

As time goes on, you may be doing your masters dissertations with people in Nero. You may end up writing research papers with people in Nero. You may end up doing PhDs in Nero, you know, whether they're here or across the country, But a very strong software research centre across that, the whole country, and it's here. So our headquarters are actually in the Tierney building.

随着时间的流逝，您可能正在与尼禄的人一起做硕士论文。你最终可能会和尼禄的人一起写研究论文。你最终可能会在尼禄攻读博士学位，你知道，无论他们在这里还是在全国各地，但一个非常强大的软件研究中心横跨整个国家，它就在这里。因此，我们的总部实际上位于蒂尔尼大楼。

And the Tyranny building is the one that's across the road from CSIS Silver Tower. Know that building and we're on the top two floors and some of our lectures will actually be held down there when I can't help them on Thursdays.

暴政大楼就在 CSIS 银塔的马路对面。知道那栋楼，我们在最上面的两层楼，当我们周四帮不上他们时，我们的一些讲座实际上会在那里举行。

So.

所以。

With my research, then, I also have research students and postdoctoral researchers. So masters students, PhD students, postdoctoral researchers working on a variety of projects and project types.

那么，在我的研究中，我也有研究生和博士后研究人员。因此，硕士生、博士生、博士后研究人员从事各种项目和项目类型。

So again, it's kind of interesting. Maybe not just me. Your other lecturers have a lot of thought of what we're all doing. The other thing I

have a very strong role in is around equality, diversity and inclusion, particularly gender equality. But also outside of gender equality, You know, there's lots of other equalities that we have to think about. I suppose when I look at a class like this, I see great diversity in your nationality and everybody.

所以，这又很有趣。也许不只是我。你的其他讲师对我们都在做什么有很多想法。我在其中发挥着重要作用的另一件事是平等、多样性和包容性，尤其是性别平等。但除了性别平等之外，我们还必须考虑许多其他平等问题。我想当我看到这样的班级时，我看到你们的国籍和每个人的多样性。

Brings different things to table. When you come in with different backgrounds, different genders, different different nationalities, different family states, just different sexual orientation, whatever, It's all very important.

带来不同的东西。当你带着不同的背景、不同的性别、不同的国籍、不同的家庭状态、不同的性取向，不管怎样，这都非常重要。

That we have that and we work very hard within the university to try and make people feel welcome and I presume you've had a really good introduction. Most of you from the international office for example, they work very hard to make sure that people are welcomed and people are here. So that's very important. So I would do quite a bit of work on that.

我们有这个，我们在大学里非常努力地工作，试图让人们感到受欢迎，我想你已经有一个非常好的介绍。例如，来自国际办公室的大多数人，他们非常努力地工作，以确保人们受到欢迎，人们在这里。所以这非常重要。所以我会在这方面做很多工作。

So from a research point of view, I always think this is important because my teaching is very much informed by my research. At least we have a clue what I'm doing in the research world. You might be able to understand what I'm trying to teach you a little bit as well, so.

因此，从研究的角度来看，我一直认为这很重要，因为我的教学在很大程度上受到我的研究的影响。至少我们对我在研究界所做的事情有所了解。你也许也能理解我想教给你的东西，所以。

As I said, I work within Neural Transportation Ireland Research Center for Software. I look at software quality, particularly through health and medical software development. So I'm really interested in how healthcare systems are developed. How do we develop them in such a way that things don't go wrong? And other areas of software quality that you know that happened, that you know they're there, that I suppose I'm just not particularly interested in, but things like.

正如我所说，我在爱尔兰神经交通软件研究中心工作。我关注软件质量，特别是通过健康和医疗软件开发。所以我对医疗保健系统是如何发展的非常感兴趣。我们如何以一种不会出错的方式开发它们？还有其他软件质量领域，你知道它们已经发生过，你知道它们在那里，我想我只是不是特别感兴趣，但诸如此类的事情。

Automotive.

汽车。

You have your autonomous vehicles. So we have to have good working software for autonomous vehicles, for airplanes. We have to have really good working software. Financial systems have to follow regulations, aerospace systems. So there's lots of other systems that we've got to think about. As I said, mine just particularly, that's the domain I focus on. I'm very interested in software process improvement. So when I do the process improvement exercise again and the people that are at class this morning.

你有自己的自动驾驶汽车。因此，我们必须为自动驾驶汽车和飞机提供良好的工作软件。我们必须有真正好的工作软件。金融系统必须遵守法规，航空航天系统。因此，我们必须考虑许多其他系统。正如我所说，我的特别，这是我关注的领域。我对软件流程改进非常感兴趣。因此，

当我再次进行流程改进练习时，以及今天早上上课的人。

You just have to sit and smile. OK, so let's meet this chair goes with the way.

你只需要坐下来微笑。好的，让我们来认识一下这把椅子。

Change.

改变。

So.

所以。

Look, it's a different type of check.

看，这是一种不同类型的支票。

OK.

还行。

So.

所以。

People had this morning. Now you can just sit and watch and see how this goes. So we have a chair.

人们今天早上有。现在你可以坐下来看着，看看这是怎么回事。所以我们有一把椅子。

Where the rest of us are all in a factory, working in a factory that produce chairs, OK.

我们其他人都在工厂里，在生产椅子的工厂工作，好吧。

And.

和。

Every 10th chair that comes off the production line.

每 10 把椅子从生产线上下来。

Has three legs.

有三条腿。

OK, so if you were the boss of that factory, what would you do?

好吧，如果你是那家工厂的老板，你会怎么做？

Have we a problem?

我们有问题吗？

We have a problem. OK, who agrees we have a problem? Hands up. Well, you've got to talk. I'm not going through all the talking. Do you agree we have a problem? Yes or no? Yes. OK, so how are we going to fix this problem?

我们有一个问题。好吧，谁同意我们有问题？举起手来。好吧，你必须谈谈。我不会说完所有的谈话。你同意我们有问题吗？是或否？是的。好的，那么我们将如何解决这个问题呢？

OK, give me a clue.

好的，给我一个线索。

OK, yeah, OK, so we've got. But I know I'm missing a leg, So what question am I going to ask? Why no one missing a leg? What cause? OK, so we need to know what caused the lace to be missed. OK, right now you've answered. You're not going to answer again. So other

people in the class what might have caused that leg to be missing?

好的，是的，好的，所以我们有了。但我知道我少了一条腿，所以我要问什么问题？为什么没有人少一条腿？什么原因？好的，所以我们需要知道是什么原因导致蕾丝被遗漏了。好的，现在你已经回答了。你不会再回答了。那么班上的其他人，是什么原因导致了那条腿的缺失呢？

Yeah. Then maybe it's something to do with the workers getting tired or using focus, because maybe they need a break within every OK, yeah, lovely. OK, so the people who are making the chair are not able to make more than nine at a time, and something goes wrong. Is there something wrong with people? OK, good answer. You're not quite OK Any other answers?

是的。然后，也许这与工人感到疲倦或使用注意力有关，因为也许他们需要在每个OK中休息一下，是的，可爱。好吧，所以制作椅子的人一次不能做超过九个，出了点问题。人有什么问题吗？好的，很好的答案。你不太好 还有其他答案吗？

It might be something wrong with this initial design. OK, something wrong with the initial design. Any kind of clue that might be?

这个初始设计可能有问题。好吧，初始设计有问题。有什么线索吗？

Like because it's really good original sketch. Like there might be something wrong with. There might be this bend might be working and it's breaking up something like that. OK, so something wrong with the original design. Anything else there might be something wrong with.

喜欢它，因为它真的是很好的原创草图。好像可能有什么问题。可能有这个弯曲，可能正在工作，它正在打破类似的东西。好吧，所以原始设计有问题。其他任何事情都可能有问题。

OK, if you're looking into a factory.

好吧，如果你正在寻找一家工厂。

What do you want to see in the factory?

你想在工厂里看到什么？

An assembly line. OK, so tell me a little bit about the assembly line. What could be wrong there?

一条装配线。好的，那么告诉我一些关于装配线的信息。那里可能有什么问题？

I've kind of landed on you because you asked that you answered that. Anyone else on the assembly line. What could be wrong?

我有点落在你身上，因为你要求你回答这个问题。装配线上的其他人。可能出了什么问题？

Yeah, parts of the chair. And then there are workers.

是的，椅子的一部分。然后是工人。

Maybe the parts are not complete, maybe the parts aren't aren't right. OK, so there's something wrong with the individual parts when they come out. Anything else that might cause? There's one other thing I'm having question for here.

也许零件不完整，也许零件不对。好的，所以当它们出来时，各个部分有问题。还有什么可能导致的吗？我还有一件事要问。

No, that was wrong. I said. That was raw material. Say OK, I'm just saying, if I want someone else to answer, now what else? Remember, I look in the door. What do I see in the factory?

不，那是错误的。我说过。那是原材料。说好，我只是说，如果我想让别人回答，现在还有什么？记住，我往门口看。我在工厂里看到了什么？

So what's the assembly line made-up of?

那么流水线是由什么组成的呢？

Machines. Machines. OK, so could the machines be wrong?

机器。机器。好吧，那么机器会不会出错？

OK, you're going to have to talk and tell you before this day is out. You don't be talking. OK, so the machines could be wrong. So now I don't want I want every 10th chair to be right. So what could I do? So the people, what could I do?

好吧，在这一天结束之前，你必须谈谈并告诉你。你别说话了。好的，所以机器可能是错误的。所以现在我不希望我希望每 10 把椅子都是正确的。那我能做些什么呢？那么人们，我能做什么？

Give them like a break. Give them a break. OK, so I changed my process. OK, I changed my process. I give them a break. What about the machines? If it are wrong, how could I do?

让他们休息一下。让他们休息一下。好的，所以我改变了我的流程。好的，我改变了我的流程。我让他们休息一下。机器呢？如果错了，我该怎么办？

Algorithms can be, yeah. It's not a change, change the way the machine is working. Some of the session OK. I might decide to source my raw material somewhere different.

算法可以是，是的。这不是改变，而是改变机器的工作方式。有些会话 OK。我可能会决定在不同的地方采购原材料。

I might decide to go back and look at the design and make sure that design isn't used again.

我可能会决定回去看看设计，并确保不再使用该设计。

That's all part of changing process, what I find particularly interesting in software engineering.

这都是改变过程的一部分，我发现在软件工程中特别有趣。

Is when people code or test or design something wrong? What happens the next time?

当人们编码、测试或设计时，是否出了问题？下次会发生什么？

The code or test or design something wrong?

代码或测试或设计有问题吗？

We're very slow to go back and change.

我们回过头来改变的速度非常慢。

OK, so in the physical thing we go back and change in.

好的，所以在物理上，我们回去换衣服。

Software, we're very slow to do it. So we should be training people. We should be deciding on the breaks they're having. We should be making sure they're having the right background. We should be making sure that the compiler they have is the most up-to-date one. We should be making sure that they're using design techniques, and we should be making sure that the use required, that they're collecting requirements properly. So there's a whole lot of things that we can be doing. So that's what I mean by software process improvement is actually looking back.

软件，我们做得很慢。因此，我们应该培训人才。我们应该决定他们的休息时间。我们应该确保他们有正确的背景。我们应该确保他们拥有的编译器是最新的编译器。我们应该确保他们使用设计技术，我们应该确保使用所需的，他们正确地收集需求。因此，我们可以做很多事情。所

以这就是我所说的软件过程改进实际上是回顾的意思。

And trying to figure out what changes we should make or if we're starting an organization looking forward and trying to make sure that good processes are put in place to start. OK, so.

并试图弄清楚我们应该做出哪些改变，或者我们是否正在启动一个展望未来的组织，并试图确保良好的流程到位。好的，所以。

That's SBI Global Software Development Bank. So some people here have worked before you came here, Yes. OK. How many people have worked in a group that has had people in different places around the world?

这就是SBI全球软件开发银行。所以这里的一些人在你来这里之前就工作过，是的。还行。有多少人在世界不同地方都有人的团队中工作过？

OK. So you've been working in a global software development situation, have you? So where did you work with people? Where were the other people? Where were you were in San Francisco? OK, where were the other people?

还行。所以你一直在全球软件开发环境中工作，是吗？那么，你在哪里与人合作？其他人在哪里？你在旧金山的什么地方？好吧，其他人在哪里？

OK, so you worked in a joint routine.

好的，所以你在一个联合的例行程序中工作。

OK. And were there any problems you see? Does it work perfectly?

还行。你看到什么问题了吗？它工作完美吗？

You're not saying yes, you're not saying no. It doesn't matter.

你不是在说是，你不是在说不。这不重要。

OK. So there were headaches because the time difference was huge.
OK That was the first one that came up in class this morning as well.
OK And where were the people know? Here Behind yourself? Yeah, I'm actually working with bar in the news before. You worked in a bar?
Yeah. No. But I'm wondering about software. Software. No. OK. So are you the only one from the international class? Yeah. So you worked in GST? Yes. So where were your people? So mine was like in France.

还行。所以有头疼，因为时差很大。好吧，这也是今天早上在课堂上出现的第一个。好吧，人们在哪里知道？在你身后？是的，我以前实际上在新闻中与酒吧合作。你在酒吧工作过？是的。不。但是我想知道软件。软件。不。还行。那么，你是唯一一个来自国际班的人吗？是的。所以你在GST工作过？是的。那么你的人在哪里？所以我就像在法国一样。

In New York and somewhere working in Spain, OK. And I had different kinds of some works in Pune and some inside India, sometimes OK.

在纽约和西班牙的某个地方工作，好吧。我在浦那有不同种类的作品，在印度也有各种各样的作品，有时还不错。

But have G any problems. So first thing, the problem was the time difference as she said. The second thing that communications you their slang is totally different and our slang is totally different. Our way of English talking is totally different. So we just get collapsed with that and they can understand some words what we are doing and we can then we are speaking very fast. You have to record every call that you have to regain it again because you shouldn't make make a mistake with the requirements. OK, so that was the biggest thing. Yeah. So.

