

I got lost.

我迷路了。

Close the door, please. Sorry.

请把门关上。不好意思。

Just give me a second.

给我一秒钟。

OK, I can give you 2 very good examples.

好的，我可以给你两个很好的例子。

And technology wasn't here. I would walk into my class at 10:00. I would turn on the projector and your task starts with one second past 10. Now I have to be in the room 10 minutes beforehand to set up everything so that when we walk in at 10:00. So that's 10 minutes of my time for every lecture. Every year, 10 minutes. So there's an example. The other one is we have a car which has CS 5703.

技术不在这里。我会在 10:00 走进我的班级。我会打开投影仪，你的任务从 10 点过 1 秒开始。现在我必须提前 10 分钟在房间里设置好一切，以便我们在 10:00 走进来。所以这是我每次讲座的 10 分钟时间。每年，10 分钟。所以有一个例子。另一个是我们有一辆装有 CS 5703 的汽车。

Close the door, please.

请把门关上。

Close the door. Thank you.

关门。谢谢。

Anyway, the other one is we have a car that has made an assist and you're driving off the line that pushes you back and you're exhausted. So we developed the contract and I don't have any of you have driven out of the country in Ireland, but it's lots of cages and lots of potholes. So in the norm driving we don't drive know inside the white line you can keep hours to let them get to protect your car. You obviously have to because they're coming. Every time we get into the car we have to go through 5 menus.

不管怎么说，另一个是我们有一辆车，它做了一个助攻，你开出了把你推回去的线，你已经筋疲力尽了。所以我们制定了合同，我没有你们中的任何一个人被赶出爱尔兰，但那里有很多笼子和坑洼。因此，在正常驾驶中，我们不知道在白线内，您可以保持数小时，让他们保护您的汽车。你显然必须这样做，因为他们要来了。每次我们上车时，我们都必须浏览 5 个菜单。

To turn off lane assist every time. That's a waste of my time. So we've got 2 examples this is.

每次都关闭车道辅助。那是在浪费我的时间。所以我们有 2 个例子。

Anyway, let's keep going here to see if I can get it recorded.

无论如何，让我们继续去这里，看看我能不能把它记录下来。

Please.

请。

So what was my resolution for this year this semester? Was it not to be starting class at 10:10?

那么，我今年这个学期的决心是什么？不是 10:10 开始上课吗？

I just failed. Just failed. OK, so we'll do a look for this and then.

我只是失败了。只是失败了。好的，所以我们先看看这个，然后。

OK, I'm now going to start recording, so just be aware I haven't talked about it in a minute.

好的，我现在要开始录制了，所以请注意，我已经一分钟没有谈论它了。

OK, so software engineering quality CS 5703.

好的，软件工程质量 CS 5703。

So my name is Richardson. I will talk a little bit about myself. Always do so. First thing I want to say is you need to know that this lecture has been recorded for academic purposes as part of the module and will be made available on Bright Space. Any questions or comments you make during these sessions may be heard on the recording. Now one thing I would say is we'd be doing lots of group work, so if someone can remind me to stop recording because you just end up listening to it, you know, with half an hour blank.

我叫理查森。我会谈谈我自己。始终这样做。我想说的第一件事是，你需要知道，这个讲座是出于学术目的而录制的，作为模块的一部分，并将在 Bright Space 上提供。您在这些会议期间提出的任何问题或意见都可能在录音中听到。现在我想说的一件事是，我们会做很多小组工作，所以如果有人能提醒我停止录音，因为你最终听完了，你知道，半个小时是空白的。

So someone just says if you never, that's OK. I don't mind being asked what to do. Honestly, I want you to be discussing with me and chat about things. So that's one thing. Good morning. So the recordings will be retained on bright space that appears at 13 months. If you have any questions or concerns, talk to me, e-mail me or yeah, talk to me already. That's what you're doing. So you shouldn't copy modify a distributed recordings of electric story and education system to which

you have access.

所以有人只是说，如果你从来没有，那没关系。我不介意被问到该怎么做。老实说，我希望你和我讨论并聊聊事情。所以这是一回事。早上好。因此，录音将保留在 13 个月时出现的明亮空间中。如果您有任何问题或疑虑，请与我交谈，给我发电子邮件，或者是的，已经与我交谈。这就是你正在做的事情。因此，您不应该复制修改您有权访问的电子故事和教育系统的分布式录音。

Without first seeking permission to do so. OK, now that will be going up at the start of every single lecture. I'm not going to go through it with every single lecture, but please be aware of what? OK, so anything you say is going to be recorded.

没有事先征得许可。好了，现在每节课开始时都会上升。我不会在每节课上都经历它，但请注意什么？好的，所以你说的任何话都会被记录下来。

And you are not allowed distributor reporting. Okay. That's just. I want to impress that on you now and I won't have to do it, but we'll be at the start of every single lecture. So what am I going to do today? I'm going to introduce me. I always think it's important. I would love, I love to have a small class and I can actually find out everybody. But hopefully by the end of the semester I will have figured you out as your names or at least what you're working on. OK, stop a little bit about you.

而且您不被允许向分销商报告。好。仅此而已。我现在想给你们留下深刻的印象，我不必这样做，但我们将在每堂课的开始。那我今天要做什么呢？我要介绍一下我。我一直认为这很重要。我很想，我喜欢有一个小班，我实际上可以找到每个人。但希望在学期结束时，我能弄清楚你的名字，或者至少是你在做什么。好吧，停一下关于你的事。

I talk about the module and I want to talk about problem based learning.

我谈论这个模块，我想谈谈基于问题的学习。

Which is how we run this module. So as I said there are a few minutes ago is you will be doing lots of talking. Okay. I do not stand up and lecture for two hours, OK, Sigh for leave for you as well. You don't have to estimate for two hours. Software systems and quality. And then we do a rap, OK? At any time you are allowed pull up your hand and ask a question. OK, everybody, we have one of our other lectures always says that.

这就是我们运行这个模块的方式。所以正如我刚才所说，你会做很多谈话。好。我不会站起来讲两个小时，好吧，也为你请假。您不必估计两个小时。软件系统和质量。然后我们做一个说唱，好吗？在任何时候，你都可以举手问一个问题。好的，各位，我们还有另外一个讲座总是这么说的。

The only stupid question is the one that's not asked.

唯一愚蠢的问题是没有被问到的问题。

OK. And very often when a student asks a question, we can visibly see other students in the room like sitting up to listen because that's the question that was in their heads as well. OK. So it's really important that you ask questions. If you don't ask the question, I can't give you the answer. If you do ask the question and I don't want to give you the answer, which might be part of it as well, then I will let you know. I wouldn't say you shouldn't have asked that question, but we get a discussion going, OK. So just to be very aware, please talk.

还行。很多时候，当一个学生提出一个问题时，我们可以明显地看到房间里的其他学生喜欢坐起来听，因为这也是他们脑海中的问题。还行。因此，提出问题非常重要。如果你不问这个问题，我就不能给你答案。如果你确实问了这个问题，而我不想给你答案，这可能也是其中的一部分，那么我会让你知道。我不会说你不应该问这个问题，但我们开始讨论，好吧。所以只是为了非常清楚，请谈谈。

OK, the best way of learning is by having all types of interaction, not just listening. In actual fact, listening is the worst way of learning. Lots of evidence that children have to do other things apart from this. So who am I? So I'm a professor of software quality in the Department of Computer Science and Information Systems. So that's the department in which you're all doing your master's degree. OK? And I hope you're having a good time in Ireland and a good time in memory and that it's gone OK so far.

好的，最好的学习方式是进行各种类型的互动，而不仅仅是倾听。事实上，倾听是最糟糕的学习方式。大量证据表明，除此之外，孩子们还必须做其他事情。那么我是谁？我是计算机科学与信息系统系的软件质量教授。这就是你们都在攻读硕士学位的部门。还行？我希望你在爱尔兰度过了愉快的时光，在记忆中度过了一段美好的时光，到目前为止一切顺利。

My lecture to undergraduate and postgraduate classes. So I do undergraduates last semester. I have two post grad classes this semester. I'm deputy director and Co principal investigator in Leo. So the first question anyone heard of Leo off to now?

我为本科生和研究生班讲课。所以我上学期读本科生。我这学期有两门研究生班。我是Leo的副主任和联合首席研究员。所以，到现在为止，有人听说过狮子座的第一个问题？

Yes, OK, good. I'm glad we have because it's a big software research centre in Ireland. We have about 250 researchers across 12 institutions, 12 of the higher education institutions in Ireland.

是的，好的，很好。我很高兴我们有，因为它是爱尔兰的一个大型软件研究中心。我们在12个机构中拥有大约250名研究人员，其中12个是爱尔兰的高等教育机构。

On There's lots of really interesting work going on in here. So you've had Michael English. You've had Jim Buckley, Chris Exton, maybe Had

you Chris? Yeah. So we're all Euro members. OK, so I'm deputy director, and our director is a man called Leonel Briand, who is also a joint professor in Ottawa. So if anyone's into trustworthy software, have a look at the amount. And even if you're not, just have a look at his wife. This is quite amazing.

这里有很多非常有趣的工作。所以你有迈克尔·英格利斯。你有吉姆·巴克利，克里斯·埃克斯顿，也许你有克里斯吗？是的。所以我们都是欧元区成员国。好的，我是副主任，我们的主任是一个叫莱昂内尔·布莱恩德的人，他也是渥太华的联合教授。因此，如果有人喜欢值得信赖的软件，请查看数量。即使你不是，看看他的妻子就知道了。这真是太神奇了。

And I supervise P Oh, yes, sorry. You probably don't know what core principle investigation is. That means nothing. It basically means I lead research projects. So I have PhD students and I have post doctoral researchers, and I'm also on the management team of leaders. So I of heroes. I'm one of the. Well, I am.

我监督P哦，是的，对不起。你可能不知道什么是核心原理调查。这毫无意义。这基本上意味着我领导研究项目。所以我有博士生，我有博士后研究人员，我也是领导管理团队的一员。所以我是英雄。我就是其中之一。嗯，我是。

Supervised PhD students. Something I've done all my academic life and really, really love working with students.

