone have any question about this? If you have just ask you? So no question, that's good. Then we talk about the what's called comical variables. And you have this is the cost iphone. Actually. Basically we adopt a computer networking, a top down approach. This is a typical most university of this one at 10 years, but in the mainland there, how many have someone is? I have a problem on the property is and that's the target, but is that focused situation and not good to this? So most of this one, this is a portion seven. The updated one was an eight, but i'm not.

So there are hard topics in the foreign topics. Have a cheap and we can download from spr and if there are chinese translations, maybe is working on fire or something. I suggest you maybe have one of these was not lessons are updated, because the data wasn't just add some new stuff, not power. And this is a certainly. And so you can do that. Today lecture what we do. We basically just give you a big picture. And not, there is specifically precise what was such things, but building a generative technology right? In terms of the computer networks covered in this. So more for each technology is concept on groups will be detailed in the label lectures, how they introduce these technologies, stuff they will use. Internet actually come down. There will be these are they from the earliest from 96?

Now you say you're ready. But in the data, american uniform organization started. But you brought it on. And that is always great from the as lia to the san francisco. And at that time is new york together. What's today? We were talking about, as mentioned, technology. So relatively under the node might be prepared in the past, but you need aa simple calculations. What we look at, what's called the internet, what's called particle. You gotta work a typical news, but this is two parts. One is so called 11 to 8. In contrast, is that we can call they are how to measure that there will be performance. You have matrices. Right? So the measures what include technical loss, rate, delay and to have a delay. So what's it? Many use of center private request the facilities? How many of them successful? This is the so called throughput.

Then we talk about the income of a structure that is very substituted system. In this substitutable system, you cannot solve all problems once. The simple file is modular life for different models, each larger focused on a specific service or a set of services. Thats we will talk about the social model, multiple layers, each layer which particle should be adopted, how to design that so we started with what's called internet.

So you can say we talk about computing devices, giving our computing devices. Suppose you have computing unit cpocpo is a very simple a resume calculations. It's right. You're supposed to come manner, right? Sometimes you have a story as well. All of these have in simple word. If you can have a piece of software, sometimes we call the f is right. Mobile phone and some of the way thousands x this piece of software, it will run in your device that's you are called computing devices. Multiple time like you in your laptop ipad, this one like intelligence traffic at night. Usually the traffic at night is set along 5 seconds is a red, then a turn yellow, then turn green, maybe is 10 seconds.

If in this direction, there are no a car or roads, everything there. So you may not turn green rather than just the paper, rather than another direction. It goes through. So this is a modern metropolitan smaller.

In that case, this is not just that you control and send a similar to the base station and base station, send it to the local, the server processing to make a schedule. This is your bargain, this is optimal driving. Sometimes we call it no human manipulate the vehicle. So the vehicles I have plenty of covers sensors. This data is either send to playstation, also on the roadside and unit for processing ok so this also the computing unit, so like your refrigerators. So you may be refrigerator install the chips. So you work from many mile away, maybe, for example, 40 kilometers in your home. So in your office, you can use your mobile phone collected contact, describe your refrigerator article on me. If reason, when you get home, you can call it internet. All of these is become and device. Sometimes we call it host or and the system, right? They want to running at able to the same things and doing modification, able to send something.

So they put it together, use. This is despite the wider link, actually, you can see it like cable of the cable collect different aside or not as you can visible, say, like your mobile phone, whether you have 40 single, this is why is one?

The seven night specifically not enough. The higher end in the lower end. The satellite send you the laser beam. Laser beam is can transmitted all of these as long as be able to carry your single and data that's is collection, wire or wire is one. And it's okay. So all of them are formed together.

So then look for on informally, on the internet. This is two tip of items. If you already done control level, since it wasn't already. This circle we call the router. This is so called router basically in your home. You subscribe the internet service, right? So isp internet service provider. So that means all customers find this isp suppose running your data or in your resources, so that particular game with all the games is local ok so this means the problem worker for outside world to connect the people there. The rest of the world through the room. The square and the cross, this means switches, okay? You are local like acpu here, many, now is very small. You have many factories, each family. Under these, they have many different departments.

In that case you just a single every direct collective, maybe not good. You scaffold you put an experiment with collect them much more useful by the students you have. For example, about 1,000 students, eg student on terminal. So in that case, you maybe have multiple switches are located. You feel like here this is in the heart of university. You have to switches. All right? This so called networking. Networking means every entity and the system must be connected together for more available. If this is too bad, no connection, disconnected, that's not a little to get working from this side. You never reach this side, right? Suppose you'll have something connected, as we mentioned, that this is a wire and why this you use the table, for example, running is optical one. The early days is copper. Cable is right. The only estimate by the 80s 90s is something like that. So this is a 40 signal, right? In your home or in this room, we have wifi, right? So wifi and this 40 of this one is review. You couldn't say that is found in a certain kind of frequencies.