但是有G任何问题。所以第一件事，正如她所说，问题在于时差。第二件事是，与你交流他们的俚语是完全不同的，我们的俚语是完全不同的。我们的英语说话方式完全不同。因此，我们只是被它崩溃了，他们

可以理解一些话，我们在做什么，然后我们可以，然后我们说得非常快。您必须记录必须再次获得它的每个呼叫，因为您不应该在要求上犯错误。好吧，这是最重要的事情。是的。所以。

Like these are issues that come up. So we did a lot of work around global software development and what you need to put in place if you're in a global software development situation. So that's GSD and the women in stand then we do a lot of work around and hurting more female students. And I love when I come into a class with lots of women in the class. Yeah, it's probably, there's probably more women here than men, which is even different from this morning. I'm not used to teaching classes with lots of women in it.

就像这些都是出现的问题。因此，我们围绕全球软件开发做了很多工作，以及如果您处于全球软件开发环境中，您需要采取哪些措施。所以这就是GSD和站在台上的女性，然后我们做了很多工作，伤害了更多的女学生。我喜欢当我进入一个班上有很多女性的班级时。是的，可能是，这里的女性可能比男性多，这与今天早上甚至不同。我不习惯教很多女性的课程。

It's always definitely 80% and then 90%, so it's going to be a nice change for me this semester to actually have two classes that have a lot of women and I very much welcome the men here as well.

总是肯定是80%，然后是90%，所以这个学期对我来说，实际上有两个班级有很多女性，我也非常欢迎这里的男性，这将是一个不错的变化。

Diversity is really important, but it's really it's just for even for me as a lecturer coming in, it's going to be a different dynamic, which is really nice. Also if we do interventions, so if we do school visits, if we're know mentoring or whatever, it's you know, we want to know if we're having success. I would look at that. I work with small companies, so one company I worked with was Home Safe Care, which did a lot of home

technology type.

多样性真的很重要，但实际上，即使对于我作为讲师来说，这将是一个不同的动态，这真的很好。此外，如果我们进行干预，如果我们进行学校访问，如果我们知道指导或其他什么，你知道，我们想知道我们是否成功。我会看看那个。我与小公司合作，所以我合作的一家公司是 Home Safe Care，它做了很多家庭技术类型。

Things for people who are older people particularly who want to stay in the communities with large companies. IBM, you have heard about Johnson and Johnson really has been very much around for a minute. Stan and people are a company that make.

适合老年人，尤其是那些想留在大公司社区的人。IBM，你听说过强生，而且强生真的已经存在了一分钟。Stan 和 People 是一家制造的公司。

Optical sisal management software for opticians. So that's a company that I did a lot, we did a lot of work and around global software development in Agile. How do we combine themselves?

适用于配镜师的光学剑麻管理软件。所以这是一家我做了很多工作的公司，我们做了很多工作，围绕着敏捷的全球软件开发。我们如何结合它们？

Working with the Health Organization. So the health Service Executive is the public service organization in Ireland that looks after our health system, CCIO, a branch of that. And I go to conferences and do publications. So that's all part of my research and that's me, I think, yes, teaching about me teaching. So software engineering. I teach about professional issues and software engineering. So I'm interested in the ethics of software engineering and looking at the analysis and design and that, you know, the requirement stuff comes under that for me. And software quality. So software quality and healthcare. So how is software being used and how we use it properly, use it properly and

how can we make it to good products?

与卫生组织合作。因此，卫生服务执行官是爱尔兰的公共服务组织，负责管理我们的卫生系统，CCIO是该系统的一个分支。我去参加会议，发表文章。所以这就是我研究的一部分，那就是我，我想，是的，教关于我的教。所以软件工程。我教授专业问题和软件工程。所以我对软件工程的伦理很感兴趣，并着眼于分析和设计，你知道，对我来说，需求的东西属于这个范围。和软件质量。因此，软件质量和医疗保健。那么，软件是如何被使用的，我们如何正确地使用它，正确地使用它，以及我们如何才能把它变成好的产品呢？

For people who are using it again processes and building software development, I've already talked about those. But outside of CSIS students which is what GR also worked with healthcare professionals, with people working in industry on medical device quality. So medical device is a very interesting quality attributes that we would look at. I do final year supervision, I do master supervision. So again the international group he won't have the pieces until next year, isn't that correct?

对于那些再次使用它的人，流程和构建软件开发，我已经谈到了这些。但是，除了CSIS学生之外，GR还与医疗保健专业人员合作，与从事医疗器械质量的行业人员合作。因此，医疗器械是一个非常有趣的质量属性，我们将对此进行研究。我做最后一年的监督，我做大师监督。所以国际集团他要到明年才能拿到作品，对吗？

So you don't need to worry about it yet, but you should take the opportunity to talk to some of your colleagues in the other class now because they'll, they've been working on their dissertations. So you know you've got a room now that you're sharing with them. So use the time a little bit to talk. Some don't use all the time because you've got to do some working talk as well. And I've also done teaching internationally and Uganda, Finland began at these three examples, more from a, you know, weak guest lecturing rather than teaching any

longer time. All my teaching has been done here and you are so.

所以你还不需要担心，但你现在应该借此机会与另一班的一些同事交谈，因为他们一直在写论文。所以你知道你现在有一个房间，你正在和他们分享。所以利用一点时间谈谈。有些不会一直使用，因为你也必须做一些工作谈话。我也做过国际教学，乌干达，芬兰从这三个例子开始，更多的是来自一个薄弱的客座演讲，而不是更长的时间。我所有的教学都是在这里完成的，你也是。

Yeah, so that's me. OK now?

是的，这就是我。现在好了吗？

If we were a smaller class, we would go around, but I will try and learn names and be patient. And I get there eventually. So we're 12 weeks. We need to get all your names. I should probably manage that and so the module. Then what are we doing in the module? So I should have masters in software Engineering and I'm recognizing some of the and the masters in Software Development, International systems.

如果我们是一个较小的班级，我们会四处走动，但我会尝试学习名字并保持耐心。我最终到达了那里。所以我们是 12 周。我们需要得到你所有的名字。我可能应该管理它，所以模块。那么我们在模块中做什么呢？所以我应该拥有软件工程的硕士学位，并且我正在认可一些软件开发、国际系统的硕士学位。

That's who should be here and I hope I have everybody from the international systems.

这就是应该在这里的人，我希望我有来自国际体系的每个人。

All the lectures will be recorded and available. I really, really, really say please turn off the lectures, OK? It's really important.

所有讲座都将被录制并可用。我真的，真的，真的说请关掉讲座，好吗？这真的很重要。

I've seen students say that know, oh, I look at her lecture I see it and we tend there's still some of them will come back to our candidates the lecture. I'm thinking this is the lecture News 1 and you can't get into it. So if you don't use this time.

我看到学生说，哦，我看了她的讲座，我看到了，我们倾向于仍然有一些人会回到我们的候选人那里。我想这是讲座新闻 1，你不能进入它。所以如果你不利用这段时间。

Students don't, so use the time your timetables.

学生没有，所以要利用你的时间表。

I'm also very.

我也非常。

What would I say? I want you to realize that just because you're just scheduled for two hours, that doesn't mean there's two hours work in the module. OK?

我会说什么？我希望你意识到，仅仅因为你只安排了两个小时，并不意味着模块中有两个小时的工作。还行？

When I was here and up until I suppose about 1520 years ago, our credit system was our own internal credit system and margin like this would be a 12% margin probably if not 15 and 12 credits would mean in this case two hours lectures.

当我在这里的时候，直到我想大约 1520 年前，我们的学分系统是我们自己的内部学分系统，像这样的保证金可能是 12% 的保证金，如果不是 15%，12 个学分在这种情况下意味着两个小时的讲座。

10 hours self study.

10 小时自学。

OK, so if you're scheduled every five modules this semester, 5, yeah. So in my head that is 60 hours work every week.

好的，所以如果你本学期每五个模块被安排一次，那么 5 个，是的。所以在我的脑海里，那就是每周工作 60 小时。

OK.

还行。

That's what it is. That's what being a full time student means. OK, now you might go as far as 60 hours, but please don't be looking and saying I've got 10 hours lecture so therefore I can take one or 40 hour week job, OK? You will not do well and you're investing a lot in being here in Ireland and doing this. So be very, very careful about that. And I know people have issues with money and people have to do some work and have to be very careful about the load you're taking on because we all have an expectation about what you'd be working.

就是这样。这就是成为全日制学生的意义。好吧，现在你可能会达到 60 小时，但请不要看着说我有 10 小时的讲座，因此我可以每周工作 1 到 40 小时，好吗？你不会做得很好，你在爱尔兰这里投入了很多，并这样做。所以要非常非常小心。我知道人们在金钱方面有问题，人们必须做一些工作，并且必须非常小心你所承担的负担，因为我们都对你的工作抱有期望。

From a college point of view and so lots of group work. In this class. The lecturers will have discussion exercises which will help your understanding of the topic. I really do plan mixing you up and you know that I've got two classes here, different focus, and I want you to learn from each other. There's no point in, you know, three women from China all working together. That is not a diverse group in my head. So you know, we try and make it work.

从大学的角度来看，有很多小组工作。在这课堂上。讲师将进行讨论练

习，这将有助于您理解该主题。我真的计划把你混在一起，你知道我这里有两节课，不同的重点，我希望你们互相学习。你知道，三位来自中国的女性一起工作是没有意义的。在我的脑海中，这不是一个多元化的群体。所以你知道，我们试图让它发挥作用。

That you do actually get to work with others.

你确实可以与他人合作。

So what's the schedule so face to face lectures?

那么面对面讲座的时间表是什么呢？

I have the room wrong. The joke earlier was I actually came to this room this morning for this morning's class. They were all waiting for me in one room and I'm here. So then I realized I got it wrong on my calendar. So anyway, 1 double lecture Thursday is 2 to 4 or Friday 11 to one, right? I've sent you a bright space message. I hope you got it. That said, keep Friday's 11 to one free and also.

我弄错了房间。前面的笑话是，我今天早上来这个房间是为了今天早上的课。他们都在一个房间里等我，我就在这里。所以后来我意识到我在日历上弄错了。所以无论如何，周四 1 次双讲是 2 比 4 或周五 11 比 1，对吧？我给你发了一条明亮的空间信息。我希望你明白了。也就是说，保持周五的 11 比 1 免费。

Heat Monday 46 free for these weeks as well. At the moment, I don't plan doing any lectures on Monday, but my schedule could change and I might have to use some of those days as well. OK, but I will as soon as I know you will know I get the timetable off on bright space and every week, you know, I'll always be telling you two or three weeks in advance of our classes, OK. So please just be aware of that.

这几周的 Heat Monday 46 也免费。目前，我不打算在周一做任何讲座，但我的日程安排可能会改变，我可能也不得不利用其中的一些日

子。好吧，但是一旦我知道你会知道我会在明亮的空间上取消时间表，每周，你知道，我总是会在上课前两三个星期告诉你，好吧。所以请注意这一点。

I think out of the whatever 12 lectures 4 at the moment, four are going to be on Fridays.

我认为目前在12场讲座中，有4场将在周五举行。

OK. Are you OK?

还行。你没事吧？

You OK? You understanding? Yeah, OK.

你还好吧？你明白吗？是的，好的。

So see bright space for the current lecture dates and times, and the timetable is subject to change. But I will say is you will get the full 12 weeks by two hours. Absolutely. It's up to you to turn off the stuff, and those are the times I'm using to give him the lectures. If I can't be here, and if I'm not here, it's because I absolutely can't be here.

因此，请看当前讲座日期和时间的明亮空间，时间表可能会发生变化。但我要说的是，您将在两个小时内获得完整的12周。绝对。由你来关掉这些东西，这就是我用来给他讲课的时间。如果我不能在这里，如果我不在这里，那是因为我绝对不能在这里。

Office hours So.

办公时间 所以。

If there's three kinds of enquiry that a student needs to make, one is the question you should ask in class OK?

如果学生需要提出三种问题，其中一种是你应该在课堂上问的问题，好

吗？

Do not want you to be coming to me during office hours asking some question you should have asked in class. I do not want you coming up to me after class. I do not want you putting on bright, yeah, emailing me and saying, you know a question that you should have asked in class. For every question that should be asked in trials, there are half a dozen people who want to ask the same question, so it is really important. I will encourage you if you're stuck if you don't understand.

不希望你在办公时间来找我，问一些你应该在课堂上问的问题。我不希望你下课后来找我。我不希望你装出一副聪明的样子，是的，给我发电子邮件说，你知道一个你应该在课堂上问的问题。对于在试验中应该问的每一个问题，都有六个人想问同一个问题，所以这真的很重要。如果你不明白，我会鼓励你。

If I'm saying something that makes no sense.

如果我说的话没有意义。

And it's not that you're challenging, you're just asking, you're just looking for clarification that is really, really important. OK. So you know I will not get cross or anything if people come back and say you went through that last slide, I didn't understand it. Can you go over it again and we work through it. OK. So that's the first thing. Those are those kinds of questions. The second ones then are you may yourself have some issue, whatever it might be that you need to talk to me separately about.

这并不是说你在挑战，你只是在问，你只是在寻找非常非常重要的澄清。还行。所以你知道，如果人们回来说你看完了最后一张幻灯片，我不会得到十字架或任何东西，我不明白。你能再看一遍吗，我们一起解决它。还行。所以这是第一件事。这些都是这样的问题。第二个问题是你自己可能有一些问题，无论你需要单独和我谈谈什么。

That's when you would use the office hours.

那时你会使用办公时间。

OK, come along. If so, you e-mail me. I'm in the Tierney building. As I mentioned, when you come up to the third floor, you will get a locked double door. So if I don't know you're coming, I'm not going to be there. To me this year, there is a bell. 90% of the time there is someone to answer that bell, but the day will come and that won't happen either. So just e-mail me and say either I want to talk to you about X and I will arrange an absolute time and I will make sure I'm at the door to meet you if it needs to be. OK. That's the second time.

好的，来吧。如果是这样，请给我发电子邮件。我在蒂尔尼大楼里。正如我所提到的，当你来到三楼时，你会得到一扇上锁的双门。所以如果我不知道你会来，我就不会在那里。今年对我来说，有一个钟声。90%的时间都有人接听那个铃声，但总有一天会到来，这也不会发生。所以只要给我发电子邮件，说我想和你谈谈X，我会安排一个绝对的时间，如果需要的话，我会确保我在门口见到你。还行。这是第二次了。

The third type is the emergency.