指导博士生。我整个学术生涯都在做这件事，真的非常喜欢和学生一起工作。

Certainly one of the maybe the nicest feelings as an academic I will be honest, is sitting at graduation and watching people graduation, whether their undergraduates post graduates or PhD students or masters or PhD. It's just so lovely to see the students come up and get their transcripts for and get their apartments from the president. Really

nice. And I also have roles in equality, diversity and inclusion. So I'm very interested. I suppose it's calm because I've been very interested in gender and how we really lacking women in software engineering and I can honestly tell you.

当然，老实说，作为一名学者，也许最美好的感觉之一就是坐在毕业典礼上看着人们毕业，无论是他们的本科生、研究生、博士生、硕士生还是博士生。看到学生们上来拿到他们的成绩单，并从总统那里得到他们的公寓，真是太可爱了。真的很好。我也在平等、多样性和包容性方面发挥着作用。所以我很感兴趣。我想这很平静，因为我对性别非常感兴趣，以及我们在软件工程中如何真正缺乏女性，我可以诚实地告诉你。

This is the first time that I have seen so many women in software engineering class that I have taught in my whole degree. So well done. Yeah, and it's brilliant because like, I don't know, the men realize that if you have diversity, like everybody should realize this if we've got diversity. So diversity of gender is one thing, nationalities is another thing.

这是我第一次在软件工程课上看到这么多女性，我在整个学位课程中都教过。干得好。是的，这太棒了，因为我不知道，男人们意识到，如果你有多多样性，就像每个人都应该意识到这一点，如果我们有多多样性。因此，性别的多样性是一回事，国籍是另一回事。

Whether somebody has a disability or not, that can be a real insight into things. So we actually, and it's shown this in like Fortune 500 which are the top companies.

无论某人是否有残疾，这都可以是对事物的真正洞察。因此，我们实际上，在财富 500 强中，这些顶级公司都证明了这一点。

Sorry, could you close the door, please? Thank you. In Fortune 500, this is shown that where teams are diverse at the top that they actually perform much better than the companies where they aren't. So diversity is hugely important. So again to people who are here, so



women are mentioned the international, that's fantastic. It really has to up our brain power within the country as well, but really strong master students and that's why we have the permission to work afterwards as well, because we want.

对不起，你能把门关上吗？谢谢。在《财富》500强中，这表明，在高层团队多元化的情况下，他们实际上比没有多元化的公司表现得更好。因此，多样性非常重要。所以再次对在座的人，所以女性被提到国际，这太棒了。这确实必须提高我们在国内的脑力，但真正强大的硕士生，这就是为什么我们之后也被允许工作，因为我们想要。

To have really good people in Ireland.

在爱尔兰拥有真正优秀的人。

And so I suppose, as I say, my background very much in gender equality. But I believe in.

所以我想，正如我所说，我的背景非常注重性别平等。但我相信。

A rising tide not see a rising tide rises all boats. So if we do things that are good for women then that passes on to the other equality groupings that we have. So I really have a big interest and I can do a lot of work talking schools to girls.

涨潮不见涨潮涨船。因此，如果我们做对女性有益的事情，那么它就会传递给我们拥有的其他平等群体。所以我真的很感兴趣，我可以做很多工作，与女孩交谈学校。

Meeting mentoring to for womenary career researchers, researchers.

为女性职业研究人员、研究人员提供会议指导。

Going to national agencies and talking about, so this is something that I do and I'm proud that I do it. So that's me in a nutshell. So what are my research interests and you really see these coming across as we work

through the module. This module doesn't happen this afternoon.

去国家机构谈论，所以这是我做的事情，我为我这样做感到自豪。简而言之，这就是我。那么我的研究兴趣是什么，当我们学习这个模块时，你真的会看到这些。这个模块不会在今天下午发生。

By the way, those of you who happened this afternoon would be getting these first five or six slides again. That's OK too. So as I said, I'm with Leroy for my research.

顺便说一句，今天下午发生的人将再次获得前五六张幻灯片。那也没关系。所以正如我所说，我和 Leroy 一起进行研究。

I do software quality through health and medical software development. So if we're developing health systems, we have to think about how do we make these correct, save accurate, lots of things. And we were talking about as we go through the semester about software process improvement. So if you think about your software development process.

我通过健康和医疗软件开发来提高软件质量。因此，如果我们要发展卫生系统，我们必须考虑如何使这些东西正确、准确、准确。我们在整个学期中都在谈论软件流程改进。因此，如果您考虑一下您的软件开发过程。

OK.

还行。

We can make that process better.

我们可以使这个过程变得更好。

OK, so I will do a little experiment. I have this in my head about doing the experiment.

好的，所以我会做一个小实验。我脑子里有关于做这个实验的念头。

So we have this chair. OK, I manufactured your chairs. One in every 10 chairs that comes off the production line has no background.

所以我们有了这把椅子。好的，我制造了你的椅子。每10把从生产线上下来的椅子中，就有一把没有背景。

OK, what am I going to do?

好的，我该怎么办？

Sorry.

不好意思。

Yeah, go on, Who said?

是的，继续，谁说的？

Something I said. You need to be better. I need. OK, so how do I need to be better? That's the question. Improve the process. OK, tell me how popular.

我说的话。你需要变得更好。我需要。好的，那么我需要什么如何变得更好呢？这就是问题所在。改进流程。好的，告诉我有多受欢迎。

No, I don't mind you answering that. I just want to.

不，我不介意你回答这个问题。我只想。

Techniques.

技术。

OK, so use some machine monitoring. So I go back and I look at my machine machine and I say what's the machine doing wrong? OK,

that's one thing I could do. Anything else I could do, And thank you for your answer, but I'm going to push a little bit to the others. We need to have checks in place to ensure that all the plots OK, so we have some checks along the.

好的，所以使用一些机器监控。所以我回去看看我的机器，我说机器做错了什么？好吧，这是我能做的一件事。我还能做些什么，谢谢你的回答，但我要向其他人推一点。我们需要进行检查以确保所有地块都正常，因此我们进行了一些检查。

Fair. As part of the audit or the quality like the one, no, but where in the factory, in the manufacturing, in the manufacturing. So in the production line, I have some checks to say what's happening in the backs of the chairs, anything else. So that's you see what's interesting about that is that's after the event, OK. So you're saying find out about it earlier, that's really good. But I can do more fundamental things starting with better components, starting with better components.

公平。作为审核的一部分或质量，不，但在工厂，在制造中，在制造中。所以在生产线上，我有一些检查，看看椅背上发生了什么，其他任何事情。所以你看有趣的是，那是在活动之后，好吧。所以你说早点了解一下，这真的很好。但是我可以做更基本的事情，从更好的组件开始，从更好的组件开始。

Compton's or components. OK, so checking out. Is this breaking on the way or something? Starting with better components, We're back looking at the material. Anything else?

康普顿或组件。好的，所以退房。这是在路上坏了还是什么？从更好的组件开始，我们又开始研究材料。别的东西？

Testing of the component. OK, some testing again. Again, a little bit after the fact, but it's there and it exists, right? Anything else?

组件测试。好的，再做一些测试。再说一次，事后一点点，但它就在那

里，它存在，对吧？别的东西？

Anyone else who hasn't said anything? Monitoring of manufacturing.  
还有人什么都没说吗？监控制造。

Of the equipment of the machinery, OK, so keep looking at it to make sure it's OK. Anything else apart from the equipment?

在机器的设备中，OK，所以请继续观察它以确保它没问题。除了设备之外，还有其他什么吗？

OK. So have we good design, have we got with that it's slipping on that we're happy that this just doesn't fall off like that or something. So our design process, anything else?

还行。因此，我们有没有好的设计，我们有没有滑倒，我们很高兴它不会像那样掉下来。那么我们的设计过程，还有别的吗？

Think about your production line. What if you were to stand outside the factory and look in the door at a production line? What would you say?

想想你的生产线。如果你站在工厂外面，看着生产线的门口怎么办？你会怎么说？

Sorry.

不好意思。

You see machinery.

你看机器。

You see Product and components. What else to say?

您会看到产品和组件。还有什么要说的？

Manpower, people. OK, so maybe there's someone operating that machine that doesn't know that this is actually supposed to clip on. I mean, this is supposed to some people. OK, so we can take a simple chair and we can fix the problem. OK, now what happens when you write a program and it doesn't work?

人力，人。好吧，所以也许有人在操作那台机器时不知道这实际上是应该夹在上面的。我的意思是，这应该对某些人来说。好的，我们可以拿一把简单的椅子，我们可以解决问题。好了，现在当你编写一个程序而它不起作用时会发生什么？

What do people normally do?

人们通常做什么？

Sorry, we go to the code again and again. Like we go to the code for again and again and we said please do it, please do, please do. And we said, but who's the colder?

对不起，我们一次又一次地转到代码。就像我们一次又一次地去看代码，我们说请做，请做，请做。我们说，但谁更冷？

OK, Would you think it would be a little helpful if we actually said this coder doesn't understand?

好吧，如果我们真的说这个程序员不明白，你认为会有点帮助吗？

What they're doing, they don't understand what finance is, if they're developing a financial system, or they don't know how to program in C++ because they've learned all their programming in Java.

他们在做什么，他们不明白什么是金融，他们是否正在开发一个金融系统，或者他们不知道如何用 C++ 编程，因为他们已经学会了所有的 Java 编程。

So what might you do?

那么你会怎么做呢？

Change the culture. How's it going to change them? We're going to sack them.

改变文化。它将如何改变它们？我们要解雇他们。

Training the coder OK, so we do some training and we say, OK, this is what we employed you for. We've not put you into the financial systems. You knew nothing about that. We give you some training, OK. So that's how that's one way of improving the software process. And if I told you and I say this all the time and my colleagues all laughed at me, that my Nirvana is that we don't have to test.

培训编码员 好的，所以我们做了一些培训，我们说，好吧，这就是我们雇用你的目的。我们没有把你放进金融系统。你对此一无所知。我们给你一些培训，好吧。这就是改进软件流程的一种方式。如果我告诉你，我一直这么说，我的同事们都嘲笑我，我的涅槃就是我们不必测试。

Imagine if our process was so good that we don't have to test.

想象一下，如果我们的流程如此之好，以至于我们不必进行测试。

OK, that's all. Your job's gone.

好了，就这样。你的工作已经消失了。

But if they were so good and we could develop so well that we didn't have to test and we could trust our software, then we would have proper software process.