All of these things, sometimes we call the transmission rate or benefit capacity. Transmission read when you download a file. So you cannot say every second file make 1/5, sometimes three, 500, the 12 ka bit, et cetera. This is rape, but in terms of paper or this is total, since sometimes the power has capacity, communication capacity, our benefits, and all our benefits given to humanity. Exactly the same. If you say I use this cable, you for capacity means the transmission rate is the maximum. This is a cable able to providing what's called networking. Easy of this shadow area is a kind of network. For example, this triple on your home network, you have so called the homework is right so that you collect your laptop, your records, your ipad, your mobile phone, et cetera. So all of your data received all your setup in the end, go through a lot of this rotor capability is your ist do not have sales provider ok for this one.

Now this is populations for you. And this is automatic vehicle. This is traffic light. So all of these ones through this business station connected from available, but go to the rest of the world to the internet so that this water, okay? This one is usually called look for a break. The grade, not really is a grade. So that is not a days since there is a typically where adopted the scale where a spouse is deployed. This is, for example, in china, you have many getaway. I get in shanghai and guangzhou, beijing, xi'an, chengdu, et cetera. So not every previously certainly you have a different, very large scale, the entire region like it, eastern china region and the middle east, middle in the middle and west.

So your area you have sometimes hard to get away. So this one deployed where is possibly. So sometimes we call it great ok according to great location and population. How many people make use of? Also, like here, this is data center provider. So the data center because you sometimes like google the amazon web service and microsoft observer. So that's globally people use that. So there you talk about not just a single the route or maybe have multiple one make people able to access their data centers. This so called enterprise network or company, like a university, like a city, you is right. So you can see the switching properly. You have multiple one, so you have server, but going outside through the role of this, like a pig ok from your home, go up to the internet.

So from the other side, the facility is also through this gate. So the basic unit, this one called access network. So it means you get things access the internet through this. We are forced to rule. And then you may say, why is not this one? This is already get out. So why is very important in terms of panic or something you want to manipulate? I want to tell you something. That's all right. As long as under your control before, go up your door, you can do everything you can. But once this packet passed through after the door, you couldn't control. Nobody else in. This would never work here whether I have a little I the intersection and doing modification to this packet, in principle, is not in front of the particle, basically say all the received in the end of destination, receive the base.

But in practice, specifically in these days, so part of software development level, in fact, you can modify this usually is authority or governor this somewhere. They can do that. So we will talk about that. In later, we get nine, we get eight about that issue. Difference that we know is isolated stuff is each of these we call the end system or holds the one they were important. So you have many things. I think some of you already may apply. This is like a terrible or something in the morning and you wake up after the midnight when you sleep. This is specifically for older people. They may have tell you stories of whatever that the radar, you already know that security camera, so you can most family, i'm not sure here you raise the world. Style of house, not every person, almost 80, 90 % that even started. Security camera these days usually, right? Also about power by supervisor. This is the solar power easy to do these things.

This internet phone, I think most of you guys do not. So on the early phone is, this is we use the circle, which is we are talking on a little ok so this form, if lost the internet connection, the firm couldn't work, but it is a much more functional economic. They are traditional, super phone base one. This is a watch. You already know that this AR class, you would already saw that this is called smart meters. I think I'm not sure in China already on Top of that in the west world, for example, consuming electricity, you'll keep it area. For example, in the morning, in the me, in the long hour, in the evening, people take a shower and everyone want to use electricity. They charge it very high price, but wash your clothes in the midnight from 11:00 pm it makes the morning 4:00 am so the electricity very cheap.

How to do that? This so called a smart meter. To calculate which comes on. You use the other issue in terms of company. We collect how much electricity you consume, gas you consume me. The older way go to your house or you're out in your world, you have. The meter is from the people record and doing things. But in this case, you just drive a car that device to send you a signal automatic reading to the car. Computer can be called then suddenly electricity pay off so much easier. That's a lot of effort. This one to start, I think someone already used in the past take a 2 minutes, sometimes you click, then come up. So maybe it's already like this, not edible. You do this have AA same, a simple chips control the temperature around certain part of the automatic off and come up. So that's is the device, is the applications.

So now we get a conclusion was called internet. Internet means of their work. So the nonsense is spread. First of all, many small networks like here, this just using the basic station from our network. This is your hospital is right here for a network, this organization, university or something from one level. This is so to provide a data center from a little more all of this.

Now this is global one, for example, nation to mention get away from across network is right. So all of these different one connected together, either through while the cable or using the wireless radio, or using the satellite, like using the laser beam, et cetera. So connected together. This form, somebody internet means every other device you can access every other connected devices. If this, therefore, so that's called internet, certainly this is a generic term, but certainly not every device is collected internet in the airport.

Access, for example, in university like your students recall the sense that your marks and stuff, your posing our Information, the academic stuff, salary stuff, not everybody in this university about access, rather than a certain group of people can go there. All right. So that's called the internet. Then we call one show. I just ask you guys, whether you want to perform, we got 1 hour and take 10 minutes rest, then come back, or I just run the only 11 hour, 45 minutes and then finish, which is you purport well and very not how great it is, right? And we need to break. You need a break here. Then maybe we just the nine past, eight past past nine, we come back time. Kind of the 10:09 or 9:09 20. So you can take a risk we back at 9:20. All right. Okay.