第三种是紧急情况。

OK, every student group I have had has always had at least one student who's had some emergency. That emergency is themselves. They're sick. Someone in their family is sick. They have a bereavement. Something is something has happened. OK, in that case, I am perfectly happy for you to e-mail me and say I need to talk to you urgently. OK. So as long as you tell me it's something urgent, I will set up the best time I can. It may be online, of course we use online a lot. It may be online, but I will absolutely come back to you, OK?

好吧，我遇到的每个学生小组总是至少有一名学生遇到紧急情况。这种

紧急情况就是他们自己。他们病了。他们家里有人是安全的。他们有丧亲之痛。有些事情已经发生了。好吧，在这种情况下，我非常高兴你给我发电子邮件，说我需要紧急和你谈谈。还行。所以只要你告诉我这是紧急的事情，我就会安排最好的时间。它可能是在线的，当然我们经常使用在线。它可能在线，但我绝对会回到你身边，好吗？

So just remember that ask questions in class, come to me during office hours if that's what it is. And thirdly, if it's an emergency, no problem coming to me. But I will say is if you are, if you're asking question outside of class that's class related, do it on bright space so everybody can see what it is, OK, So you don't put up, don't put up on bright space. I'm not feeling well today. I'm not coming to class, but do put up on bright space.

所以请记住，在课堂上提问，如果是这样的话，请在办公时间来找我。第三，如果是紧急情况，来找我没问题。但我要说的是，如果你在课外问与课堂相关的问题，在明亮的空间里做，这样每个人都能看到它是什么，好吧，所以你不要忍受，不要忍受明亮的空间。我今天感觉不舒服。我不来上课，但确实在明亮的空间里。

I was looking at this lecture. You've asked us to check out this paper. I can't access it. That's the kind of a bright space question. So someone else in the task might be able to answer it. Or someone else would say, oh, I've got that problem too. I just sent an e-mail to it and I'm getting 10 emails from 10 students instead of one person. You know, throwing it up and let us work it out, OK?

我正在看这个讲座。您要求我们查看这篇论文。我无法访问它。这是一个明亮的空间问题。因此，任务中的其他人可能能够回答它。或者其他人会说，哦，我也有这个问题。我刚刚给它发了一封电子邮件，我收到了 10 名学生而不是一个人的 10 封电子邮件。你知道，把它扔掉，让我们来解决，好吗？

So as long as we work like that, I'd be happy. And hopefully you'd be

happy, OK? So at night, Spencer's there are my officers.

所以只要我们这样工作，我就会很高兴。希望你会快乐，好吗？所以到了晚上，斯宾塞有我的军官。

So with Bright Space then as know it's Virtual Learning Environment, we'll be using it for announcements, submission of assignments, the resources, really the only resources I'm going to be giving outside, like any papers of that I'm just telling you on this will be the PTS and the recording of the lecture. So there the assignments are, the resources, the forums I've talked about already, and any personal queries directly to me, OK.

因此，有了 Bright Space，我们知道它是虚拟学习环境，我们将用它来发布公告、提交作业、资源，真的是我要在外面提供的唯一资源，就像我刚刚告诉你的任何论文一样，这将是 PTS 和讲座的录音。所以有作业，资源，我已经谈过的论坛，以及直接向我提出的任何个人问题，好的。

So the module then let me talk about the module itself. So the module says that I should provide you with an understanding of the processes. Oh no. Oh, that's the wrong one. It's about requirements. Sorry, but the topics are correct. Sorry.

所以这个模块接下来让我谈谈模块本身。因此，该模块说我应该为您提供对过程的理解。哦不。哦，那是错误的。这是关于需求的。对不起，但主题是正确的。不好意思。

Topics so the requirements process, the sources of requirements, the roles of stakeholders, uses of modelling, management of requirements and verification and validation of requirements.

主题包括需求过程、需求来源、利益相关者的角色、建模的使用、需求管理以及需求的验证和确认。

So it's about requirements. OK for your hair. Do you learn something about requirements?

所以这是关于需求的。适合你的头发。你对需求有所了解吗？

And Okay, so the module assessment is going to be in three assessments with three people in groups and we're going to form groups because I want to mix up people on the groups and first one is starting today and is due in week 3.

好的，所以模块评估将分为三个评估，三个人分组，我们将组成小组，因为我想把小组中的人混在一起，第一个从今天开始，在第三周到期。

OK. And it's going to be 10% of your assignments. See if we get them started air late, then by the time other people come in with them, you have finished them. So that's good.

还行。这将是作业的 10%。看看我们是否让它们开始播出得很晚，那么当其他人和它们一起进来时，你已经完成了它们。所以这很好。

As fast as believe it or not, second one then will be doing week 5 for 5% and that commences in week three. And third one is due week 1235% commencing in week 5.

信不信由你，第二个将在第 5 周进行 5%，从第三周开始。第三个是第 1235 周，从第 5 周开始。

And final exam 50% based on lectures and project work. So the people this morning will have 50% exam people this afternoon.

期末考试 50% 基于讲座和项目工作。所以今天早上的人今天下午会有 50% 的考试人。

OK, can I cover some of the queries this morning? It will be a written exam, OK? Won't be a multiple choice question. You'll actually have questions and you will have choices. You know there's some choice in

the questions. When I have the exam paper done, I will tell you about the paper. OK, that is not an album.

好的，我可以回答今天早上的一些问题吗？这将是笔试，好吗？不会是多项选择题。你实际上会有问题，你会有选择。你知道问题中有一些选择。当我完成试卷时，我会告诉你关于试卷的事情。好吧，那不是专辑。

OK, and so that's the exam. I'm also very what would I say? I'm also very careful, so when I do talk to you about the exam, you will see the instructions as around the exam paper rather than me copying or remembering. Am I getting wrong? That's not good. So that's what the assessment would be. So.

好了，这就是考试。我也很想说什么？我也非常小心，所以当我和你谈论考试时，你会看到试卷周围的说明，而不是我复制或记住的。我弄错了吗？那不好。这就是评估的内容。所以。

Individually, you can only receive a grade at maximum two grades above your individual grade. So if you score C3 in your exam and your group scores A1, your group assignments, your grades will be C1.

就个人而言，您最多只能获得比个人成绩高出两个等级的成绩。因此，如果你在考试中得分为 C3，而你的小组得分为 A1，那么你的小组作业，你的成绩将是 C1。

OK, so this means you have to actually work with group assignments. This is really important.

好的，这意味着您必须实际处理小组作业。这真的很重要。

I really, really push this, OK. So you will have the opportunity to appeal the decision through the provision of evidence. Now what we are going to do is I am going to get you into groups of three people.

我真的，真的推动这个，好吧。因此，您将有机会通过提供证据对该决

定提出上诉。现在我们要做的是，我要把你们分成三个人的小组。

What's going to be important is if you end up in a group with someone who isn't working.

重要的是，如果你最终与一个不工作的人在一个小组中。

OK, you probably think there's nothing I can do about it.

好吧，你可能认为我对此无能为力。

Now what I will say is it can be difficult to do something about. It's not easy, but if that happens, you have to talk to me. There is no point in coming to me in week 11 or 12 and saying Ethel was in our group and she did nothing.

现在我要说的是，做点什么可能很困难。这并不容易，但如果发生这种情况，你必须和我谈谈。在第 11 周或第 12 周来找我，说 Ethel 在我们小组中，她什么也没做是没有意义的。

OK, you've got to come to me. The other people in the group make a decision. We need to talk to Lisa. And then at least if I know a seat is not doing what she's supposed to be doing, I can talk to her and follow up and we can make some arrangements, whatever it is. OK, So that is one of the things I really find like where students are working in groups, they don't let us know. And then they come to week 11 or week 12. And I'm just saying, what can I do about this?

好吧，你得来找我。小组中的其他人做出决定。我们需要和丽莎谈谈。然后，至少如果我知道一个座位没有做她应该做的事情，我可以和她谈谈并跟进，我们可以做出一些安排，不管是什么。好吧，这是我真正发现的事情之一，比如学生在小组中工作，他们不会让我们知道。然后他们来到第 11 周或第 12 周。我只是说，我能做些什么呢？

There is nothing I can do. Whereas when people come and meet three

or four and say we haven't been able to meet Isa, she hasn't participated. At least then I can say, OK, do the two of you want to work on the project on your own and we put ESA on her own or we'll do something else. It can be done, but it can't be done. OK. So if you're having difficulties, do come back to me. I'm, you know, I'm in this game a long time. I'm happy to deal with issues. I mean, I'm not happy to see them or not to deal with them.

我无能为力。然而，当人们来见三四个人，说我们没能见到伊莎时，她就没有参加。至少那时我可以说，好吧，你们两个想自己做这个项目，我们让欧空局自己做，或者我们会做别的事情。可以做到，但做不到。还行。所以，如果你有困难，请回到我身边。我，你知道，我在这个游戏中已经很久了。我很乐意处理问题。我的意思是，我不乐意见到他们或不与他们打交道。

But if we have, we have to.

但如果我们有，我们就必须这样做。

OK. So that's the module assessment. Oh yeah, the repeat assessment, I forgot to mention this morning about the repeat. So the repeat assessment is where somebody actually fails the module.

还行。这就是模块评估。哦，是的，重复评估，我今天早上忘了提到重复。因此，重复评估是有人实际未能通过模块的地方。

OK, so you guess AD or an F&F really you might be told OK, if that happens, the group work is gone and you end up with 100% exam in August.

好吧，所以你猜AD或F&F真的你可能会被告知OK，如果发生这种情况，小组工作就消失了，你最终在八月份获得了100%的考试。

OK. The other type of assessment that happens in August, have you heard about I grades? No. OK, so a 9th grade is incomplete is what the

I stands for. So that's where you know you are sick the day of an exam and you can't do it. Then you can apply to the former university system to get a migrate.

还行。八月份发生的另一种类型的评估，你听说过 I 成绩吗？不。好的，所以 9 年级不完整是 I 所代表的。所以这就是你知道你在考试那天生病了，你不能这样做的地方。然后，您可以向以前的大学系统申请移民。

So which would have to earn if somebody dies, if people believe that type of thing. So there are so have a look at eye grades and see then if you end up having to you, we call it a repeat, but it's not a repeat because you're actually sitting your eye grade from an exam point of view. For me that's the 50%. If you've done all the group work, you know that group work will stand. Secondly, you do not have, you don't have your grades, your grades not capped.

因此，如果有人死了，如果人们相信这种事情，那将必须赚钱。所以有所以看一下眼睛等级，看看如果你最终不得不这样做，我们称之为重复，但这不是重复，因为你实际上是从考试的角度来看你的眼睛等级。对我来说，这是 50%。如果你已经完成了所有的小组工作，你就知道小组工作会成立。其次，你没有，你没有成绩，你的成绩没有上限。

So if you're online for an A1, you can still get an A1. And the third thing is that you don't have to pay any money to repeat to do that exam. OK, so the problem with eye grades is it just happens suddenly and you're suddenly at home very safe or having visited the doctor and you don't know what to do. I just failed my exam when you didn't. You can actually go through a university process. OK, So it is no harm to just have a quick look at it and just have it in your head. As I say, people like me that have been here a long time know about it and that, but it's a very formal process. It's not about me saying, oh.

因此，如果您在线获得 A1，您仍然可以获得 A1。第三件事是，你不必花任何钱来重复参加考试。好吧，所以眼科等级的问题是它突然发生，

你突然在家里非常安全，或者去看了医生，你不知道该怎么办。我只是考试不及格，而你没有。你实际上可以通过大学过程。好的，所以快速浏览一下它并把它放在你的脑海中是没有坏处的。正如我所说，像我这样在这里待了很长时间的人都知道这一点，但这是一个非常正式的过程。这不是我说，哦。

Ethan was great contributor and class which happened to miss the boss. So it's about you getting doctor's certs or you know, starts from an issue. Whoever, just to say this is exactly what's happened, so just be aware of that.

伊森是伟大的贡献者和班级，碰巧错过了老板。所以这是关于你获得医生证书，或者你知道，从一个问题开始。不管是谁，只是说这正是发生的事情，所以要注意这一点。

OK, so are we happy?

好吧，我们高兴吗？

Do we think we're happy?

我们以为我们快乐吗？

OK, so we're going to try and form one thing this time to that's the first thing is again.

好了，这次我们要试着形成一件事，第一件事又是。

OK, so when we're doing.

好的，所以当我们这样做时。

Things that are in Group work or that. Can someone please remind me to stop the recording? Otherwise what will happen is when you're looking at the recording, you're going to have 15 minutes of practically silence or number. So just say this morning when I was doing it, I

actually ended up stopping at three times, so the girl got the lecture in three cars.

小组工作或那个工作中的事情。有人可以提醒我停止录制吗？否则，当你看录音时，你会有 15 分钟的沉默或数字。所以说今天早上我做的时候，我实际上停了三次，所以那个女孩在三辆车里听了课。

OK So what I want to do.

好的，所以我想做什么。

Is I definitely want one of each class on each team.

我绝对希望每个团队的每个班级都有一个。

OK, so we have to now walk around and start meeting people. Don't be picking your teams yet. Hang on. Not like that.

好了，我们现在必须四处走走，开始与人见面。先不要挑选你的团队。坚持。不是那样的。

So there's a little bit of randomness here, so.

所以这里有一点随机性，所以。

Haven't over thought. This is always very hard to put teams together to be honest, but I have about 20 of the international systems team.

没有想太多。老实说，这总是很难将团队组合在一起，但我有大约 20 个国际系统团队。

Group and I have I think 16 of the software engineering group SO.

小组和我有 16 个软件工程小组 SO。

Basically, we should end up with.

基本上，我们应该以。

Nine teams.

九支球队。

To account to 94810 twelve 14161822 fourteen 16829 so I'm missing a few, well hard looking the ones we're missing.

考虑到 94810 12 14161822 14 16829，所以我错过了一些，我们错过了那些。

So.

所以。

Maybe will I just kind of throw names in the hat or something. No. Do you know what we do is I forget all yeah they're not stand up more than that I'm going to set up water all this good so people are in the international systems good if you can move to this side and the people who are in the software engineering groups they.