但是，如果它们如此出色，我们可以开发得如此之好，以至于我们不必进行测试，我们可以信任我们的软件，那么我们将拥有适当的软件流程。

And write down South, at one level we talk about things. Say when I'm talking about process, we would talk about recruitment policies. So let your recruiters know that you don't want anyone who programs in C++ and they don't know how to program a job because this is what we do. Or if they do, we're going to do training with them And how do we write a requirements document and how do we think about, you know put the design, what's the design process, How do we make sure that if somebody.

写下南方，在某种程度上我们谈论事情。比如说，当我谈论流程时，我们会谈论招聘政策。因此，让您的招聘人员知道，您不希望任何使用 C++ 编程的人，他们不知道如何编写工作，因为这就是我们所做的。或者，如果他们这样做了，我们将与他们一起进行培训，我们如何编写需求文档，我们如何考虑，你知道，设计，设计过程是什么，我们如何确保如果有人。

Has requirements that they're now designed properly into the software. 要求它们现在已正确设计到软件中。

OK, So what this module is going to try to do is not it doesn't end up saying don't do testing. OK, because testing is a reality in life, but it's going to get you to think about quality from the perspective of quality is not just testing.

好的，所以这个模块要尝试做的不是它最终不会说不要做测试。好吧，因为测试是生活中的现实，但它会让你从质量的角度来思考质量，而不仅仅是测试。

Quality is lots of other things.

质量还有很多其他的东西。

OK, so remember the chair that you remember all those. Anyway, that's what SPI is about. Global software development then is where we lots



of international companies have teams in lots of different countries.

好吧，所以记住你记得所有这些的椅子。无论如何，这就是 SPI 的意义所在。因此，全球软件开发是我们许多国际公司在许多不同国家/地区拥有团队的地方。

OK, and there's lots of you can't just have your team working in lots of different countries without implementing particular things around global software development.

好吧，有很多你不能让你的团队在许多不同的国家工作，而不围绕全球软件开发实施特定的东西。

Some very simple things, like making sure that each place understands the other one's processes.

一些非常简单的事情，比如确保每个地方都了解另一个地方的流程。

About.

大约。

Even down to when you're having calls and we're finding this now in the because we've gone so hybrid when you were having calls that we actually sent the minutes out very quickly so people know what actions they're supposed to be taking.

甚至当你接到电话时，我们现在发现了这一点，因为当你打电话时，我们已经变得如此混合，以至于我们实际上非常迅速地发送了会议记录，以便人们知道他们应该采取什么行动。

Lots of There's lots of things around that. We were talking about that towards the end of the semester. But the global software development is different than local software development and many of the you may have worked. Has anyone worked in a global software development team?

很多 围绕这有很多事情。我们在学期末谈论过这个问题。但是全球软件开发与本地软件开发不同，你们中的许多人可能已经工作过。有人在全球软件开发团队工作过吗？

So what issues did you have Issues? Did it work perfectly? No. OK, so give me one issue.

那么你遇到了什么问题？它工作完美吗？不。好的，所以给我一个问题。

Time zones, Absolutely. Temporal issues. Any other one? Who else said they were communications communication issues? So give me an example, example.

时区，当然可以。时间问题。还有其他的吗？还有谁说他们是沟通沟通问题？所以给我举个例子，例子。

Communicate with other people from different countries. So was it words, language, language, constraints? Yeah, various things. Anyone else? Who else said they were tonight?

与来自不同国家的其他人交流。那么是文字、语言、语言、约束吗？是的，各种各样的事情。别人？还有谁说他们今晚是？

I'm trying to see something different. You didn't talk to me at, you said usually disagreements like teams, they don't take the issue on themselves, OK. It's like you did it, you did it okay. So there's a bit of conflict around that. Now, what's interesting about these things, and this is something I found out when I started working in this very early, is even though companies were saying to us that global software development didn't work because they were saying that to us in the room, the real issues.

我试图看到一些不同的东西。你没有和我谈过，你说通常像团队一样的分歧，他们不会自己把问题放在自己身上，好吧。就像你做到了，你做

得很好。所以这方面存在一些冲突。现在，这些事情的有趣之处在于，这是我很早就开始工作时发现的，即使公司对我们说全球软件开发不起作用，因为他们在房间里对我们说，真正的问题。

Aren't really software engineering issues the project management issues?

软件工程问题难道不是项目管理问题吗？

The temperament issues, the culture issues, the communication issues. So it's really interesting because the issues tend to be at that higher level and if we can solve those, we can solve an awful lot. So that's fair. So it's nice that some people have done so. There's another bit of diversity in the class. Some people have worked in GST. Women in STEM, as I said, do a lot, encouraging more female students, trying to understand the success of interventions. So if we're intervening, we're trying to talk to school girls.

气质问题，文化问题，沟通问题。所以这真的很有趣，因为问题往往在更高的层次上，如果我们能解决这些问题，我们就能解决很多问题。所以这很公平。所以有些人这样做了，这很好。课堂上还有一点多样性。有些人曾在GST工作过。正如我所说，STEM领域的女性做了很多工作，鼓励更多的女学生，试图了解干预措施的成功。因此，如果我们进行干预，我们就会尝试与女学生交谈。

How are we seeing that whether things are happening or not and industry can't focus so working with small software development companies so home safe care are a group who do technology for supporting people in the home and large companies IBM you know Johnson Johnson was around gender more women instead of Q core company who developed software for.

我们怎么看，无论事情是否正在发生，行业都无法集中精力，所以与小型软件开发公司合作，所以家庭安全护理是一个为家庭和大公司的人做技术的团体，IBM，你知道约翰逊约翰逊是围绕性别更多的女性，而不

是 Q 核心公司，谁开发软件。

Opticians. People like Specsavers Vision Care, and we did a lot of work with them around global software development. Agile, safe, safe.

配镜师。像 Specsavers Vision Care 这样的人，我们在全球软件开发方面与他们做了很多工作。敏捷、安全、可靠。

Until the software development and how to implement that profit into organization and working with the health Service Executive who are the organization, the public service organization in Ireland to look after all our hospital health system and they have a branch, the chief Clinical Chief Information Officer and I go to conferences and I publish them. That's what I do, you know, So that's me and I run away from here and I'm you know back reading pieces and things. So that's all we had to confirm.

直到软件开发以及如何将利润实施到组织中，并与卫生服务执行官合作，他们是组织，爱尔兰的公共服务组织，负责我们所有的医院卫生系统，他们有一个分支机构，首席临床首席信息官和我去参加会议并发布它们。这就是我所做的，你知道的，所以这就是我，我逃离了这里，我是你知道的，在读文章和东西。这就是我们必须确认的全部内容。

Software engineering, Professional issues Analysis of design for Information systems. So that's the recipe this afternoon.

软件工程，专业问题 信息系统设计分析。这就是今天下午的食谱。

Software quality, then business software quality and healthcare. So that's yeah, same the similar. I really do align my research with my teaching, which has been really nice. Maybe the special issues are probably the one that's inside that. And so I also teach the SAS students, but I teach healthcare professionals sometimes people working in the industry around medical device quality.

软件质量，然后是商业软件质量和医疗保健。所以这是是的，相似的。我确实将我的研究与我的教学相结合，这真的很好。也许特殊问题可能是其中的那个。因此，我也教SAS的学生，但我有时会教医疗保健专业人员，让他们了解医疗器械质量。

Finally, our master's project information. I talked a little bit about that. You know why? And I have taught internationally, I thought in Uganda, Finland, Ghana on short term. I've actually had my whole academic life here in Ireland, here in U well, actually have taught in those countries on short term projects with different countries.

最后，我们硕士的项目信息。我谈了一下。知道为什么吗？我曾在国际上任教，我想在乌干达、芬兰、加纳短期任教。实际上，我的整个学术生涯都是在爱尔兰，在爱尔兰，实际上在这些国家与不同国家进行短期项目教学。

So that's me. OK, so I think you have a good bit about me now. And as I say, if people want to talk to me, I'm always willing to talk. I'm a good talker, so.

这就是我。好吧，所以我想你现在对我有很好的了解。正如我所说，如果人们想和我交谈，我总是愿意交谈。我是一个善于说话的人，所以。

Today we better talk about the modules. OK. And so it's for the Masters and Software Engineering, it's CS57-O3. So at this point, if you're in the wrong room, you start to go, OK, but hopefully you're all here. So as I said, we're going to record the lectures and make them available. Please do be aware for the people who were late, second slide talks about the recording, so please have a look at that and I will upload them as APDF file post the lecture.

今天我们最好谈谈模块。还行。所以对于硕士和软件工程来说，它是CS57-O3。所以在这一点上，如果你在错误的房间里，你开始走，好吧，但希望你们都在这里。因此，正如我所说，我们将录制讲座并发布它们。请注意迟到的人，第二张幻灯片谈到了录音，所以请看一下，我

会在讲座后将它们作为 APDF 文件上传。

So nothing we want before the lecture you are absolutely expecting to attend.

因此，在您绝对期望参加的讲座之前，我们什么都不想要。

Right, this is a problem based learning module. If you are not here, you are not learning. OK, really, really important. OK and so lots of good work. So the lectures include discussion exercises which will help your understanding of the topic. And again, you know, possibly if you find it difficult, it's different. I know it's different, you know. So please talk to me. You will be in groups. Again, you need to talk to me. If you're finding that there's one person in the group isn't pulling their weight, there is no point in telling me in week 12.

是的，这是一个基于问题的学习模块。如果你不在这里，你就不是在学习。好吧，真的，真的很重要。好的，还有很多很好的工作。因此，讲座包括讨论练习，这将有助于您理解该主题。再说一遍，你知道，如果你觉得困难，那就不同了。我知道这是不同的，你知道的。所以请和我谈谈。你们将成群结队。再说一次，你需要和我谈谈。如果你发现小组中有一个人没有努力，那么在第 12 周告诉我是没有意义的。

This project was really hard because there was only two of us working on it while they're supposed to be 3. I need to be given that information up front. If that happens, I can deal with it. If it happens in hindsight, I cannot deal with it.

这个项目真的很困难，因为我们只有两个人在做，而他们应该是 3 人。我需要提前获得这些信息。如果发生这种情况，我可以处理它。如果事后看来，我无法处理。

OK. So really important, I think what I'm certainly postgraduate students, you're more mature. I think you're more capable of doing that and don't let you be dragged down by somebody else in your group,

OK?