也许我只是把名字扔进帽子里什么的。不。你知道我们所做的是，我忘记了，是的，他们没有站起来，我会设置水，所有这些好，所以人们在国际体系中很好，如果你能搬到这边，那么在软件工程组的人，他们。

International International systems over here.

国际 国际系统在这里。

So do you want to possibly work together? Do you have you work together on things? So do you want to try and just make cares yourself to start with? I could end up squeezing me off, yeah.

那么，你们想合作吗？你们有没有一起做事？那么，你想尝试一下，一开始就让自己关心吗？我最终可能会把我挤掉，是的。

OK, I hear all the signals.

好的，我听到了所有的信号。

But some of you would have to be done with us, have repairs.

但是你们中的一些人必须和我们一起完成，进行维修。

Yeah, can you make twos like if you worked in twos before?

是的，你能像以前两人工作一样做两个吗？

So we all got twos now. OK, so.

所以我们现在都得到了两个。好的，所以。

Right. How many Jews that by? So maybe just sent out here in Paris, this country like online data or something?

右。有多少犹太人？所以也许只是在巴黎这里发出来，这个国家喜欢在线数据或其他什么？

That's a quick date. That's right. Just so I can see you in your pairs, are you 2 together and you two and you 2? Are you happy too? You're all that. You're all happy enough, OK?

这是一个快速的约会。没错。只是为了让我看到你们成对，你们两个在一起，你们两个和你们两个在一起吗？你也快乐吗？你就是这样。你们都很高兴，好吗？

Saying your parents OK, so 123456789.

说你的父母好，所以123456789。

123456789 OK they're your teams.

123456789 好吧，他们是你的团队。

One go to team one.

一去一队。

2.

2.

3.

3.

456.

456.

7789.

7789.

What's your name?

你叫什么名字？

OK.

还行。

OK, so team two, team two, team two, you've got a new member, So what can 4 in your team? OK, team four, team 4.

好了，第二队，第二队，第二队，你有一个新成员，那么你的团队中可以有4个成员吗？好的，第四队，第四队。

Team 6.

团队 6.

Them.

他们。

Teammates, teammates. OK, over here. OK, now we've got so we have 19, some with three and some are four, OK that's not a bad thing for any team. It's just probably easier just in the divide out. So you now got every team has somebody from software engineering and from do you call yourselves international systems, is that what you say? What do you say?

队友，队友。好的，在这里。好吧，现在我们有19个，有的有3个，有的有4个，这对任何球队来说都不是一件坏事。只是在划分中可能更容易。所以你现在每个团队都有软件工程的人，你称自己为国际系统，你是这么说的吗？你说什么？

Software development. OK, so software engineering and software development.

软件开发。好的，软件工程和软件开发。

OK, I will remember that maybe.

好吧，也许我会记住的。

So we've got teams. That was easy, wasn't it? OK, introduce yourself to your teammates.

所以我们有团队。这很容易，不是吗？好的，向你的队友介绍你自己。

And I think we're, I'm not sure where we're going to go next in this lecture. No, I don't think we're going to start the project just yet, but a quick introduction to each other and maybe exchange emails that's going to be important. And that's all for the minute, just do that and then we click on sit down somebody who supports them.

我想我们是，我不确定我们接下来要去哪里。不，我认为我们现在还没有开始这个项目，但快速介绍彼此，也许交换电子邮件会很重要。这就是一分钟的全部内容，只要这样做，然后我们点击坐下来支持他们的人。

I make them sometimes.

我有时会做它们。

The central schedule, but I don't know about you. Pull up my schedule here.

中央时间表，但我不知道你是怎么想的。在这里拉出我的日程安排。

I don't think so.

我不这么认为。

Actually your scheduled slash a bit, but mainly because of tutorials to be honest. That's why I was trying to find that thing.

实际上你预定的斜杠有点，但主要是因为说实话的教程。这就是为什么我试图找到那个东西。

What Can you add your number? Hey, sorry, can you scan? Can I can I take the photo with that? Because my phone dead so I only have the WhatsApp. OK yeah. So you need his number? No, he can just scan And yeah, I can scan that. Yeah, maybe chat later. So.

你能添加什么你的号码？嘿，对不起，你能扫描吗？我可以用它拍照吗？因为我的手机没电了，所以我只有 WhatsApp。好的，是的。所以你需要他的号码吗？不，他可以扫描，是的，我可以扫描。是的，也许稍后再聊。所以。

I just checking the picture. I would do scan later because my phone died, yeah.

我只是检查图片。我稍后会进行扫描，因为我的手机没电了，是的。

And I have your number. Let me just make a good check. Yeah. Thanks so much.

我有你的号码。让我好好检查一下。是的。非常感谢。

What is the software?

软件是什么？

You're stuck together now for 12 weeks.

你们现在被困在一起 12 周。

The other thing I say is make sure that the rest of the team don't come to me complaining about you, OK?

我说的另一件事是确保团队的其他成员不会来找我抱怨你，好吗？

I haven't texted. OK, yeah, I'll do it. I'll add you.

我没有发短信。好的，是的，我会做的。我会加你。

I don't know how it works.

我不知道它是如何工作的。

Yes, what's up?

是的，怎么了？

Muppet.

布偶。

Yeah, thank you. So, yeah, I'm software engineering student. So yeah, I

focus on the JavaScript for stake and I learned about the Linux. I use Gen. 2 Linux and I'm interested with that. So focus on the first take, government. Yeah, that's interesting. I don't care. Yeah, I just learning from the vitamin.

是的，谢谢。所以，是的，我是软件工程专业的学生。所以，是的，我专注于 JavaScript 的赌注，我了解了 Linux。我使用 Gen. 2 Linux，我对此很感兴趣。所以要关注第一个问题，政府。是的，这很有趣。我不在乎。是的，我只是从维生素中学习。

I do in the group.

我在小组里做。

But I will tell you actually have to look at your time, because you're all free.

但我要告诉你们，你们实际上必须看看你们的时间，因为你们都是自由的。

I think every day because I was trying not to give you a lecture from 4:00 to 6:00 because I plumbed on a Monday by half June. OK, back to your seat. So we have a minute.

我想每天都是因为我尽量不给你讲课，从 4:00 到 6:00，因为我在 6 月中旬的一个星期一。好了，回到座位上。所以我们有一分钟。

And I could say there's a prize for telling me what this is, except for the first related whose name is.

我可以说，告诉我这是什么，除了第一个名字的亲戚。

Anyone know?

有人知道吗？

Did you get it? Please throw all that. I don't know. I don't think.

你明白了吗？请扔掉所有这些。我不知道。我不认为。

In our love, today is Saint Bridget's Day.

在我们的爱中，今天是圣布里奇特节。

So you just female things. So you've heard of Saint Patrick?

所以你只是女性的东西。所以你听说过圣帕特里克？

'S day mainly So Saint Patrick Broadcasting is a female St. and my namesake St. ITA was an Ant of Saint Bridget. A little bit, but we in Ireland.

的一天主要是圣帕特里克广播是一只雌性圣，而我同名的圣伊塔是圣布里奇特的蚂蚁。一点点，但我们在爱尔兰。

People have been sending me messages. Other women, it's kind of become like an earlier mini Women's Day have been sending me messages, wishing me a happy same British day, nice messages about saying, you know, May God bless your house and may your family be safe and that. Can't we do that? So anyway, these are, these are Russia's, they're just from white fields. Get lots of them in Ireland and we make these crosses and in different parts of the country the centre can be done differently. Did they tell you that?

人们一直在给我发信息。其他女人，这有点像一个早期的迷你妇女节一直在给我发信息，祝我英国节日快乐，美好的信息说，你知道，愿上帝保佑你的房子，愿你的家人平安等等。我们不能这样做吗？所以无论如何，这些是，这些是俄罗斯的，它们只是来自白色的田野。在爱尔兰得到很多，我们做这些十字架，在该国的不同地区，中心可以以不同的方式完成。他们告诉你了吗？

Yeah, I think they showed us the special ones delivered, but that was a

bit too at once for me. Yeah, but that's the one I make. I'm from the Midlands in Ireland and that's the one we make. So you see, you make the one that's we could make. And we watched a moment the other day in Russia is in the field and so it must work against some Russia, but there you'll be able to do some with your friends later.

是的，我认为他们向我们展示了交付的特殊产品，但这对我来说有点太过分了。是的，但那是我做的。我来自爱尔兰的中部地区，这就是我们做的。所以你看，你做了我们可以做的那个。前几天我们在俄罗斯看了一会儿，所以它必须对一些俄罗斯起作用，但在那里你可以和你的朋友一起做一些事情。

If you'd like to make this, no, you walk away.

如果你想做这个，不，你走开。

It's one of those days, anyway, that's a little silly diversion.

无论如何，这是那些日子之一，这有点愚蠢的消遣。

So we now have our teams and you have a project during Week 3 and I will tell you what it is before you leave. So don't worry, we'll get to that. So I'm going to resume recording.

所以我们现在有我们的团队，你在第三周有一个项目，我会在你离开之前告诉你它是什么。所以别担心，我们会谈到的。所以我要继续录制。

So now I want to talk a little bit about problem based learning, which is the kind of teaching I do. Again, the people that were here this morning, we've had this already.

所以现在我想谈谈基于问题的学习，这就是我所做的那种教学。再说一遍，今天早上在场的人们，我们已经有过这样的经历。

So with PBL what we do is basically you have to come up with a solution for a problem.

因此，对于 PBL，我们所做的基本上是你必须为一个问题提出解决方案。

By yourselves.

靠你们自己。

OK, so I could be a problem. You have to solve it.

好吧，所以我可能是个问题。你必须解决它。

And through doing that you will learn all about performance engineering. OK, so the starting point is the problem to be solved and basically the whole course is going to be around a problem that you have to solve, and through solving it you're going to learn about the topic, so you're going to have to do various you readings.

通过这样做，您将学习有关性能工程的所有知识。好的，所以起点是要解决的问题，基本上整个课程将围绕一个你必须解决的问题，通过解决它，你将了解这个主题，所以你将不得不做各种阅读。

Project group meetings, coming up with solutions, and that's the motivation for the class, so you won't have to listen to me talking. This will be the longest lecture I will give in the whole semester, OK?

项目小组会议，提出解决方案，这就是课堂的动力，所以你不必听我说话。这将是整个学期最长的一次讲座，好吗？

So the learning is student centred, so it's about G learning yourselves in small student groups. So we've now formed our small student groups and there is a facilitator. So when you're working in your groups during class time, I would be walking around trying to figure out what have you learned.

所以学习是以学生为中心的，所以这是关于在小组中学习自己的。因此，我们现在已经组建了小型学生小组，并有一个辅导员。因此，当你

在上课时间在小组中工作时，我会四处走动，试图弄清楚你学到了什么。

Are you going wrong?

你走错了吗？

Why are you going wrong? Can I have we talked about the rabbit hole this morning? You know, going down a rapid hole, going the wrong way that I will pull you back out for two years and get you back on the right track. So that's my role, is helping you to make sure that you're going the right way.

你为什么会出错？今天早上我们能谈谈兔子洞吗？你知道，走一个快速的洞，走错路，我会把你拉回来两年，让你回到正确的轨道上。这就是我的职责，就是帮助你确保你走在正确的道路上。

So we just present a problem right at the start before you've learned anything. So there will be certain topics through the semester where somebody has found out something and I've said I probably should give you half an hour on that.

因此，我们只是在你学到任何东西之前，在一开始就提出一个问题。因此，在整个学期中，会有一些主题有人发现了一些东西，我说过我可能应该给你半个小时的时间。

OK, but it's about trying to get everybody learning through working with each other.

好吧，但这是关于让每个人都通过相互合作来学习。

So you could achieve the required knowledge and the problem solving skills. OK so it's one thing we stand during lecturing. You probably get the knowledge but you won't get the problem solving skills.

Interestingly one group I had last semester I had second year and it

was requirements engineering as well and we were doing problem based learning and one of the young men came up to me one day and he had done a Co-op interview. You know where there's students grabbing work placement.

因此，您可以获得所需的知识和解决问题的技能。好的，这是我们在讲课时坚持的一件事。你可能会得到知识，但你不会得到解决问题的能力。有趣的是，我上学期有一个小组，我是第二年，也是需求工程，我们正在做基于问题的学习，有一天，其中一个年轻人来找我，他做了一个合作社面试。你知道哪里有学生在抢工作机会。

He said they asked me to tell me one interesting thing that I was learning in college and I taught them all about your class and the problem solving and the learning and he got the job. He was very excited. But he said, he said it was really good to something very tangible and different to talk about. OK, so we do get my stories like that back and you learn new information through self-directed learning. So it's kind of even like, you know, St. Bridget's Frost, you know, you didn't think you were going to learn about that today. You had a little less than everything. So I don't believe in.

他说他们让我告诉我一件我在大学里学到的有趣的事情，我教他们所有关于你的课程、解决问题和学习的知识，他得到了这份工作。他非常兴奋。但他说，他说，谈论一些非常有形和不同的东西真的很好。好的，我们确实把我的故事找回来了，你通过自主学习学习来学习新的信息。所以这有点像，你知道，圣布里奇特的弗罗斯特，你知道，你没想到你今天会学到这些。你拥有的比一切少一点。所以我不相信。

Everything has to be so structured. I think where things aren't structured, sometimes you can really write an awful lot.

一切都必须如此结构化。我认为在事情没有结构的地方，有时你真的可以写很多东西。

It does require you to read. It does require yourself study. It does

require your work outside class. So books. I recommend of reading today that I'm recommending just 4 pages from an online book Go away and read it and publish conference for during our conference. Papers available to the library web pages. So you might have to walk yourself without me telling you what you've got to do. Might be something he is group side to do. I notify you about some papers in class but reading outside class.

它确实需要您阅读。它确实需要自己学习。它确实需要你在课外工作。所以书。我建议今天阅读，我推荐一本在线书籍中的 4 页，离开并阅读它并在我们的会议期间发布会议。图书馆网页上可用的文件。所以你可能不得不自己走路，而我没有告诉你你必须做什么。可能是他要做的事情。我通知你一些在课堂上但课外阅读的论文。

Is important for your assignments. Don't worry about the reflective journal. We're not doing one that's gone.