还行。所以真的很重要，我觉得我肯定是研究生，你们更成熟了。我认为你更有能力做到这一点，不要让你被你团队中的其他人拖累，好吗？

So the next year schedule brought the lectures face to face. That's.

因此，第二年的日程安排使讲座面对面。那是。

Race like lectures online, but I do lectures online in your earlier undergraduates and get caught your record. It's terrible, isn't it? I think it's terrible. Anyway, so recording 1 double lecture. So you see I have the room wrong here now. So the room is this room. I will change it. So Thursday is 11/12 11:50 Of course I got that wrong 11:50 or Fridays 11 to one. Did you get that message of bright space?

像在线讲座一样比赛，但我在你早期的本科生中在网上做讲座，并被你的记录所吸引。这太可怕了，不是吗？我认为这太可怕了。无论如何，所以录制 1 次双重讲座。所以你看我现在的房间错了。所以房间就是这个房间。我会改变它。所以星期四是 11/12 11: 50，当然我弄错了 11: 50 或星期五 11 比 1。你得到明亮空间的信息了吗？

OK. So please keep that time free. It's the only time that the two classes are free and I need to I I'm sorry about the changes. And also just keep Mondays four to six are free for those weeks.

还行。所以请保持这段时间的空闲。这是这两个课程唯一一次免费，我需要对这些变化感到抱歉。而且，只要保持星期一，这几周有四到六个是免费的。

I at the moment I'm not charging anything on those days, so if I'm scheduling on Fridays I have lost so bright space for current lecture days and times and the timetable is subject to change because of.

我目前在那些日子里不收取任何费用，所以如果我安排在周五，我已经失去了当前讲座日期和时间的明亮空间，并且时间表可能会因此而发生

变化。

Research Liro, deputy director You would not believe how many Thursdays I'm being told where Portugal what to do. I was there last week. Wonder when I just kind of pulled this together and said keep the Fridays free. Literally within an hour. I had three times on Thursdays that I have to put into my timetable, so please keep that free. Anyone got any issues with that? It's the only two hours in the whole timetable that CS502 and CS503.

研究 Liro, 副主任 你不会相信有多少个星期四我被告知葡萄牙该做什么。我上周去过那里。不知道我什么时候把这个放在一起, 说让星期五自由。从字面上看, 在一个小时内。我在星期四有三次必须放在我的时间表上, 所以请保持空闲。有人对此有任何问题吗? 这是整个时间表中 CS502 和 CS503 中仅有的两个小时。

Could be accounted.

可以解释。

OK. And that's why I got the message out of bright space last week, so. 还行。这就是为什么我上周从明亮的空间中得到信息, 所以。

OK. So I will give you notice of lecture both in lectures and through bright space. I will keep you out. I put up what I would call a provisional timetable on Bright space and obviously the rooms, we haven't put up rooms on that 100% sure. And so just be very careful about that, please. Also if you need to meet me, so let me talk a little bit about the office hours. So my office is T3027.

还行。因此, 我会在讲座中和通过明亮的空间给你们讲课的通知。我会把你拒之门外。我在明亮的空间上放了一个我称之为临时时间表的时间表, 显然房间, 我们还没有 100% 确定地放房间。所以请非常小心。另外, 如果你需要见我, 让我谈谈办公时间。所以我的办公室是 T3027。



Which is in the Attorney building. So if you stand at the door, one of the doors of the CS building, you'll see the building over here with the silver tower. OK, That's the Tierney building. Leroy are the top two floors and I'm on the top floor, floor three. If you're coming to Europe, there's a double door that has a lot. We don't have a Porter in the building, so it's our security. And if you're coming, you really do need to make a time. So what I'm saying is that's my time and if you need to talk to me, please.

这是在律师大楼里。所以如果你站在门口，CS大楼的一扇门，你会看到这边的建筑和银塔。好吧，这就是蒂尔尼大楼。Leroy 是顶层的两层，我在顶层，三层。如果你要来欧洲，这里有一扇双门，里面有很多东西。我们大楼里没有搬运工，所以这是我们的安全保障。如果你要来，你真的需要腾出时间。所以我要说的是，这是我的时间，如果你需要和我谈谈，请。

E-mail me and I'll arrange an exact time and I can be at the door to meet you. Because of Hybrid, we don't always have someone. We're 99 Percent, 90% of the time now have someone in the office. There is a doorbell and they let you in. Other people coming out anyway, so it's not so bad. But if I know you're coming, I can be there to meet you. OK, but I will say about office hours and I suppose the whole communication is.

给我发电子邮件，我会安排一个确切的时间，我可以在门口迎接你。由于混合，我们并不总是有人。我们99%、90%的时间都有人在办公室。有一个门铃，他们让你进去。反正其他人都出来了，所以还不错。但如果我知道你要来，我可以在那里见你。好的，但我要说的是办公时间，我想整个沟通都是这样。

If you have a question, that's about the module.

如果您有问题，那就是关于模块的。

You use Brightspace and you send it for your Brightspace. Then

everybody in the class is involved in it. OK, if you send me a personal e-mail that says you know what time is our exam at, I will write back and say please put me on Brad's face. So save us all the bother. Just push on Brad space if you have.

您使用 Brightspace，并将其发送到您的 Brightspace。然后班上的每个人都参与其中。好吧，如果你给我发一封私人电子邮件，说你知道我们的考试时间是几点，我会回信说请把我放在布拉德的脸上。因此，请省去我们所有的麻烦。如果有的话，只需按下布拉德空间即可。

Just an issue, a personal issue about something that you want to talk to me about. Then that's when you use the office hours.

只是一个问题，一个关于你想和我谈谈的事情的个人问题。然后就是你使用办公时间的时候。

If you have an emergency and students have emergencies.

如果您有紧急情况并且学生有紧急情况。

Please contact me immediately. Don't feel I have to wait until Thursday morning to talk to Lisa. OK, so I have no problem with you contacting me. Immediately some emergency comes up and as I said, students always have, like we close up 40 people in the class. One or two of these going to have some, you know, it might be I'm in hospital for a couple of days, or I've been told by the doctor not to come in, or I've had a bereavement, or I have an interview. Whatever it is, just let me know.

请立即与我联系。不要觉得我必须等到星期四早上才能和丽莎谈谈。好的，所以我对联系我没有问题。一些紧急情况立即出现，正如我所说，学生总是有，就像我们把班上的40个人关起来一样。其中有一两个会有一些，你知道，可能是在医院住了几天，或者医生告诉我不要进来，或者我有过丧亲之痛，或者我有一个面试。不管是什么，请告诉我。

OK. So in general, 99 to 10 on Thursdays, I don't particularly like the after class because I feel after class, normally when students come up to me after class, it's about something I said in the lecture and you want clarification, you should be asking that question during this. OK. So just be careful about that a little bit, please. I want you to talk and I want you to ask questions. OK. That's really important. So that's the office hours. And as I said, happy to talk to you. And as I said, Denise is urgent. They don't feel we can't. It's really important. It's really important that you can.

还行。所以一般来说，周四 99 点到 10 点，我不是特别喜欢课后，因为我觉得课后，通常当学生下课后来找我时，这是关于我在讲座中说的话，你想要澄清，你应该在这期间问这个问题。还行。所以请小心一点。我要你说话，我要你问问题。还行。这真的很重要。这就是办公时间。正如我所说，很高兴与您交谈。正如我所说，丹尼斯很紧急。他们不觉得我们做不到。这真的很重要。你能做到真的很重要。

OK.

还行。

And so the use of bright space is virtually all you're all using bright space anyway, I presume? Yeah, so. And there will be announcements, submission of assignments, resources. Now really, the resources, there might be an odd paper for that, but I normally just reference papers and say go away, find them, good exercise. And.

所以明亮空间的使用几乎是你们都在使用明亮空间，我想？是的，所以。并且会有公告、提交作业、资源。现在真的，资源，可能有一篇奇怪的论文，但我通常只是参考论文，然后说走开，找到它们，很好的锻炼。和。

The recording and the PDF. Sometimes the recording just doesn't work. If the recording just doesn't work, well, that's, you know, life is as it is.

录音和 PDF。有时录音不起作用。如果录音不起作用，那么，你知道，生活就是这样。

OK, so I'm not going to rerecord. I would hope you'll be here and that's important.

好的，所以我不打算重新录制。我希望你会在这里，这很重要。

So forums, as I say, going in and asking through bridespace queries unless personal should be submitted. It allows all students to participate in conversation and sometimes one of you will have the answer for somebody else and I don't need to worry about it. And it allows all students to get the answers and personal queries to me, OK.

因此，正如我所说，论坛会进入并通过新娘空间查询进行询问，除非应该提交个人问题。它允许所有学生参与对话，有时你们中的一个人会为其他人提供答案，我不需要担心。它允许所有学生向我提供答案和个人疑问，好吧。

OK, so the module then the outline. So the objective objectives are to provide an understanding of the processes and techniques.

好的，所以模块然后是大纲。因此，客观目标是提供对过程和技术理解。

Used to develop and maintain quality software.

用于开发和维护高质量的软件。

OK, so.

好的，所以。

There'll be a wee bit about testing.

会有一点关于测试的事情。

But and that was kind of depend on you and the work you do, but it's really about overall software quality, how do we build in that quality from the start. Quality assurance, somebody mentioned it there earlier, that's effectively what you're talking about. What is quality assurance? How can we make it work? How can we make it work in particular situations. So software quality assurance, process quality product, quality software process models. So talking a little bit, not in huge depth but a little bit.

但是，这在某种程度上取决于你和你所做的工作，但这实际上是关于整体软件质量的，我们如何从一开始就建立这种质量。质量保证，之前有人提到过，这实际上就是你在说的。什么是质量保证？我们怎样才能让它发挥作用？我们如何让它在特定情况下发挥作用。所以软件质量保证，过程质量产品，质量软件过程模型。所以说一点点，不是很深入，而是一点点。

About the life cycle.

关于生命周期。

And particular life cycle stages. And again because it's OK. So I asked the question when he worked in a global environment, how many people have actually worked in a software development type environment? So all the people that did global obviously.

以及特定的生命周期阶段。再说一次，因为它没关系。所以我问了一个问题，当他在全球环境中工作时，有多少人真正在软件开发类型的环境中工作过？所以所有做全球的人显然。

OK. And then the other people have come straight from university, have you?