对你的作业很重要。不要担心反思日记。我们不是在做一个已经消失的东西。

So that's what you do. So very I I'd like to do this exercise, so maybe in your groups when you stand up and get into your groups for a couple of minutes or don't sit down like you put chairs around. OK, so move to your groups and just have a quick discussion why should you be taking?

所以这就是你要做的。所以我想做这个练习，所以也许在你的小组中，当你站起来进入你的小组几分钟，或者不要像你把椅子放在周围一样坐下来。好的，所以转到你的小组，快速讨论一下你为什么要参加？

That's it.

就是这样。

So I for all the questions, OK, so why should you be taking the modules

compared to other modules? What's different, what's similar? And have you any concerns? I do want to be if anyone has any concerns, OK?

所以我回答了所有的问题，好吧，那么与其他模块相比，为什么要学习这些模块呢？有什么不同，有什么相似之处？你有什么顾虑吗？如果有人有任何顾虑，我确实想成为，好吗？

No idea what that means.

不知道这意味着什么。

So why should we be taking this module?

那么，我们为什么要学习这个模块呢？

We didn't have a choice.

我们别无选择。

We have no choice.

我们别无选择。

What's the aims and objectives of this module helps us model solving?

本模块的目的和目标是什么，可以帮助我们进行建模求解？

I don't know. I'm just guessing.

我不知道。我只是猜测。

At least this one's recorded. Yeah, it can work. I don't know. But I'm going to go projects and we'll not be outside of the plan. I don't think so because I think when she said we three-week 5 and they were maybe we're going to discuss in the class and talk about it like sort of like this interaction because I don't think we'll be literally physically preparing projects like I think it's.

至少这个被记录下来。是的，它可以工作。我不知道。但我要去做项目，我们不会超出计划。我不这么认为，因为我认为当她说我们三周 5 时，他们可能会在课堂上讨论并谈论它，就像这种互动一样，因为我认为我们不会像我认为的那样真正准备项目。

Talking about, I mean, I'm free anyways.

说到这里，我的意思是，反正我是自由的。

This time is good for me.

这次对我来说是件好事。

Because I would otherwise work until 2:00, but now I just work until 1:30 everyday. Everyday. The days that I don't have, we don't have like 2-2. I work until 3:00.

因为否则我会工作到 2:00，但现在我每天只工作到 1:30。每天。我没有的日子，我们没有 2-2。我工作到 3:00。

A part and job. Part time job great.

零件和工作。兼职工作很棒。

So we will have some project before the weekend three, right? Yeah.

所以我们会在周末三之前有一些项目，对吧？是的。

Next week.

下个星期。

OK.

还行。

Even on days that because I work, we both work part time, so if we

can't meet up to discuss things, is it OK if we do it on the team, teams, teams meeting and we can work through a project?

即使在因为我工作的日子里，我们俩都在兼职工作，所以如果我们不能见面讨论事情，如果我们在团队、团队、团队会议上这样做，我们可以完成一个项目，可以吗？

OK.

还行。

What is different about this model is we're interactive and more focus is put on problem solving rather than just dictating. What is similar about this? We're talking about very similar.

这种模式的不同之处在于我们是互动的，更多的注意力放在解决问题上，而不仅仅是口述。这有什么相似之处？我们谈论的非常相似。

Topics of engineering and computers and.

工程和计算机主题。

I guess the same thing to do for coding here.

我想在这里编码也要做同样的事情。

Any concerns?

有什么顾虑吗？

And then send high level abstract with a different module so.

然后发送带有不同模块的高级摘要。

Similar or similar is a different module.

相似或相似是不同的模块。

We all have assignments.

我们都有任务。

Come on. Perfect.

加油。完善。

Nothing, really. We've been here. What, an hour?

没什么，真的。我们来过这里。什么，一个小时？

I was a bit scared about the.

我有点害怕。

I think even fake.

我认为甚至是假的。

He's releases assembly. He said the same thing. He's like, he gave us like a whole ***** different thing.

他正在释放集会。他也说了同样的话。他就像，他给了我们一个完全不同的东西。

To your neighbor, the person beside you. Then talk to your cat, then talk to your teaching assistant and nothing is nothing. Then reach out to me.

对你的邻居，你身边的人。然后和你的猫说话，然后和你的助教说话，什么都不是。然后联系我。

Talk to your cat.

和你的猫说话。

Yeah. Why are you getting paid if I can't talk to you? Yeah, I don't understand them, but OK.

是的。如果我不能和你说话，你为什么要得到报酬？是的，我不明白他们，但没关系。

Based on your project and your work, so.

根据您的项目和工作，所以。

Yeah, I didn't understand what the final examination, So she said that the final examination will be based on all the material that we deliver.

是的，我不明白期末考试是什么，所以她说期末考试将基于我们提供的所有材料。

Doing the lectures.

做讲座。

And so it won't be multiple choice. There may be some options, but it's going to be a mix. So maybe essay writing, essay type questions as well as some of the type and yeah, something like that.

所以它不会是多项选择。可能有一些选择，但它将是一个混合。所以也许是论文写作，论文类型的问题以及一些类型，是的，类似的东西。

She said as she's done preparing the final paper, she let us know exactly how the structure is going to be. She said about it. If you only get the final exam or you get the three and then your project.

她说，当她完成最后的论文准备时，她让我们确切地知道结构将如何。她说。如果你只拿到期末考试，或者你拿到三门，然后是你的项目。

True or Tim, we got a one, but you only get two higher C1.

True 或 Tim，我们得到了一个，但你只得到了两个更高的 C1。

\$100

100 美元

really bad. And I mean, I do understand that it says something.

真的很糟糕。我的意思是，我确实明白它说了些什么。

They should go to the. I did, but I just went like the last few minutes because I finished work at 1:30.

他们应该去。我做到了，但我只是像最后几分钟一样，因为我在 1:30 完成了工作。

And testing my friend went, it was sort of this really, yeah, he said. He got a business and everything, really.

测试我的朋友去了，真的是这样，是的，他说。他得到了生意和一切，真的。

No, it was like what is he studying? OK, so maybe because when I went to mechanical engineering, engineering.

不，就像他在学什么？好吧，也许是因为当我去机械工程时，工程。

So why should you be taking this module?

那么，为什么要学习这个模块呢？

Why should you be taking Miss Montgomery?

你为什么要带蒙哥马利小姐？

I don't the group. The group. I'm sorry.

我不参加小组。该组。对不起。

Because this module is focused on problem solving and it helps us develop that skill as well as understand more about the engineering requirements. OK, what about G?

因为本模块专注于解决问题，它帮助我们发展该技能并更多地了解工程要求。好吧，G呢？

Why should you be taking the module?

为什么要参加这个模块？

OK, so it's a good way to become a project manager. Ambition, ambition, ambition. I love us. OK, so you're analyzing the product you're going to, you know, you're looking at where you're going to go with it. What about you? What did you come up with?

好的，所以这是成为项目经理的好方法。野心，野心，野心。我爱我们。好的，所以你正在分析你要去的产品，你知道，你正在研究你要去哪里。你呢？你想出了什么？

Understanding the stakeholders requirement. OK, so you want to understand the stakeholders. Another word that we've got to think about a little bit.

了解利益相关者的要求。好的，所以你要了解利益相关者。我们必须考虑的另一个词。

It's more about client oriented.

它更多的是关于以客户为导向。

To become more times oriented, yes. OK. And here one of the things you were mentioning like the resistance to change. Like if you have code, you're less likely to change it. Like to learn process.

为了变得更加以时代为导向，是的。还行。在这里，你提到的一件事，

比如对变革的抵制。就像你有代码一样，你不太可能改变它。喜欢学习过程。

OK. So just trying to improve things as they're going. OK, so the second question, so you didn't have to be prepared, Anything here about what's different about the module?

还行。所以只是试图在事情进展的过程中改进它们。好的，所以第二个问题，所以你不必做好准备，这里有关于模块有什么不同吗？

And I think it's.

我认为是这样。

OK.

还行。

OK, so it's a different mode of teaching from lecturing to discussion. OK, what about you? Did you come up with something? You're in the middle.

好的，所以这是一种不同的教学模式，从讲课到讨论。好吧，你呢？你想出什么了吗？你处于中间。

I don't mind which of the answers so.

我不介意哪个答案是这样。

OK, so what's the same or what's different?

好的，那么有什么相同或不同之处？

To other modules similarly different. I think like for some of our modules like it's really practical like maybe we start to learn some assets that we get into a project we need and basically that's all right and goes. I think

maybe this exposure is not really like that. OK. So yeah, I think less technical, you'll start to get into code and this is something a little bit quite different. OK who else didn't you?

对其他模块也类似。我认为，对于我们的一些模块来说，它真的很实用，就像我们开始学习一些资产一样，我们可以进入我们需要的项目，基本上没问题。我想也许这种曝光并不是真的那样。还行。所以，是的，我认为技术性较差，你会开始进入代码，这有点完全不同。好吧，还有谁不是你？

Like.

喜欢。

All about the common gathering, so this is the initial step you need to take in SDLC. OK. So we need to be very software development life. No, that's OK Just to make sure if we are very care about that step, then we can make a good quality product. OK. So you're saying we have to get requirements engineering right so that we can get our project along the way. OK And the last question is any concerns?

所有关于共同聚会，所以这是您在 SDLC 中需要采取的第一步。还行。所以我们需要非常软件开发生活。不，没关系，只是为了确保如果我们非常关心这一步，那么我们就可以制造出优质的产品。还行。所以你是说我们必须把需求工程做好，这样我们才能把我们的项目推进到这个过程中。好的，最后一个问题是有什么顾虑吗？

So the only group who hadn't answered me were ye Have ye any concerns?

所以唯一没有回答我的那群人是你，你们有什么顾虑吗？

In the group by the group No. Happy. Happy, yeah.

在组中按组号。快乐。快乐，是的。

Happy.

快乐。

Yeah.

是的。

No queries and this is your opportunity as a group to make a queries. I don't know who is asked the query. No OK.

没有查询，这是您作为一个小组进行查询的机会。我不知道谁被问到查询。不行。

We had one concern you have concerned which is a time management because we didn't actually get to the last one, OK, time management, OK, you can get the last part, OK. And that's part of in a way that's part of why we start assessments now because you know we can be following through and getting moving on things. You'll also be doing group work in class, so you'll be able to see.

我们有一个你关心的问题，那就是时间管理，因为我们实际上没有达到最后一个，好吧，时间管理，好吧，你可以得到最后一部分，好吧。在某种程度上，这也是我们现在开始评估的部分原因，因为你知道我们可以坚持到底并继续前进。您还将在课堂上进行小组作业，因此您将能够看到。

You hear others talk about what they're doing. They're still way behind or we're way ahead. And I'll also be keeping an eye on things. Quite Chelsea. So it kind of helps with the practical time management at the end of the day. OK. And I do you have any concerns? No. We're happy. You're happy. Good. That's what I like. Happy class, OK?

你听到别人谈论他们在做什么。他们仍然远远落后，或者我们遥遥领先。我也会密切关注事情。相当切尔西。因此，它有助于在一天结束时进行实际的时间管理。还行。你有什么顾虑吗？不。我们很开心。你

很开心。好。这就是我喜欢的。祝您上课愉快，好吗？

I'll talk to you in week 12.

我会在第 12 周和你谈谈。

So that's all the summary. So I think it's really important here. I always feel it's very important to do summary so that where you stand around things. And as I say, look, I'm around and you can talk to me, I don't think you can talk to me anyway. And we work out anything that has to be worked out. So we're going to do a bit on requirements engineering.

这就是全部的总结。所以我认为这真的很重要。我总觉得做总结非常重要，这样你才能站在事情的周围。正如我所说，看，我在附近，你可以和我说话，我认为你无论如何都不能和我说话。我们解决任何必须解决的问题。因此，我们将在需求工程方面做一些工作。

OK, so majorly I'm turning into a problem. OK remember I said problem trouble chopping so.

好吧，主要是我变成了一个问题。好的，记得我说过问题，麻烦切碎。

What we do this time, I think 'cause it'd probably be good not to always be working in your group. So if everybody can just get into pairs, someone not in your group, so like the three of you could go with the three here in three separate pairs. So just get out along into pairs. So listen to Broadway 1st. So you're working in a software development company. SDC is software development company. The business is to develop, tests and implement software packages which are required by your customers.

我们这次所做的，我认为'因为不要总是在你的团队中工作可能会很好。因此，如果每个人都可以成对，不在你小组中的人，那么就像你们三个人一样，可以和这里的三个人分成三对。所以就成双成对地出去吧。所以听百老汇第一。所以你在一家软件开发公司工作。SDC是一家

软件开发公司。业务是开发、测试和实施客户所需的软件包。

OK, so up the road there's a hotel manager who knows little about software engineering but has used some software packages in the past. They've come to SDC looking for a new software system. OK, this is pretty common scenario, right? The hotel opening a restaurant and the want STC to develop, test and implement a new system for them. OK, so you're the management team in SDC. Sorry, I meant to say that in SDC.

好的，所以在路上有一位酒店经理，他对软件工程知之甚少，但过去使用过一些软件包。他们来到 SDC 寻找新的软件系统。好吧，这是很常见的情况，对吧？酒店开了一家餐厅，并希望 STC 为他们开发、测试和实施一个新系统。好的，你是 SDC 的管理团队。对不起，我的意思是在 SDC 中这么说。

So think about 5 stakeholders that you consider might be interested in this project.

因此，请考虑您认为可能对该项目感兴趣的 5 个利益相关者。

And take 3 stakeholders, any of those five, take three of them and list 5 requirements for each, OK. So you can have 5 stakeholders and then you have to take three and there's five requirements. And to help you with the time management, I will call out the 5 minutes that you should now be moving on to the second question.

选取 3 个利益相关者，这 5 个中的任何一个，从中选出 3 个，为每个利益相关者列出 5 个要求，好。因此，您可以有 5 个利益相关者，然后您必须采取 3 个利益相关者，并且有五个要求。为了帮助你进行时间管理，我将指出你现在应该继续回答第二个问题的 5 分钟。

OK, so deal with somebody that isn't in your team. OK, so move around, point chair.

好吧，所以与不在你团队中的人打交道。好了，所以四处走动，点椅子。

So what do we need to do now?

那么我们现在需要做什么呢？

I'm confused. So all the questions.

我很困惑。所以所有的问题。

Group just different person.

只是对不同的人进行分组。

Yeah. So they're being trained people over here.

是的。所以他们正在这里接受培训。

So these five stakeholders.

所以这五个利益相关者。

Spare or.

备用或。

Talk to this lady here, OK? You stand up and leave. My lady over here. Can you talk to him?

在这里和这位女士谈谈，好吗？你站起来离开。我的夫人在这里。你能和他谈谈吗？

Yeah.

是的。

Have you someone you have?

你有你的人吗？

A whole other size.

完全不同的尺寸。

Taking an old Someone has to report bad, someone has to report badly someplace, yeah.

拿一个老人来说，有人必须报告坏事，有人必须在某个地方报告坏事，是的。

So today the.

所以今天。

I think that so just hold on.

我想，所以坚持下去。

A.

一个。

Button.

按钮。

CEO.

首席执行官。

List the five requirements for each.

列出每个要求的五个要求。

Five points with one trend.

五点，一个趋势。

Nice discussion here. So the first one.

这里很好的讨论。所以第一个。

Just one second. First one to ask you is how many people know what a stakeholder is?

只需一秒钟。首先要问你的是，有多少人知道什么是利益相关者？

Some party who are no hands up, I want to see how many people, so many people are having a clue.

有的派对谁没举手，我想看看有多少人，这么多人都有头绪。

How many people actually went away and looked it up to find out? OK, that's part of your problem based learning. I'm not going to tell you what stakeholder is. You got to figure that out yourselves. Okay. So.

有多少人真的离开了，查了一下就知道了？好的，这是你基于问题的学习的一部分。我不会告诉你什么是利益相关者。你们必须自己弄清楚。好。所以。

What did you say? We have some people who worked in pharmacy. This is really good. What did you say stakeholder was? OK, Stakeholders. I'm in a management team who are not. I want to work on that project. I will pick someone. So it is like that. So no, it's the officers. Sorry, what were you saying? Yeah, the stakeholder means the users like who are, but the users are one stakeholder.

你说什么？我们有一些人在药房工作。这真的很好。你说的利益相关者是什么？好的，利益相关者。我所在的管理团队并非如此。我想参与这个项目。我会选一个人。所以就是这样。所以不，是军官。对不起，你

在说什么？是的，利益相关者是指用户喜欢谁，但用户是一个利益相关者。

OK. So then the management team, so from the client part and the company part, right, so the stakeholders?

还行。那么管理团队，那么从客户部分和公司部分，对吧，所以利益相关者？

And who else wants to have a stab at what the stakeholders are?

还有谁想尝试利益相关者是什么？

OK, So what are you saying?

好吧，那你在说什么？

Right. Order some steak. But what does it. OK, what did he come up with? What I gathered is that all the parties that are involved in or are affected or are affected by the like for this situation, the software. So maybe the new system. Yeah, like, yeah, everybody from the development to the end user, end user and all the time, Yeah, OK, so anyone who's involved in the new system.

右。点一些牛排。但是它有什么作用。好吧，他想出了什么？我收集到的是，所有参与或受到影响或受此类情况影响的各方，软件。所以也许是新系统。是的，就像，是的，从开发到最终用户，最终用户的每个人，一直以来，是的，好的，所以任何参与新系统的人。

OK, so not just.

好吧，所以不仅仅是。

That developers, but just to get the users, it's everybody, but it's very much normally from the how did I try and say here the client's perspective?

那个开发人员，但只是为了获得用户，这是每个人，但这是非常正常的，我如何尝试在这里说客户的角度？

OK, so but the client is more than the user.

好的，所以，但客户端不仅仅是用户。

That's why I was trying to get you to this five.

这就是为什么我试图让你达到这五个。

Did you come up with five? OK, right. Well, we dropped the five and then we look at the second-half of the question, OK.

你想出五个了吗？好的，对。好吧，我们去掉了五个，然后我们看看问题的后半部分，好吧。

This is OK. This is what problems are about and it's about. So even though I say work in pairs, are you in the right class? Sorry, yes.

这没关系。这就是问题的意义所在，也是问题的意义所在。因此，即使我说成对工作，你也选对了班级吗？对不起，是的。

OK, sorry. That's OK as long as you are. I don't want someone here for English journey. We're talking about requirement.

好的，对不起。只要你是，那没关系。我不希望有人来这里进行英语之旅。我们谈论的是需求。

You need to get into a project group or we do that in a minute and so. 您需要进入一个项目组，或者我们在一分钟内完成。

So when we talk about the stakeholders on the requirements perspective, it's about who has an interest in the system. So you're right, it's about the holder of state, the stakeholder, the person has an

interest. Naturally we all jump at the user.

因此，当我们从需求的角度谈论利益相关者时，它是关于谁对系统感兴趣。所以你是对的，这是关于国家的持有者，利益相关者，这个人有利益。自然而然地，我们都跳到用户身上。

OK, but the user even can be broken down into subsets. OK, so let's try and show some of I have. Sorry I have recording, that's why we have the lecture.

好的，但用户甚至可以分解为子集。好的，让我们试着展示一些我所拥有的。对不起，我有录音，这就是我们举办讲座的原因。

So I record again.

于是我又录了一遍。

So let's go to the next slide here. OK, call out around the room who has stakeholders, where do you stop? Sorry, waiting stuff, waiting staff.

因此，让我们转到下一张幻灯片。好吧，在房间里喊出谁有利益相关者，你在哪里停下来？对不起，等待的东西，等待人员。

Anyone else restaurant?

还有其他餐厅吗？

Sorry, restaurant. How do you mean the restaurant?

对不起，餐厅。你怎么说餐厅？

The employees? The manager. OK, but let's think about them as separate.

员工？经理。好的，但让我们把它们看作是分开的。

OK, the manager.

好的，经理。

Where? Who said Software Manager? What do you mean by software manager? Software manager will mobilize?

哪里？谁说软件管理器？软件管理器是什么意思？软件经理会动员起来吗？

Manager, the developer. Developer to develop the package. No, we're thinking about it from the user, from the restaurant perspective. OK, yeah, the restaurant perspective. But we could have a software manager because we could have somebody who's going to manage that software in the restaurant, OK. That's why I pushed you on that. OK, so the restaurants software manager.

经理，开发人员。开发人员来开发软件包。不，我们从用户的角度，从餐厅的角度来考虑。好吧，是的，餐厅的角度。但是我们可以有一个软件经理，因为我们可以有人在餐厅里管理这个软件，好吧。这就是我推动你的原因。好的，餐厅软件经理。

Am I gonna have to keep this in but anyway?

无论如何，我都必须保留它吗？

As in response, Software. OK. Anything else? Anyone else? Sorry, you started talking? Sorry, down here you're the manager, the employees. But you see the way we've broken this down, Waiting staff, that's one category of employees. Any other categories we might be interested in?

作为回应，软件。还有别的吗？别人？对不起，你开始说话了？对不起，在这里你是经理，是员工。但是你看我们分解它的方式，服务员，这是一类员工。我们可能感兴趣的其他类别吗？

Come on, you're all talking now. How else have we got the project

manager from SDC, the project manager, There we go. We're looking at it from the client's perspective as the stakeholder. OK, so the customer, the end user. OK, so who's the customer?

来吧，你们现在都在说话。不然我们怎么会从SDC那里得到项目经理，项目经理，我们开始了。我们从客户作为利益相关者的角度来看待它。好的，所以客户，最终用户。好的，那么谁是客户呢？

That kind of if they want to book online, OK.

如果他们想在线预订，那很好。

Me as the person who's coming, That's the cost of. So we talk about them as the customer. Yes. Yeah. So it's the restaurant. OK, I'm going to coffee restaurant.

我作为即将到来的人，这就是代价。因此，我们将他们视为客户。是的。是的。所以是餐厅。好的，我要去咖啡厅。

And then that should make it a bit easier. OK, who else?

然后这应该会让它变得更容易一些。好吧，还有谁？

Come on, you've had you have a list of five. I've only got four groups. Multiply be another one.

来吧，你已经有了五个清单。我只有四组。乘以另一个。

The chef. So the cooking staff. OK, the case when, let's call them the case ring.

厨师。所以烹饪人员。好吧，当这种情况发生时，我们称它们为案例戒指。

Online delivery, sorry, online generation, online delivery. So we're talking about the online customer, online customer.

在线交付，对不起，在线生成，在线交付。所以我们谈论的是在线客户，在线客户。

As distinct from the person who walks in.

与走进来的人不同。

Anyone else? What about over here 2nd row there? Have you some?

别人？第二排那边呢？你有吗？

Talk manager. No here. We're looking over here. The group now you've been talking, I need to get some. Did you come up with any other stakeholders?

谈话经理。这里没有。我们在这里看。现在你一直在谈论的小组，我需要得到一些。你有没有想到其他利益相关者？

So this really is this restaurant software manager. We leave that at that. OK, next group, did you come up with some?

所以这真的是这个餐厅软件管理器。我们就此结束。好的，下一组，你想出一些了吗？

Dictate an exercise.

口述练习。

Big data. I don't understand why we have big data.

大数据。我不明白我们为什么有大数据。

Such as. And they can collect the data of customer. OK, so maybe the marketing people, right? So the marketing people want to analyze the restaurant data. That makes lots of sense, doesn't it? OK, but let's think about them in a category. I'm just trying to talk them into categories.

如。他们可以收集客户的数据。好吧，也许是营销人员，对吧？因此，营销人员想要分析餐厅数据。这很有道理，不是吗？好的，但让我们将它们放在一个类别中考虑。我只是想把它们分成几类。

Anyone else along the line? Anyone different?

还有其他人吗？有什么不同吗？

Staff management, OK? People want to keep an eye on the staff.

员工管理，好吗？人们希望密切关注工作人员。

We call them people because they're stakeholders here. Anyone else.

我们称他们为人，因为他们是这里的利益相关者。别人。

Did you come up with anything else?

你想出别的了吗？

The investors, the ones who own the restaurant, I want my money's gone in here. I want to make sure that I've got a stake in the system.

投资者，那些拥有餐厅的人，我希望我的钱在这里。我想确保我在系统中占有一席之地。

Anyone else? Did you come up with any others? We were generous. I don't know if that's.

别人？你有没有想出其他的？我们很慷慨。我不知道是不是这样。

It could be. So you talk about the cleaning staff. OK. So let's we call them just housekeeping maybe.

它可能是。所以你说的是清洁人员。还行。因此，让我们称它们为家政服务。

Maybe OK, Have we covered everybody's?

也许没关系，我们覆盖了每个人的吗？

Handles the payments.

处理付款。

Finance.

金融。

Finance people.

财务人员。

They're all part of what's going on in the restaurant right now. We have a list of 24681012 stakeholders, so can we take the people on this side? Actually don't remember to split these in two.

它们都是现在餐厅里正在发生的事情的一部分。我们有一个 24681012 利益相关者的名单，那么我们能把人带到这边吗？实际上不记得将它们一分为二。

So the people on this side of the room.

所以房间这边的人。

You take the bottom half right, so the bottom group on the left hand side, the last three on the left hand side. You take the top three on the left hand side. You take the bottom 3 on the right hand side. You take the top three on the right hand side and come up with. So one second. You have to come up with five requirements for each. OK, five requirements for each.

你取右下半部分，所以左手边的底部组，左手边的最后三个组。你拿左手边的前三名。你拿右手边的底部 3 个。你把右手边的前三名拿出来。

所以一秒钟。你必须为每个提出五个要求。好的，每个都有五个要求。

So 5 requirements for each.

所以每个都有 5 个要求。

Doesn't really matter. I just punish your eyes.

没关系。我只是惩罚你的眼睛。

Master.

主人。

Didn't I the first afternoon to take the bottom of the right hand side?

我不是第一天下午就拿了右手边的底部吗？

Yeah, it's just working on different things.

是的，它只是在做不同的事情。

OK. Wait on housekeeping, housekeeping.

好的，等一下家政，家政。

Skipping know how to be the housekeeping.

跳过知道如何成为家政服务。

Another.

另一个。

Hurry, you got 5.

快点，你有 5 个。

You for the one yellow Trenton.

你为一个黄色的特伦顿。

Investor.

投资者。

'S.

'S。

Yo.

唷。

Investor High Short.

投资者高空头。

Come on, this is a such a dishonesty.

拜托，这真是不诚实。

Wish him a hockey, but I don't want to lose.

祝他打曲棍球，但我不想输。

Chance. So they're quiet.

机会。所以他们很安静。

Skiping.

跳。

Move to the second.

转到第二个。

Which should be a tuition union.

这应该是一个学费联盟。

OK, Good question.

好的，问得好。

Good question. Ask questions at the class. So I was wondering what this operator specifically does like the one of me was maybe like a cashier, but then we also discussed that could be booking like alright, so we're wondering what the software is, right?

问得好。在课堂上提问。所以我想知道这个操作员具体做什么，就像我中的那个可能像收银员一样，但后来我们也讨论了可以预订，所以我们想知道软件是什么，对吧？

The only thing we know about the software at this minute is they want the software system in the restaurant so you can have anything in it. OK, now what that brings is an interesting point about something called scope.

目前，我们对该软件的唯一了解是，他们希望餐厅中的软件系统，以便您可以在其中拥有任何东西。好了，现在这带来了一个有趣的观点，叫做范围。

OK, scope. So some people have obviously heard the word before, and scope basically means we need to define what we're putting into this. So it could be exactly as your first name is, Steven is saying.

好的，范围。所以有些人显然以前听说过这个词，范围基本上意味着我们需要定义我们要投入的东西。所以它可能和你的名字一模一样，史蒂文说。

That the scope is cashier and the touch screen, Right. But the scope could be for everything. We have everyone weave in here. OK, so the scope is going to be important, but we're not. For the purposes of this, we're not really worried about scope. OK, but if you're doing it when you're doing your project, you'll have to think about the scope. OK, another important word. So two important words today stakeholders Scope. OK, 2 words.

示波器是收银台和触摸屏，对。但范围可以是一切。我们让每个人都在这里编织。好的，所以范围很重要，但我们不是。为此，我们并不真正担心范围。好的，但是如果你在做项目的时候就这样做了，你就必须考虑范围。好的，另一个重要的词。所以今天两个重要的词：利益相关者：范围。好的，两个字。

All you have to do.