还行。然后其他人都是直接从大学毕业的，是吗？

Yeah, straight from university, from undergraduate to here. Yeah.

Everybody else. Straight from university. OK, so we've been mixed again for more diversity. All the stood. Always good.

是的，直接从大学，从本科到这里。是的。别人。大学毕业。好的，所以我们再次混合了，以获得更多的多样性。所有人都站了起来。总是很好。

Assessment rule #1. We have to actually tell you what the assessment did. Rule #2, students always want to know what the assessment is, so let's do both. So I'm giving you an individual slash group assignment. So you'll be working on it together, but to be an individual aspect to it, given to you in week two and two weeks five and six. OK, that's their start, but there'll be a group assignment.

评估规则 #1。我们必须真正告诉你评估做了什么。规则#2，学生总是想知道评估是什么，所以让我们两者兼而有之。所以我给你一个单独的斜杠小组作业。所以你们将一起努力，但要成为它的一个独立方面，在第二周、第二周、第五周和第六周给你。好吧，这是他们的开始，但会有一个小组作业。

35% given to you in week two and you're in week 12.

35% 在第二周给你，你在第 12 周。

And then there's the final exam, 50% scheduled weeks 14 and 15. Now, we don't often have this issue with people from master classes, but do be aware that the semester goes right to week 15. There's also the week break around Easter time, so just be aware of that. So if you're planning to travel home or take holidays, please make sure it's after week 15 if you don't sit the exam.

然后是期末考试，50% 安排在第 14 周和第 15 周。现在，我们并不经常遇到大师班的人这个问题，但请注意，这个学期直接进入第 15 周。复活节前后还有一周的假期，所以要注意这一点。因此，如果您打算回家或度假，如果您不参加考试，请确保在第 15 周之后。

As I'm sure you're aware and you end up doing a repeat or if you are like we have 5 grades, do you know about eye grades? So if you're sick for example, or if you have a bereavement, as long as it's certified and there's a formally well process, then you have to apply for a library. Not through me, right? I just mark, you didn't turn up the exam, that's the next, but goes through the formal process and if you get an I grade then you still do the exam in August, which is the repeat time.

我相信你知道，你最终会重复，或者如果你像我们有 5 个等级，你知道眼睛等级吗？因此，例如，如果你生病了，或者你有丧亲之痛，只要它经过认证并且有一个正式的健康程序，那么你就必须申请图书馆。不是通过我，对吧？我只是标记，你没有参加考试，这是下一个，但要经过正式的过程，如果你得到 I 级，那么你仍然在 8 月参加考试，这是重复时间。

But it's not count.

但这不算数。

The repeats are capped and see nothing. Yeah, make sure you.

重复是有上限的，什么也看不到。是的，确保你。

These regulations change and to be honest, I'm not a point where I don't need, we need to know the regulations, I just need to know what to do. But if you if something goes wrong for you as a person, then you can apply for a 9th grade and then it's called, it's not a repeat, it's a night grade assessment so it means you don't have to pay for it.

这些规定会发生变化，老实说，我不是不需要的地步，我们需要了解规定，我只需要知道该怎么做。但是，如果你作为一个人出了问题，那么你可以申请 9 年级，然后它被召唤，这不是重复，而是夜间等级评估，所以这意味着你不必为此付费。

And you. And you.

还有你。还有你。

Yeah, you don't have to pay for my account, OK. So just be aware of that. I think it's important to be aware of that.

是的，您不必为我的帐户付费，好吧。所以要注意这一点。我认为意识到这一点很重要。

So the assignments, particularly this one, is a problem that will be developed through problem based learning, which I'll talk about in a minute. And so PBL starting point for learning is a problem to be solved. So you're going to get a problem and you're going to have to solve it before I actually tell you how to do it.

因此，作业，尤其是这个作业，是一个将通过基于问题的学习来发展的问题，我稍后会谈到这个问题。因此，PBL学习的起点是一个需要解决的问题。所以你会遇到一个问题，在我真正告诉你如何去做之前，你必须解决它。

OK, basically and constructing and teaching stores that you causes using problems. There's a motivation and focus for the student activity. Now in what we call pure PBL. I would do no lecture.

好的，基本上，构建和教学您导致的商店使用问题。学生活动有动机和重点。现在我们称之为纯PBL。我不会做任何讲座。

OK, because we're doing what I call a hybrid, which I found works really well, I will give some lecturing, but I will not be lecturing for two hours as I say.

好的，因为我们正在做我所说的混合，我发现效果非常好，我会讲一些课，但我不会像我说的那样讲两个小时。

So that's the summary of the lecture. So summary so far. Any questions at this stage?



以上就是讲座的总结。到目前为止总结一下。现阶段有什么问题吗？

What is the format of the final exam questions? And I can't tell you anymore. No, that's OK, he's allowed. Yeah, go on.

期末考试题的格式是什么？我不能再告诉你了。不，没关系，他是被允许的。是的，继续。

No, I don't do quizzes.

不，我不做测验。

Right hand, right hand, but it would be questions and there will be some choice on it but I haven't decided yet and when I do know, I will let you know.

右手，右手，但这将是问题，会有一些选择，但我还没有决定，当我知道时，我会让你知道。

OK, yeah. But it won't be a quiz, no.

好的，是的。但这不会是一个测验，不。

Any other questions?

还有其他问题吗？

No OK right. So problem based learning.

不行，对吧。所以基于问题的学习。

So in problem based learning, second one is probably more important than the first one. The learning occurs in small student groups. So you would be divided into teams and you will work in teams and you will then come up with solutions to a problem that I will pose to you.

因此，在基于问题的学习中，第二个可能比第一个更重要。学习发生在

小学生小组中。因此，你会被分成几个小组，你会在团队中工作，然后你会想出一个解决方案，以解决我将向你提出的问题。

OK, so I'm not going to tell you how to solve the problem. I am going to work with your groups and facilitate you and guide you. So each week I will work with each group and I will talk to you about what you've done. And if I find you're going down a rabbit hole, do you know that phrase? Going down a rabbit hole means you're going that way and you should be like, going this way. OK, I will pull you back. OK. If I find that one group has really found something that's really nice and interesting, they might be asked to talk to the others in the class budget.

好的，所以我不打算告诉你如何解决这个问题。我将与你们的小组合作，为你们提供便利和指导。因此，每周我都会与每个小组一起工作，我会和你谈谈你做了什么。如果我发现你要掉进兔子洞了，你知道这句话吗？掉进兔子洞意味着你要走那条路，你应该像，走这条路。好吧，我会把你拉回来的。还行。如果我发现一个小组真的找到了一些非常好和有趣的东西，他们可能会被要求在班级预算中与其他人交谈。

OK, so you're learning from each other, from your work, and I'm pushing and pulling you to get you in the learning mode. OK, it's student centers. That's the first point. So some authentic problem is presented at the beginning, before any preparation of study has occurred. Now we're already after doing a mini PBL with the chair.

好的，所以你们正在互相学习，从你的工作中学习，我在推动和拉动你，让你进入学习模式。好的，是学生中心。这是第一点。因此，在开始任何研究准备之前，一些真实的问题就被提出来了。现在我们已经在用椅子做了一个迷你PBL之后。

OK, you kinda knew nothing.

好吧，你什么都不知道。

But when I pushed, you knew.

但是当我推动时，你知道了。

And somebody. There was one person in the class who didn't realize that the component could be a bad component and they learned something, but they learned it from one of he, not from me. OK, so that was a PPL exercise the problems encountered. I use the tools to achieve the knowledge.

还有人。班上有一人没有意识到这个组件可能是一个坏组件，他们学到了一些东西，但他们是从他那里学到的，而不是从我那里学到的。好的，这就是 PPL 练习遇到的问题。我使用这些工具来获得知识。

So if you're following a problem, you'll be achieving the knowledge and the problem solving skills necessary to eventually solve the problems. The beauty of this and I have friends and other colleague here, she's in the family Business School, did her PhD on problem based learning and she proved that people's learning was far better using PBL than just one change. OK, so new information is acquired through self-directed.

因此，如果你正在关注一个问题，你将获得最终解决问题所需的知识和解决问题的技能。这个的美妙之处在于，我在这里有朋友和其他同事，她在家族商学院，攻读了基于问题的学习的博士学位，她证明了人们使用 PBL 的学习效果比仅仅改变一次要好得多。好的，所以新信息是通过自我指导获得的。

OK, so it requires you to read. So there's books. So I would sometimes say read Chapter X Office, but you also need to be going out and looking at folks, OK?

好的，所以它需要你阅读。所以有书。所以我会说读第十章办公室，但你也需要出去看看人们，好吗？

Journals and conference papers available through the library web pages. You will need to go away and look up stuff. That's part of what you would need to do. I will notify you in class and you know I've got.

This will also be examinable.

期刊和会议论文可通过图书馆网页获得。你需要离开并查找东西。这是您需要做的事情的一部分。我会在课堂上通知你，你知道我有。这也是可以检查的。

So please describe X with reference to at least three papers that you read during the year.

因此，请参考您在这一年中阅读的至少三篇论文来描述 X。

That kind of thing. So you need to be reading and reading outside classes. Really important for your project and for your exam. OK, like you're a master's class, you probably have 10 hours contact lectures, 10 hours lectures In the week you have many or 10, many 14. OK, so 14 hours is not a lot for a full time course, and that is because the other time is supposed to be spent.

那种事情。所以你需要在课外阅读和阅读。对你的项目和考试都非常重要。好吧，就像你是一个大师班一样，你可能有 10 个小时的接触讲座，10 个小时的讲座，一周内你有很多或 10 个，很多 14 个。好的，所以 14 小时对于全日制课程来说并不多，那是因为其他时间应该花掉。

Studying OK. I was an undergraduate here long time ago and we had a different credit system, so if you had 9 credits it was very clear and I always think it's one of the things we lost in going to the European credit system. So I imagine it might be 9 credits that meant two hours lectures.

学习 OK。很久以前，我还是这里的本科生，我们有一个不同的学分体系，所以如果你有 9 个学分，那就很清楚了，我一直认为这是我们进入欧洲学分体系时失去的东西之一。所以我想这可能是 9 个学分，这意味着两个小时的讲座。

One hour 1 hour's tutorial and six hour self study.

1小时1小时辅导和6小时自学。

If you had a 15 credit module as we had in fourth year or in the masters classes, 2 hours lectures.