你所要做的就是。

OK, so work at least the second one if not the third at this stage.

好的，所以在这个阶段至少要做第二个，如果不是第三个的话。

Mr.

先生。

So.

所以。

Bank Centre is in attention towards here again. OK so nice bit of talking. I'm sure you have almost developed the requirements for the system at this stage. So anyone look at the requirements for the waiting staff.

银行中心再次受到关注。好了，聊得好。我相信您在这个阶段几乎已经制定了系统的要求。因此，任何人都可以查看对服务员的要求。

Clear and concise orders. Concise orders, OK.

简明扼要的订单。简洁的订单，OK。

Any other one?

还有其他的吗？

The reservations are done more conveniently and available to all the staff, so there's no confusion.

预订更方便，所有员工都可以使用，因此不会造成混淆。

Available to all they would give. Allow me a few spelling mistakes, don't you? OK, there we are right? Manager of the restaurant, other groups. Now who else come up with a manager of the restaurant?

他们愿意给的所有人都可以使用。请允许我犯一些拼写错误，不是吗？好的，我们说对吗？餐厅经理，其他团体。现在还有谁想出餐厅的经理呢？

OK, same groups. Who else come up with. You come up with anything for the manager so that the manager has all the information throughout the day. OK, you want to see everything, so updated information.

好的，同样的组。还有谁想出。你为经理想出任何东西，以便经理全天掌握所有信息。好的，你想看到一切，所以更新的信息。

Everything that's going on.

正在发生的一切。

OK, the restaurant software manager.

好的，餐厅软件管理器。

Different people were supposed to be working on these. No one came

up with self adventure. That's OK, right? Online customer.

不同的人应该从事这些工作。没有人想出自我冒险。没关系，对吧？在线客户。

One here, sorry, yes.

一个在这里，对不起，是的。

Delivery information OK for the online customer and the information for orders.

在线客户的交货信息正常，订单信息正常。

OK. Anyone else for the online customer and feedback from the customer, Feedback from the customers. You did a lot, didn't you? Good for you and the menu checking.

好的，其他任何人为在线客户和客户的反馈，来自客户的反馈。你做了很多，不是吗？对你和菜单检查都有好处。

You must use online system.

您必须使用在线系统。

OK, the marketing staff. Who did? The marketing staff?

好的，营销人员。谁干的？营销人员？

But every group, there must be somebody else who did the marketing staff.

但每个团队，都必须有其他人做营销人员。

No, OK, marketing staff. One for the marketing staff.

不，好的，营销人员。一个用于营销人员。

Preference of customers, OK. So that gets back to the data that you were talking about that we can find customer preferences, OK.

客户的偏好，OK。所以这又回到了你所说的数据，我们可以找到客户的偏好，好的。

Stock manager.

股票经理。

Who did? Well, I hope they'll decide the room now. Did the other ones? Can I get them? Stock manager? Nobody. OK, right. The investors.

谁干的？好吧，我希望他们现在能决定房间。其他的呢？我能得到它们吗？股票经理？没有人。好的，对。投资者。

Who's looking at the investors?

谁在关注投资者？

Management. Sorry, Race management. Waste management, OK.

管理。对不起，比赛管理。**管理，好的。

Sorry, risk risk man, Sorry. We could do waste management on the customers for housekeeping, couldn't we?

对不起，风险人，对不起。我们可以对客户进行**管理以进行家政服务，不是吗？

Risk management.

风险管理。

Performance indications for the investors.

投资者的业绩指标。

Thanks for keeping Waste Management. We'll put that in.

感谢您保持**管理。我们会把它放进去。

Well, that's they want to know anyone else to housekeeping.

嗯，那是他们想知道其他人做家政。

Is it used? Sorry? Is it to use? Easy to use? What is it easy to use?

是否使用？不好意思？是要用吗？好用吗？什么是好用的？

You want that probably in lots of them. Well, that's an OK one, Finance.

你可能希望在很多地方都这样。嗯，这没关系，财务。

And the revenue and the expenditure information may be weekly and monthly like budgets.

收入和支出信息可以像预算一样是每周和每月。

OK, next one, last one. Now there's lots of groups also done once and the last one saying that you didn't do for the others HR qualifications, HR the qualifications of the people, of the staff.

好的，下一个，最后一个。现在有很多小组也做过一次，最后一个小组说你没有为其他人做人力资源资格，人力资源人员和员工的资格。

OK. And also with the salaries maybe. OK.

还行。也许还有薪水。还行。

OK. Have you worked from a town hall season? Sorry.

还行。你有没有在市政厅工作过？不好意思。

OK. All right. So that policy?

好的，好的。那么这个政策呢？

Safety measures like the manual handlings.

安全措施，如手动处理。

OK. The customer, the plain old ordinary Mead that's coming out for my dinner table booking, OK, we're going to go somewhere different customer.

还行。顾客，普通的普通蜂蜜酒，出来预订我的餐桌，好吧，我们要去另一个客户的地方。

The middle group here in the back. The two V Hajisa, Maria work in one group.

中间组在后面。两个 V Hajisa, Maria 在一个小组中工作。

All work in one group. So who hasn't given me an answer? Ye haven't. At the back to my restaurant customer.

所有工作都在一个小组中。那么谁没有给我答案呢？你们没有。在后面给我的餐厅顾客。

No. OK. No one did. The restaurant customer, the plain old ordinary, used it. OK, My God. One today menu for today.

不。好吧，没有人这样做。餐厅的顾客，普通的老普通人，用了它。好吧，我的上帝。今天有一个今天的菜单。

Any coupons and offers?

有优惠券和优惠吗？

And price for the prices, OK that's like they, I mean did anyone get the case ring staff?

还有价格的价格，好吧，就像他们一样，我的意思是有人得到案件戒指工作人员吗？

You did? Who's that down here? Yes.

你做到了吗？下面是谁？是的。

And also they should because they're cooking and they need to do all like many jobs, so they won't be able to use that. It should be easy for them to see like what's the requirement, the kitchen equipment, OK.

而且他们应该这样做，因为他们正在做饭，他们需要像许多工作一样做所有的事情，所以他们将无法使用它。他们应该很容易看到要求是什么，厨房设备，OK。

So you see what we've done there.

所以你看我们在那里做了什么。

Very quick exercise in the class.

在课堂上练习得非常快。

You have developed a performance for a restaurant system. OK, it's not that simple because we started digging into things. So like the first question was the scope. So we haven't decided on our scope, OK?

您已经为餐厅系统开发了性能。好吧，没那么简单，因为我们开始深入研究。所以第一个问题是范围。所以我们还没有决定我们的范围，好吗？

We've also say there was Stephen was describing it, we're thinking about a touch screen. We haven't even thought about any of that. You know is there have there to be specific things that one of the things I would say about writing requirements is.

我们也说过斯蒂芬在描述它，我们正在考虑触摸屏。我们甚至没有考虑过这些。你知道，关于写作需求，我想说的一件事是具体的事情。

That you need to be very careful that you are not giving solutions.

你需要非常小心，不要给出解决方案。

OK so the touch screen is an example of that. So if you come to me and say I want to touch screen.

好的，触摸屏就是一个例子。所以如果你来找我，我说我想触摸屏。

I might actually know that using barcoding is far, or that there's a new device out who can scan the customer's face and know exactly what they want. OK, so just be a little bit careful about putting in solutions. And if you are putting in solutions, I'll be pulling you back from them. It's about the requirement. What do I need to do? I need to be able to take cash.

我可能真的知道使用条形码还很遥远，或者有一种新设备可以扫描客户的脸部并确切地知道他们想要什么。好的，所以在提出解决方案时要小心一点。如果你提出解决方案，我会把你从他们那里拉回来。这是关于要求的。我需要做什么？我需要能够拿现金。

I need to be able to see the orders. I need to be able to understand what kitchen equipment has to be used. OK. So it's about what does the stakeholder need. But you see what we did there quite quickly was we got together. The danger in doing something like that is that you can miss out on an awful lot. There's lots of things that we didn't think about. We didn't think about private. We wanted to keep the customers data. We didn't think about the security, you know, of customer data, for example. They're just other examples.

我需要能够看到订单。我需要能够了解必须使用哪些厨房设备。还行。所以这是关于利益相关者需要什么。但是你看，我们很快就聚在一起

了。做这样事情的危险在于，你可能会错过很多东西。有很多事情我们没有想到。我们没有考虑私人。我们希望保留客户数据。例如，我们没有考虑客户数据的安全性。它们只是其他例子。

We mentioned easy to use under one category. Probably should be somewhat easier to use, but what does that mean?

我们在一个类别下提到了易于使用。可能应该更容易使用，但这意味着什么？

My audience is older people. Easy to use is quite different than my audience being younger people. So we've got to think about lots of things, but we've done a quick requirements exercise.

我的听众是老年人。易于使用与我的受众是年轻人完全不同。因此，我们必须考虑很多事情，但我们已经做了一个快速的需求练习。

Please, let's all confuse with the requirements. Is it the responsibility of the stakeholder or what?

拜托，让我们都与要求混淆。是利益相关者的责任还是什么？

What the software does for a stakeholder.

软件为利益相关者做了什么。

So far the requirements.

到目前为止的要求。

The responsibility is if I'm asked to develop a system that I need to extract those requirements from the stakeholder.

责任是，如果我被要求开发一个系统，我需要从利益相关者那里提取这些需求。

OK, so if I say to you, will you develop me a timetabling system?

好吧，如果我对你说，你能为我开发一个时间表系统吗？

OK, you can't go away and develop a time timing system.

好吧，你不能离开并开发一个时间计时系统。

Because you only know something, but you don't know at all. So you need to be coming back to me as the stakeholder and saying who are my stakeholders?

因为你只知道一些东西，但你根本不知道。因此，您需要回到我作为利益相关者身边，并说谁是我的利益相关者？

Who would I talk to? You need to be figuring out who they are, but know that's part of that. So you need to be figuring out who are the stakeholders. But you can figure out who the stakeholders by having a discussion with me and maybe about looking at other timetable systems that were developed. So you don't know whether I want a timetabling system for my life saving club or whether I want it for the university or whether I want it for my child's school. So even at that very basic level, so your responsibility.

我会和谁交谈？你需要弄清楚他们是谁，但要知道这是其中的一部分。因此，您需要弄清楚谁是利益相关者。但是您可以通过与我讨论来弄清楚谁是利益相关者，也许还可以看看其他开发的时间表系统。所以你不知道我是否想要一个时间表系统来拯救我的救生俱乐部，或者我是否想要它用于大学，或者我是否想要它用于我孩子的学校。所以即使在最基本的层面上，你的责任也是如此。

Is you're going to design the system, so you've got to figure out the requirements for the system, but you've got to use me as the stakeholder.

你要设计这个系统，所以你必须弄清楚系统的要求，但你必须把我当作

利益相关者。

To figure out what those requirements are.

弄清楚这些要求是什么。

Does that make sense? Yeah. OK, Good question. Anyone else? OK, Yeah.

这有意义吗？是的。好的，问得好。别人？好的，是的。

Because I think you're right. Like I thought it wrong. But no, you didn't get it wrong. I know, but.

因为我认为你是对的。就像我想错了一样。但是不，你没有弄错。我知道，但是。

Thinking I was thinking about, I think it was last night. I think we're all in class with my kitchen and talking about functional things and I found it difficult because it's like you're new like me you. I think we all start with object oriented programming and it was kinda like you like the design, functional requirements, it's very like.

我以为我在想，我想是昨晚。我想我们都在我的厨房里上课，谈论功能性的东西，我发现这很困难，因为这就像你是新来的，就像我一样。我认为我们都是从面向对象编程开始的，这有点像你喜欢的设计，功能需求，它非常像。

Broad scope and you have to think at a high level about and abstraction and temptation is to go really granular really soon and then be like almost already the code exactly.

范围很广，你必须在高层次上思考，抽象和诱惑是要非常细化，很快，然后几乎已经完全是代码了。

Did that. And that's is the temptation is to literally go straight for the

solution. Now interestingly when you see the assessment OK, because that is to try and pull you away from that. OK, so but you're right. And the natural inclination for technical people is to immediately talk about the solution. But you can't talk about the solution if you don't understand the problem, OK.

做到了。这就是诱惑，就是直接去寻找解决方案。有趣的是，当你看到评估正常时，因为那是试图把你从评估中拉出来。好吧，但你是对的。技术人员的自然倾向是立即谈论解决方案。但是，如果您不了解问题，就不能谈论解决方案，好吧。

So, and again with the class I had earlier today, you will find my way of talking and operating is that high level for software quality stuff and again for the requirements being able to pull yourself away from being techies a little bit. So it's an interesting fun semester. Honestly it'll be a fun semester, but good questions.

所以，在我今天早些时候的课程中，你会发现我的谈话和操作方式是软件质量的高水平，以及能够让自己远离技术人员的要求。所以这是一个有趣有趣的学期。老实说，这将是一个有趣的学期，但问题很好。

So this is Fred Brooks. So my friend Nora, who was the personal requirements here for years before she retired.

这是弗雷德·布鲁克斯。所以我的朋友诺拉，在她退休之前，她多年来一直是这里的个人要求。

Like this book sat on her shelf, on her filing cabinet. We all looked at Fred Brooks. So the hardest single part of building a software system is deciding precisely what to build.

就像这本书放在她的书架上，放在她的文件柜上。我们都看着弗雷德·布鲁克斯。因此，构建软件系统最困难的部分是准确决定要构建什么。

You're all technically competent.

你们在技术上都很称职。

You can build anything I ask you to build, but you've got to figure out what am I supposed to be building. OK, So you have to be very aware of that when you're in requirement, when you're in software development. So that's why I love getting these classes because I think it's really good to talk about these things. So this is.

你可以建造我要求你建造的任何东西，但你必须弄清楚我应该建造什么。好的，所以当你有需求时，当你在软件开发中时，你必须非常清楚这一点。所以这就是为什么我喜欢上这些课，因为我认为谈论这些事情真的很好。所以这是。

What you're Yeah, this is John's 2009. OK, so like, it's 40 years old, so it's kind of bold or watch this initial requirements are seldom more than 50% complete. So when someone starts doing a system, sell to more than 50% complete.