如果你有一个 15 学分的模块，就像我们在四年级或大师班上一样，2 小时的讲座。

Maybe an hour or two tutorial lab, 10 to 13 hours of self study.

也许是一两个小时的辅导实验室，10 到 13 个小时的自学。

OK, so if you get to thinking about it like that, you have 5 modules.

好的，如果你这样想，你有 5 个模块。

Let's say there are 12 private modules, that's 60 hours. You are supposed to report on the number of week, OK. And that's really realistic for a master subject, so just be aware of that. Anyway, I do think we lost on that because people look and say I've got 14 hours, I can take a part time job and I can work 50% of the time. It doesn't work when you're doing something like this.

假设有 12 个私有模块，即 60 小时。你应该报告周数，好吧。对于一个硕士科目来说，这真的很现实，所以要注意这一点。无论如何，我确实认为我们输了，因为人们看着我说我有 14 个小时，我可以做兼职工作，我可以工作 50% 的时间。当你做这样的事情时，它是行不通的。

So I'm going to get you to talk in groups. Believe it or not, we've all got to talk to each other. So get yourself into groups of three. You can stand up, you can move chairs around and start.

所以我要让你们分组讨论。信不信由你，我们都必须互相交谈。因此，让自己分成三人一组。你可以站起来，你可以移动椅子，然后开始。

OK, go into Trace.

好的，进入 Trace。

Stand up so 3/3.

站起来，所以 3/3。

3333, Not these three. Three. You're not separating it.

3333，不是这三个。三。你没有把它分开。

You too. And you move up here. Talk Here. Right here. Pull up your chairs. You can move. Stand up tall move chairs.

你也是。然后你搬到这里。在这里说话。就在这儿。拉起你的椅子。你可以移动。站起来高高的移动椅子。

Stop to approve your chairs. Come on. Seriously.

停下来批准你的椅子。加油。认真地。

Because I needed to pass the \*\*\*\*\* call. A \*\*\*\*\* \*\*\*\*\* job.

因为我需要通过\*\*\*电话。\*\*\*\*\*。\*\*\*工作。

Why should you be taking this? You're doing a Masters in Software Engineering, why should you take software?

你为什么要服用这个？你正在攻读软件工程硕士学位，你为什么要学习软件？

How about you?

你怎么样？

Just for interesting.

只是为了有趣。

And maybe you'll have time. You need that for your coding.

也许你会有时间。你的编码需要它。

Project somebody will do the share who need to recheck, review about the code, what we did, what we actually do to check the gate, gate, log, what did you, what did you do?

项目有人会做分享，他们需要重新检查，审查代码，我们做了什么，我们实际做了什么来检查门，门，日志，你做了什么，你做了什么？

Maybe we need to come in together or not somebody, somebody need to be the supervisor. So that's why I needed to learn about this more here.

也许我们需要一起进来，或者不是某个人，有人需要成为主管。所以这就是为什么我需要在这里更多地了解这一点。

Because.

因为。

It's defensive with somebody. I feel somebody do this \*\*\*\* the code with me, so yeah.

这是对某人的防御。我觉得有人在做这个\*\*，和我一起写代码，所以是的。

I think you have some.

我想你有一些。

Keeping, keeping the same.

保持，保持不变。

Then.

然后。

Project and then.

项目，然后。

For all the project.

对于所有项目。

Let me have a match for this.

让我来匹配一下。

We want to make sure that the project we're putting out there is reliable. OK, have you an answer?

我们希望确保我们推出的项目是可靠的。好的，你有答案吗？

The whole process. So we need to know the process end to end. We're going to work in the industry, OK. So we need to know the full process if we're going to work in the industry, be an answer.

整个过程。因此，我们需要了解端到端的过程。我们要在这个行业工作，好吧。因此，如果我们要在这个行业工作，我们需要了解整个过程，成为一个答案。

I feel like if there is no software quality, the cost of production would increase, which is OK. If there's no software quality, the cost of production will increase.

我觉得如果没有软件质量，生产成本就会增加，这没关系。如果没有软件质量，生产成本就会增加。

OK, do you have an answer?



好的，你有答案吗？

Keep the quality awareness in your mind when we are coding. OK, so are you listening? You're supposed to learn from everyone else, keeping the quality of the process in their minds for their coding. OK, part of the reason I'm competing is so that you have it on the recording itself. OK? And this group.

当我们编码时，请牢记质量意识。好的，所以你在听吗？你应该向其他人学习，在他们的编码过程中保持过程的质量。好吧，我参加比赛的部分原因是为了让你在录音中拥有它。还行？还有这群人。

OK, to make sure that you are actually following the software development process in your development. OK, so there's a few reasons for taking the module. I'm sure other people have lots of other good reasons, but we'll come back to them in a minute. So the next question, pause this again. Next question is, Oh dear, you're serious, So.

好的，以确保您在开发过程中确实遵循了软件开发过程。好的，所以有几个原因需要学习这个模块。我相信其他人还有很多其他很好的理由，但我们稍后会回到他们身上。所以下一个问题，再暂停一下。下一个问题是，哦，亲爱的，你是认真的，所以。

The very toilet modules so far. What do you think is different or not similar?

到目前为止，厕所模块。您认为有什么不同或不相似之处？

It's about software talk.

这是关于软件谈话的。

Talk.

说话。

What is similar about assurance?

鉴证有什么相似之处？

Think about it, Weren't asked the first question to be asking for any question.

想想看，没有被问到第一个问题来问任何问题。

So did you come up with something?

那么你有没有想出什么办法？

OK. So it's more process oriented rather than technically oriented. OK, I go with, we talk about sometimes the spectrum of software engineering. So you have a very techie side of the software side and it's still down before the software side. It's not totally what did you come up with?

还行。因此，它更面向流程，而不是面向技术。好的，我同意，我们有时会谈论软件工程的范围。因此，软件方面有非常技术性的一面，在软件方面之前仍然处于下降状态。这不完全是你想出的吗？

For similarity.

为了相似性。

OK. So similar. We're focusing on the high end of the product for the customers. Did you come up with something? Yes, adding quality in software processes, sorry, software process improvement, adding quality. Yes. OK. So that's what's different about it. That is the difference. Yeah, that's the difference. So we're looking at adding the quality early on. OK, Who else did you come up with one?

好，太相似了。我们专注于为客户提供高端产品。你想出什么了吗？是的，在软件过程中增加质量，对不起，软件过程改进，增加质量。是

的。还行。这就是它的不同之处。这就是区别。是的，这就是区别。因此，我们正在考虑尽早提高质量。好吧，你还想出了一个？

Software future other modules.

软件未来其他模块。

Forms are separate.

表单是分离的。

OK, so it's a little bit like over here. So I think that so this module started focusing on the whole system rather than just the individual parts. So that's kind of a little bit like you saying, here's the technical stuff and here's the old process, Okay.

好吧，所以它有点像这里。所以我认为这个模块开始关注整个系统，而不仅仅是单个部分。所以这有点像你说的，这是技术的东西，这是旧的流程，好吧。

No, you did. And OK, so we've got a few things. And the other question which I always like to ask is.

不，你做到了。好的，所以我们有几件事。另一个我一直想问的问题是。

I'm trying to work on all this.

我正在努力解决所有这些问题。

I want you to have a quick chat about if you have any concerns at this stage.

我希望您快速聊聊您现阶段是否有任何疑虑。

OK.

还行。

And concerns of the where we're going to do PPL and you might have done it before or anything or are you really having to do about this or I'm so techie I'm not going to be able to do like think about those sorts of things so just 30 seconds I want you to just.

还有关于我们将在哪里做 PPL 的担忧，你可能以前做过，或者你真的必须为此做，或者我太技术了，我无法像思考这些事情一样做，所以只有 30 秒，我希望你只是。

Sorry, Thank you.

对不起，谢谢。

So much.

这么多。

It's my practical production.

这是我的实际作品。

OK, So what did you come up with anything in your group?

好的，那么你在小组里想出了什么？

OK, they're concerned that quizzes aren't part of the main exam. I think that's kind of what I was getting here. So why are you concerned quizzes aren't part of the main exam?

好吧，他们担心测验不是主要考试的一部分。我想这就是我在这里得到的。那么，为什么你担心测验不是主要考试的一部分呢？

And if you're working in your groups and working on your projects, you're going to have to read some papers to bring that information to

the group. So there'll be nothing in the exam that hasn't been part of what you should have been learning.

如果你在小组中工作并从事你的项目，你将不得不阅读一些论文才能将这些信息带给小组。因此，考试中不会有任何内容不是您应该学习的内容的一部分。

OK, Have you had quizzes and all your other exams?

好的，你有测验和所有其他考试吗？

Really.

真。

OK.

还行。

Yeah, yes, yeah.

是的，是的，是的。

It's like it's like a rapid. So let's think about it a little bit as you've got to do a master's dissertation, so would it be really nice to have had practice of writing things?

这就像一个急流。所以让我们想一想，因为你必须做一篇硕士论文，所以有写作的练习真的很好吗？

Going to actually go to your master's dissertation, OK. And if life was the same, you know, we don't be bored. OK, So look, I will remember I and we work on that. We do a bit of work. I mean, I'm not going to teach you how to rise, but if you're writing stuff and I'll be able to give you some feedback or so, we work in it. I would honestly say if you participate in this module and you work in it and I do expect work, you

know, I'm a worker. I work hard. I play hard.

要去参加你的硕士论文，好吧。如果生活是一样的，你知道，我们不会感到无聊。好吧，所以看，我会记住我和我们一起努力的。我们做了一些工作。我的意思是，我不会教你如何崛起，但如果你正在写东西，我可以给你一些反馈，我们就会努力。老实说，如果你参加这个模块并在其中工作，我确实期待工作，你知道，我是一名工人。我努力工作。我玩得很努力。

So I expect you to work because a masters is not an easily earned document. OK, so I do expect you to work, but I will work with you very as fairly as I can. OK, Frank, so I'm glad you brought up that concern. But it will not be a multiple children. So I will tell you OK here except 10 adult class. And except it's not 9:00 and it's not 4:00.

所以我希望你工作，因为硕士学位不是一份容易获得的文件。好吧，所以我确实希望你工作，但我会尽可能公平地与你合作。好的，弗兰克，我很高兴你提出了这个问题。但它不会是多个孩子。所以我会在这里告诉你，除了 10 个成人班。除了现在不是 9:00，也不是 4:00。

OK, 10:00 last Mai. You've got an hour. Yeah, it's OK.