你是什么，是的，这是约翰的 2009 年。好吧，就像，它已经有 40 年的历史了，所以它有点大胆，或者看这个初始要求很少超过 50% 完成。因此，当有人开始做一个系统时，销售到完成度的 50% 以上。

Requirements rose about 2% per month during development. Do you know how much that costs to keep adding 2% change onto something? It's horrific. About 20% of the initial requirements were to come up with our list there, and when you developed system, 20% of those will not be in the first release. There's more defects in requirements and design than there are in source code.

在开发过程中，需求每月增长约 2%。你知道在某样东西上继续增加 2% 的零钱需要多少钱吗？太可怕了。大约 20% 的初始需求是在那里提出我们的列表，而当您开发系统时，其中 20% 将不会出现在第一个版本中。需求和设计中的缺陷比源代码中的缺陷多。

That's what I'm saying. You're all great programmers, you write perfect

programs, but the requirements and design would be the ones that will go wrong. About 35% of projects 10,000 function points are quite large projects. About 30% of them will be cancelled, they start and they're cancelled. And about 50% of projects greater than 10,000 function points will be one year late. OK, 2009, have a look at 2017, the most recent one I can find.

这就是我要说的。你们都是伟大的程序员，你们编写了完美的程序，但需求和设计会出错。大约 35% 的项目 10,000 个功能点是相当大的项目。其中大约 30% 将被取消，他们开始并被取消。大约 50% 超过 10,000 个功能点的项目将延迟一年。好吧，2009 年，看看 2017 年，这是我能找到的最近的一个。

So overall, frequency is great. The black ones are the cause for the project to fail, and you can see they're reflecting practically the same things. OK, so halfway down communication flaws within the project team. Out of 228 respondents, 62 projects.

所以总的来说，频率是很好的。黑色是项目失败的原因，你可以看到它们反映了几乎相同的东西。好的，项目团队内部的沟通缺陷已经过半了。在 228 名受访者中，有 62 个项目。

Were overall frequency. There were problems, 25 of them failed because of communication issues.

是总体频率。存在问题，其中 25 个因沟通问题而失败。

Moving targets, changing goals, process and requirements, plus about 39. It's just not great. Print 39 of the projects that were started to affect so you can see there it's about probably in the region of 2526%.

移动目标、不断变化的目标、流程和要求，加上大约 39 个。只是不是很好。打印 39 个开始受影响的项目，所以你可以看到它可能在 2526% 左右。

Of those that were talked about. So you can see the same problems are appearing 12 years later.

在那些被谈论的人中。所以你可以看到同样的问题在12年后出现。

OK. And as I say, that's the most recent one I could find by the studies were done and the bottom 1 incomplete and are hidden requirements, 48 projects cancelled because of incomplete requirements and that's pretty shocking when you think about the software process improvement that I was talking about there, that we in software are as bad as that. OK. One of the things that kind of bothers me about the world society in general, like we are very privileged, we're in that.

还行。正如我所说，这是我通过研究找到的最新一个，底部1个不完整，是隐藏的需求，48个项目因为不完整的需求而被取消，当你想到我在那里谈论的软件过程改进时，这非常令人震惊，我们在软件领域也是如此糟糕。还行。关于整个世界社会，有一件事让我感到困扰，就像我们非常有特权一样，我们身处其中。

5% of people that no one understand computer around the world.

全世界有5%的人不懂电脑。

A lot of the world thinks software works.

世界上很多人都认为软件是有效的。

I constantly say software doesn't like it.

我经常说软件不喜欢它。

It might work for one person, but it doesn't work for everybody and it causes problems and there's lots of things and we see lots of that as we go through, so now we get to the assessment.

它可能对一个人有用，但它并不适合所有人，它会导致问题，有很多事

情，我们在经历的过程中看到了很多，所以现在 we 开始评估。

So as I said, he projects in the assessments, we sorted out groups and this lady whose name is Ming Ming is going to join. OK, Akash and his two team members. So here. And Stephen. OK, your name is Roland. Oh, Roland, you told me already. OK, I tried to get names everywhere. OK, so 10% starting today, 5% commencing week 3 and 35% in week 5.

所以正如我所说，他在评估中进行了项目，我们整理了小组，这位名叫明明的女士将加入。好的，阿卡什和他的两个团队成员。所以在这里。还有斯蒂芬。好的，你叫罗兰。哦，罗兰，你已经告诉我了。好吧，我试着到处找名字。好的，所以从今天开始 10%，第 3 周开始 5%，第 5 周 35%。

So you're working in groups, so you're employing a contractor to test, develop and implement a system for you.

所以你是小组工作，所以你雇佣了一个承包商来为你测试、开发和实施一个系统。

Any system of your choice.

您选择的任何系统。

So in your group decide we are going to build. We want a system to be built.

因此，在您的小组中决定我们要建造。我们想要建立一个系统。

OK, wait a minute, because I have it all in a second. OK. So it can be an information system or a nap and the system will solve an existing problem for you. So it might be that example we have there where I said a time, you know, a time, I want a timetabling system, we decide that's what we're doing. Doesn't matter. You pick the system, OK? From the

customer perspective, this is your assignment.

好吧，等一下，因为我一秒钟就搞定了。还行。因此，它可以是一个信息系统或小睡，系统将为您解决现有问题。所以这可能是我们在那里的例子，我说一个时间，你知道，一个时间，我想要一个时间表系统，我们决定这就是我们正在做的事情。无所谓。你选择系统，好吗？从客户的角度来看，这是您的任务。

You have to write a summary in 12 to 1500 words. That's about two to three pages describing what currently happens, what are the current problems, and why you believe that developing a software system will solve the problem. OK, so in your groups.

你必须用 12 到 1500 字写一个摘要。这大约是两到三页，描述了当前发生的事情，当前的问题是什么，以及为什么你认为开发一个软件系统可以解决问题。好的，所以在你的小组中。

Any system you want and you have to be able to say this is what happens, this is what the problems are and This is why you believe that developing a software system to solve this problem, OK.

你想要的任何系统，你必须能够说这就是发生的事情，这就是问题所在，这就是为什么你相信开发一个软件系统来解决这个问题，好吧。

Why I said to Steven a minute ago, this is interesting, Is that 3 diagrams? Of course yes, and it's up to bright sprays. The summary will be given to another group for the second part of the project.

为什么我一分钟前对史蒂文说，这很有趣，那是 3 张图吗？当然可以，这取决于明亮的喷雾。摘要将提供给项目第二部分的另一个小组。

So you're going to see someone else's user, and you're going to be doing the requirements for someone else's specification for someone else's project. OK, so don't be sitting there designing. Say I'm going to do this system. I want to design this system and think it'd be great

because you won't be doing it anyway. Someone else would be doing it for you.

因此，你会看到别人的用户，你要为别人的项目做别人规范的要求。好吧，所以不要坐在那里设计。假设我要做这个系统。我想设计这个系统，并认为它会很棒，因为你无论如何都不会这样做。别人会为你做这件事。

OK.

还行。

So when you're writing yourself, you have to be a little bit careful because your teammates have to take it. But you will also be doing interviews with your teammates. You'll have access to them as users and stakeholders.

所以当你自己写的时候，你必须小心一点，因为你的队友必须接受它。但你也会和你的队友一起面试。你将有权以用户和利益干系人的身份访问他们。

OK.

还行。

Trust me, so initially that's the first half of the exercise. So what I would say is between now and next Thursday.

相信我，所以最初这是练习的前半部分。所以我想说的是从现在到下周四。

That you get together as a team, that you start making decisions on what your system should be. When we're at class next Thursday, we'll go round, I'll go round the class and just make sure that you know you've got to write it like we don't want. I don't want someone, you know, wanting to design a system for a rocket. You know you don't

make it. Make it reasonable for a group of three people to work on over the semester.

你们作为一个团队聚在一起，你们开始决定你的系统应该是什么。下周四上课时，我们会绕着教室转一圈，我会绕着教室转一圈，确保你知道你必须写得像我们不想写的那样。我不想要有人，你知道，想要为火箭设计一个系统。你知道你做不到。让一个三人小组在学期内工作是合理的。

But if it's not hard enough, I'll probably push it. If it's far too hard and I've seen people come up with really hard ones, we'll pull it back a little bit. OK. So I would say in the first week, it's really about meeting to have some ideas or even emailing each other to have some ideas about what your system might be. OK yeah. So that's your 10% exercise that's due week 3 and upload a bunch of bright space by 5:00 PM Friday, week 3, so I can roll this information on strike space that you can opposition. OK.

但如果还不够难，我可能会推动它。如果它太难了，而且我看到人们想出了非常困难的方法，我们会把它拉回来一点。还行。所以我想说的是，在第一周，这实际上是关于开会以产生一些想法，甚至通过电子邮件相互交流，以了解您的系统可能是什么。好的，是的。所以这是你在第3周到期的10%练习，并在第3周星期五下午5:00之前上传一堆明亮的空间，这样我就可以在你可以反对的罢工空间上滚动这些信息。还行。

So the wrap up then, just to wrap up, OK, so there's a book. This book is Requirements Engineering for Software Assistance by the Plant and Casablanca. Again, I'll have this on the website so you don't need to worry about it. It's available online.

所以总结一下，只是为了结束，好吧，所以有一本书。本书是 Plant 和 Casablanca 的 Requirements Engineering for Software Assistance。同样，我会在网站上提供这个，所以你不需要担心。它可以在线获得。

So you don't have to buy a book, OK. The issue is I think it they only allowed four people or something to look at the same time. So if everybody was in at the same time, you won't be able to. If you hang on half an hour, you'll get to it works fine, it's grand, saves you buying a book, it's totally available in the library. So as I say, it's part of what your fees pay for, OK?

所以你不必买书，好吧。问题是我认为他们只允许四个人或其他人同时看。因此，如果每个人都在同一时间加入，您将无法做到。如果你坚持半个小时，你就会发现它很好用，它很宏伟，省去了你买一本书的时间，它完全可以在图书馆找到。所以正如我所说，这是你的费用支付的一部分，好吗？

Yeah, read online. So I'll identify chapters and sections and I'll give you some papers. As I said, meet outside the class. And if you're. Oh yeah, if you're not on the UN network. So if you're coming in from outside, have you come across 40 clients? No.

是的，在线阅读。所以我会确定章节和部分，我会给你一些论文。正如我所说，在课外见面。如果你是。哦，是的，如果你不在联合国网络上。所以，如果你是从外面进来的，你有没有遇到过40个客户？不。

OK, so there's this app called 40 Client that you download onto your laptop. You need to go to the information desk in the library. Now if you always use your laptops or PCs connected to the UN network, you don't need to worry about it. But to get access from home, you do into the library. So you know, make it your business to call to the library in the next week and get forced, right? And then you just run it and then it works. Believe it or not, yes, and for as we move on.

好的，有一个名为 40 Client 的应用程序，您可以将其下载到笔记本电脑上。您需要前往图书馆的咨询台。现在，如果您始终使用连接到联合国网络的笔记本电脑或个人电脑，则无需担心。但是要从家里访问，您需要进入图书馆。所以你知道，下周打电话给图书馆并被迫成为你的事，对吧？然后你只需运行它，然后它就可以工作了。信不信由你，是

的，随着我们继续前进。

Where you're doing diagrams and things, you can use any diagram or modeling software. I'm not worried about what you might choose.

在你做图表和东西的地方，你可以使用任何图表或建模软件。我不担心你会选择什么。

And so this week, just chapter one reads the top potato form. That's three pages of reading. I've also recommended some articles. So again, the last one here is a special issue on requirements engineering. So that means they produced a journal that has four or five papers, all about requirements engineering. So you can read the introduction out there. But any other papers in it you know. So pick what I want you to do each week really is try and read one paper.

所以本周，只有第一章来阅读顶级马铃薯形式。这是三页的阅读。我还推荐了一些文章。再说一遍，这里的最后一个是关于需求工程的特刊。这意味着他们制作了一本期刊，里面有四五篇论文，都是关于需求工程的。因此，您可以阅读那里的介绍。但是你知道其中的任何其他论文。所以选择我希望你每周真正做的事情是尝试阅读一篇论文。

And that should help, yes, lab in what you're doing.

是的，这应该有助于你正在做的事情。

And a couple of references that I put in and that's it. OK. Any other questions, are you happy? Yes. Question here. Sorry everyone. Yeah, just one question. So what So we are so people can turn out for this class have already got a group or what about those people using their class but then we sort them out from the come back next week. OK.

我输入了一些参考资料，仅此而已。还行。还有其他问题，你开心吗？是的。问题在这里。对不起大家。是的，只有一个问题。所以我们是这样的，所以人们可以参加这个班级，已经有一个小组，或者那些使用他

们班级的人呢，然后我们从下周回来的时候把他们整理出来。还行。

You're obviously watching out for friends.

你显然在提防朋友。

Done. No. Well done. But I kind of feel people do need to be turning up because it is important in this class. It really is important to turn up so we work out with someone else. I wanted to ask you, what do you actually mean by diagrams? Like you said, we're allowed to have it. We work that out as we go.

做。不。干的好。但我有点觉得人们确实需要出现，因为这在课堂上很重要。出现真的很重要，所以我们和其他人一起锻炼。我想问你，你说的图表到底是什么意思？就像你说的，我们被允许拥有它。我们边走边解决。

Work it out as you go, OK? Yeah.

边走边做，好吗？是的。

Anything else?

别的东西？

One summary issue, yes. Yeah, one summary. So one person can submit. Actually, that's the other thing when you make sure that you put all the names on the summary. Sometimes I get something from Ethan Richardson and then it's I don't know who really is in the group or something, but I have the list on next week and I hope groups. I sort all that out that admin site.

一个摘要问题，是的。是的，一个总结。所以一个人可以提交。实际上，当您确保将所有名称放在摘要上时，这是另一回事。有时我从伊桑·理查森那里得到一些东西，然后我不知道谁真正在小组中或其他什么，但我下周有名单，我希望小组。我把所有这些整理出来，那个管理

网站。

OK. Raise. Thank you for your attention. That was really. I enjoyed it too. I'll see you next time

好的，提高。感谢您的关注。确实如此。我也喜欢它。下次再见