好了，10:00 最后 Mai。你有一个小时。是的，没关系。

OK. And I by the way on that, I do start on time. Like as I said this morning, I honestly was down in the other room like 5 to 10 saying where is everybody. But I do start on time and I'm kind of a bit, I don't like interruptions. I like get here on time, get out of bed 5 minutes earlier or whatever, OK.

还行。顺便说一句，我确实准时开始了。就像我今天早上说的，老实说，我在另一个房间里，就像 5 点到 10 点一样，说每个人都在哪里。但我确实准时开始，我有点，我不喜欢被打扰。我喜欢准时到达这里，提前 5 分钟起床或其他什么，好吧。

Nothing. You're OK. You're happy.

无。你没事，你很开心。

Eve, you're all right, Yeah.

伊芙，你没事，是的。

You're OK. Any concern?

你没事吧，有什么顾虑吗？

OK. So how would this apply to really where you're going to go? So you possibly have in your heads at the moment, I mean, what kind of jobs are you thinking about going to one of these?

还行。那么，这如何适用于你要去的地方呢？所以你现在脑子里可能有，我的意思是，你正在考虑去做什么样的工作？

Programming.

编程。

Software development? What do you mean by software development?

软件开发？软件开发是什么意思？

Writing code OK, so anyone taking apart from writing code?

写代码没问题，所以有人不写代码了吗？

OK, you are. So you are going for tax lead or test manager. You'd like to be a test manager. OK. So you're going to go to test manager, You have to know about software college. Yeah, OK And I'm delighted with that kind of ambition.

好的，你是。所以你要去找税务主管或测试经理。您想成为一名测试经

理。还行。所以你要去测试经理，你必须了解软件学院。是的，好吧，我对这种雄心壮志感到高兴。

Sorry, no, I'm sorry. Project manager? Project manager? You're going to have to know some of this. Are you doing project management as well?

对不起，不，对不起。项目管理人？项目管理人？你必须知道其中的一些。你也在做项目管理吗？

Some the people who are taking the elective, so it's an option there. Anyone else?

一些正在选修的人，所以这是一个选择。别人？

Software testing. OK, so am I looking at a class here who are doing a month?

软件测试。好的，那么我是在看一个正在做一个月的班级吗？

OK, so sorry, when you get these lectures, just want to see part one, Part 2 part.

好的，很抱歉，当你听到这些讲座时，只想看看第一部分，第二部分。

Lecture one week one Part 2. Sorry about that. I need to pause them rather than see. I haven't talked since last before Christmas. OK, so am I looking at a class here who are coming here to do a master's degree?

讲座一周，第一部分，第二部分。对不起。我需要暂停它们而不是看到它们。自从圣诞节前以来，我就没有说过话。好的，那么我是不是在这里看一个来这里攻读硕士学位的班级？

And you're all going to be programmers and testers.

你们都将成为程序员和测试人员。



Yeah, but you're not being a bit more ambitious than that. I mean, you might start this Programmers and Testers.

是的，但你并没有比这更雄心勃勃。我的意思是，你可以开始这个程序员和测试人员。

But surely in a couple of years time some of you want to progress up the ladder a little bit to be the people who are becoming the project managers by the Software Policy Assurance managers or the architects. Yeah, the designers.

但可以肯定的是，在几年的时间里，你们中的一些人希望向上迈进一点，成为软件策略保证经理或架构师成为项目经理的人。是的，设计师。

So I'm just a bit surprised.

所以我只是有点惊讶。

That there is not a little bit more of.

没有多一点。

That really, when you have a master's degree, like, it really opens the world to you much more than that. Did you know there's a graduate fair on today? Yeah, plenty of your time to get down to it. Yeah. Like, do go down and see. Of course, when they're looking for graduates, they're going to be looking for people who start as programmers who start as.

真的，当你拥有硕士学位时，它真的为你打开了世界。你知道今天有毕业生博览会吗？是的，你有足够的时间去做。是的。就像，下去看看。当然，当他们寻找毕业生时，他们会寻找那些从程序员开始的人。

But there's a benefit, I would say if you're after doing a Masters, be a bit more ambitious. OK, smart.

但有一个好处，我想说，如果你在攻读硕士学位后，要更有雄心壮志。好的，聪明的。

If I was talking to the undergrads, he was saying this, I'd be like, OK, so let's keep going on the sorry I didn't start a new report.

如果我和本科生交谈，他会这样说，我会说，好吧，所以让我们继续说，对不起，我没有开始新的报告。

Any concerns?

有什么顾虑吗？

Find an example to break down to 30 or 40 instead of 50.

找一个例子来分解为 30 或 40 而不是 50。

I thought a lot about this actually and.

实际上，我想了很多。

One of the things that's very important for me.

对我来说非常重要的一件事。

Is that people participate in the group OK? And where I have given higher marks for group work, we have people who are writing as passengers who then go into the final exam and do really badly and they end up with the grades behind. So I believe now the only way to balance that is to push it up a bit. OK, but if you work through the semester?

参加小组的人可以吗？在我对小组工作给予更高分数的地方，我们有一些人作为乘客写作，然后进入期末考试，表现非常糟糕，他们最终的成绩落后。所以我相信现在平衡这一点的唯一方法就是把它推高一点。好的，但是如果你在整个学期工作呢？

You will do fine in the final exam.

你会在期末考试中取得好成绩。

OK. That's what I would say if it comes and the system that the module is designed that you're working consistently. And again, as I say, if you find someone in your group who isn't working, you have to come back and tell me, OK, And we deal with it and it may be that we decide that person there's a project on their own and hard document for not carrying their weight and you might end up in another group or you might end up with two of the OR whatever it is, we work it out.

还行。这就是我要说的，如果它来了，并且模块设计的系统是你始终如一地工作的。再说一遍，正如我所说，如果你发现你的团队中有人不工作，你必须回来告诉我，好吧，我们处理它，可能是我们决定那个人有一个项目，他们自己有一个项目，并且没有承担他们的重量的硬性文件，你可能会最终进入另一个小组，或者你最终可能会得到两个或任何东西，我们解决了这个问题。

OK, but I cannot work it out in week 11 or 12.

好的，但我无法在第 11 周或第 12 周解决。

OK, so you need to be saying, oh, pretty soon we're finding X OK, so we'll do our best all up. OK. Do you have any concerns? No. OK, so that's where we are at this minute.

好的，所以你需要说，哦，很快我们就会找到 X OK，所以我们会尽力而为。还行。你有什么顾虑吗？不。好的，这就是我们目前所处的位置。

Before we're we're not doing a break. We're going to do an exercise. I'm sorry. Yes, sorry. I just have a question like my group activity. How many people are you expecting? We do that when I give you that hotel, OK, Don't worry about it this week.

在我们之前，我们没有休息。我们要做一个练习。对不起。是的，对不起。我只是有一个问题，比如我的小组活动。你期待多少人？当我给你那家酒店时，我们就是这样做的，好吧，这周不用担心。

And so.

所以。

And that's all. We're going to do an exercise in a minute that gives you a bit of moving, so it's OK. So I do want to talk about this. I have a project, MSC Dissertation project.

仅此而已。我们一会儿要做一个练习，让你稍微动一下，所以没关系。所以我确实想谈谈这个。我有一个项目，MSC论文项目。

And I really want to take somebody on sooner rather than later. So it would be first somebody who's interested in getting a project started now.

我真的很想早点带人上场。因此，首先有人对现在开始一个项目感兴趣。

It's an industry based project where there would be some they do a lot of data collection and software company they're interested in.

Technology enables care, so how can technology help people in the home for example?

这是一个基于行业的项目，其中会有一些他们做很多数据收集和他们感兴趣的软件公司。技术使护理成为可能，那么技术如何帮助家庭中的人们呢？

So one example that I often quote from people asking what do I mean by this, and I don't know if he had a phenomenon when you were younger of the dance mats where you could, you know, play music and you danced and give you marks, why would your dancing was OK. So

those are touch fans basically. Now we will find in homes that people actually have touch mats on the ground, normally at their beds and in the bathroom because older people, if they fall.

我经常引用一个例子，人们问我这是什么意思，我不知道他是否在你年轻的时候有过一种现象，你可以，你知道，播放音乐，跳舞并给你打分，为什么你的舞蹈是可以的。所以这些基本上是触摸风扇。现在我们会发现，在家中，人们实际上在地上有触摸垫，通常是在他们的床上和浴室里，因为老年人，如果他们跌倒了。

There's a bigger chance that's where they're going to fall. So it's not that the whole carpet is, but that's where it is. That touch map then will alert somebody and say, you know there's been somebody on this map for the last five minutes that potentially have fallen. Isn't that a nice application of a very simple piece of technology? So that's the kind of thing we're looking at. So it's around technology enables care and we need to get a literature review started. So starting to go into the literature readers, we will be doing some workshops within the company. So if I have a student on board, that student will be able to come to the company.

他们更有可能会跌倒。所以并不是说整个地毯都是这样，但这就是它所在的地方。然后，触摸地图会提醒某人，并说，你知道在过去的五分钟里，这张地图上有人可能已经跌倒了。这难道不是一项非常简单的技术的一个很好的应用吗？这就是我们正在研究的那种事情。因此，这是围绕技术实现护理的，我们需要开始进行文献综述。因此，从开始进入文学读者，我们将在公司内部举办一些研讨会。因此，如果我有一个学生在船上，这个学生将能够来公司。

And you never know what happens when you're in a company and will lead to some sort of a software project over the summer and the team is led by me and other software engineer, another person in Europe and with an application therapist. So be quite healthcare software focused. So if you're interested, talk to me after the class. And also I want a

short CV including a semester one Grades is what I want to see. OK, so that's just something that some people might be interested in and I really would love to get someone on boards and later it would be very useful to me, but I think it's also very useful to you.

你永远不知道当你在一家公司工作时会发生什么，并且会在夏天领导某种软件项目，而团队由我和其他软件工程师领导，欧洲的另一个人和一个应用治疗师。因此，要非常专注于医疗保健软件。所以如果你有兴趣，请在课后和我谈谈。而且我想要一份简短的简历，包括一个学期的成绩是我想看到的。好吧，这只是一些人可能感兴趣的东西，我真的很想让某人加入董事会，以后这对我非常有用，但我认为它对你也非常有用。

OK, so as I say if anyone's interested to come up to me after the class.

好的，就像我说的，如果有人有兴趣在课后来找我。

So that's all the introductory stuff. I know it took an hour, but I think it's important that we do all that and at least set ourselves off on the right foot. So we're now going to talk a bit about software, systems and quality. And because we're doing PBL, that means you have to go do some work. So I want Jay, in groups, small groups, don't go in a group. Ten groups of 2-3 or four. OK, off you go for a walk. Just go.

以上就是介绍性的内容。我知道花了一个小时，但我认为重要的是我们做到了这一切，至少让自己走上了正确的道路。因此，我们现在要谈谈软件、系统和质量。因为我们正在做PBL，这意味着你必须去做一些工作。所以我希望杰伊，在小组中，小组，不要成群结队。十组，每组2-3或4组。好吧，你去散步吧。快走。

Look around you.

环顾四周。

And talk and see if you can come up with five software systems that

either exist on campus.

然后谈谈，看看你是否能想出五个软件系统，它们要么存在于校园里。

Could exist on campus or should exist on campus.

可以存在于校园内，也可以应该存在于校园内。

OK. That's all you have to do and think about where would it be located?

还行。这就是你所要做的，并考虑它会在哪里？

On return in 20 minutes.

20分钟后返回。

And you can walk as far as you're back here.

回到这里，你可以走多远。

Psychologist.

心理学家。

Right. I'm not hearing any. What software systems did you write?

右。我什么都没听到。你写了什么软件系统？

The bicycle Hub. The bicycle.

自行车轮毂。自行车。

Bicycle.

自行车。

OK. Next.

好的，接下来。

Emergency lights, emergency lines, lighting, emergency emergency lines or lights, lines, emergency lights. OK.

应急灯，应急线，照明，应急线或灯，线，应急灯。还行。

OK, another one.

好的，再来一个。

The car parking, car parking, car parking.

停车场，停车场，停车场。

Sorry, Sports Arena. Sports Arena. Yeah, so we have something.

对不起，体育竞技场。体育竞技场。是的，所以我们有一些东西。

Biometric systems that we could have or do we have, we have where in the foundation of in foundation building sure.

我们可以拥有或拥有的生物识别系统，我们在基础建设中拥有肯定的基础。

I believe you.

我相信你。

To access the to access the building.

访问以访问建筑物。

No, it's like for employees, Yeah, but you get in.

不，这就像对员工一样，是的，但你进去了。



No, like for.

不，喜欢。

I don't know.

我不知道。

I don't know. OK, so let's say for access for a minute.

我不知道。好的，让我们说一下访问。

OK, anyone else?

好的，还有其他人吗？

Sensors like the Lines and motion, So motion sensors.

像线条和运动这样的传感器，所以运动传感器。

Any other ones? Here's another one. No? Yeah. What's the matter?  
Campus map.

还有其他的吗？这是另一个。不？是的。怎么了？校园地图。

OK.

还行。

Is there software there?

那里有软件吗？

Come on, you can roll out cheap. We're supposed to fly each.

来吧，你可以便宜地推出。我们应该飞每一个。

Of US emergencies, yeah.

在美国的紧急情况中，是的。

Video ministry.

视频事工。

Video monitor? Video monitoring? OK Is that for secure shape that for security? Yes.

视频监视器？视频监控？OK：这是为了安全形状还是为了安全？是的。

Reservation for study rooms at the library.

预订图书馆的自习室。

Reservation Park the study rooms at the library for the line. Offer the study rooms OK as distinct from the library Book system. Yes, OK.

预订 将自习室停放在图书馆排队。提供与图书馆书籍系统不同的自习室OK。是的，好的。

They're all there, OK?

他们都在那里，好吗？

OK, laptop reservation in the library.

好的，图书馆的笔记本电脑预订。

So is every group saying there are five in this now?

那么，现在每个团体都说有五个吗？

OK.

还行。

Swiping OK.

滑动确定。

Thank you. OK, Are we trying to help you with governess start? OK, Sorry. Do you know the one? No. Anyone else? OK, we got a nice list here. OK, so why are we interested in this?

谢谢。好的，我们是想帮助你开始家庭教师吗？好的，对不起。你知道吗？不。别人？好的，我们在这里得到了一个很好的清单。好的，那么我们为什么对此感兴趣呢？

Because we are using it everything. No. The next slide is going to tell us, are you OK?

因为我们无所不用其极。不。下一张幻灯片将告诉我们，你还好吗？

Or the printers, yes.

或者打印机，是的。

OK, so we've got a list. So now what I want you to do is.

好的，我们有一个清单。所以现在我要你做的是。

Pick. Get in your grooves. What do you consider to be free? Good quality systems?

摘。进入你的凹槽。你认为什么是免费的？质量好的系统？

And think about what makes them bad quality. So come up with, But let's do 2. Good quality, two bad quality out of what you see on that list.

想想是什么让它们质量不好。所以想出，但是让我们做 2。质量好，你在那份清单上看到的有两个质量差。

And a little bit of why they're good quality and why they're bad quality.

还有一点为什么它们质量好，为什么质量差。

And they might all be good quality.

而且它们可能都是高质量的。

Bicycles.

自行车。

Simpler.

简单。

And it will.

它会的。

OK, So what group were you in?

好的，那你属于哪个小组？

OK. So which group are you in? Which group are you in? OK, but talk together. OK, You're OK. Yeah, that's what everyone's participating.

还行。那么你属于哪个群体呢？你属于哪个组？好吧，但要一起谈谈。好了，你没事。是的，这就是大家都在参与的。

OK, so.

好的，所以。

Who thinks which Which of these are good qualities? So what do you think?

谁会想到哪些是好的品质？那么你怎么看？

Was a bad one.

是一个糟糕的。

No, OK. Any other good one?

不，好的。还有其他好的吗？

Sorry. The library system, The book system or the, you think the library system. OK, are we happy with that? Anyone disagree? Anyone come up with that has been bad. No one down the back. I was talking about the motion sensors of flights. That's good. Yeah. You think that's good? The motion centers.

不好意思。图书馆系统，书籍系统或你认为的图书馆系统。好吧，我们对此感到满意吗？有人不同意吗？任何人都想出这很糟糕。后面没有人。我说的是飞行的运动传感器。很好。是的。你觉得这样好吗？运动中心。

This one? Yep.

这个？是的。

The campus map is good. There's no. I think it's back. OK, now we got good. We got one.

校园地图很好。没有。我想它又回来了。好了，现在我们变好了。我们得到了一个。

It's bad. It's good. Who thinks the campus map system is good?

这很糟糕。很好。谁认为校园地图系统好？

You think, OK, so why do you think it's we want to hear, right. I want to hear the differing views about quality. So the campus map today, you also miss your classes. You just shifted in different classes. If you would

have got the app with you and you would have know where you are at the time. So you will not miss your 10 minutes of your time, OK, 10 minutes have never been wasted, OK.

你认为，好吧，那你为什么认为这是我们想听的，对吧。我想听听关于质量的不同看法。所以今天的校园地图，你也想念你的课程。你只是在不同的班级里转移。如果您随身携带该应用程序并且您当时会知道自己在哪里。所以你不会错过你的10分钟时间，好吧，10分钟从来没有浪费过，好吧。

As you're always been there, OK was I told the children. But that just so we get to where you want to go.

因为你一直都在那里，好吧，我告诉孩子们。但这只是为了让我们到达你想去的地方。

You have to listen to other people.

你必须倾听别人的意见。

I think it's because.

我想这是因为。

And it should be more like a real time map where we can know the distance and the directions and everything, but it's just like a map. This is a diagram. Yeah, OK, it's a diagram. OK, now what's really interesting about this is a lovely example.

它应该更像是一张实时地图，我们可以知道距离、方向和一切，但它就像一张地图。这是一张图。是的，好吧，这是一个图表。好了，现在真正有趣的是一个有趣的例子。

So I'm gonna start doing names for a reason.

所以我要开始起名字是有原因的。

Right, so Delphin is saying that the app fulfills her promise.

是的，所以 Delphin 说该应用程序兑现了她的承诺。

OK, it does what you want it to do, so you're happy with it, OK?

好吧，它做了你想让它做的事情，所以你对它很满意，好吗？

You wanted to be better.

你想变得更好。

Because you have other purposes, because I've seen better, because I've seen Google Maps. So it's much better. You've seen better as well. You know that better can be done. OK, so we now have two completely different views of quality because we're coming from two different perspectives.

因为你有其他目的，因为我看得更好，因为我看过谷歌地图。所以它好多了。你也看得更清楚了。你知道可以做得更好。好吧，我们现在对质量有两种完全不同的看法，因为我们来自两个不同的角度。

And sometimes when we think about software quality, we kind of need to think about what's good enough.

有时，当我们考虑软件质量时，我们需要考虑什么足够好。

OK, and sometimes so to do an interactive map.

好的，有时做一个交互式地图。

Think about this as here you are going to develop this software. You want to satisfy your stakeholders or your user groups. So you need to figure out what did the user groups want because you could spend €5000 more on giving them an interactive map even though their static map.

想想看，因为您将在这里开发此软件。您希望满足利益相关者或用户组的需求。因此，您需要弄清楚用户组想要什么，因为即使他们的静态地图，您也可以多花 5000 欧元为他们提供交互式地图。

So neither of you are wrong, you just have a different view of quality.

所以你们俩都没有错，你们只是对质量有不同的看法。

OK. So that's what I'm trying to get you to maybe see a little bit is that we have different views and you have to figure out whose views most important, how, what's this going to cost, how long it's going to take to implement all of these things start to come into the equation. OK. And I have another point of view like see if we are going to spend €5000 on building a new. Yeah. So do you want to have the classes, any of you are going to do the cafes just one time you see, two times you see you will remember the way how you get it. So 5000 units is going to be based, so it's not.

还行。所以这就是我想让你看到的一点，我们有不同的观点，你必须弄清楚谁的观点最重要，如何，这将花费多少，需要多长时间来实现所有这些事情开始进入等式。还行。我还有另一个观点，比如看看我们是否要花 5000 欧元来建造一个新的。是的。所以你想上课吗，你们中的任何人都会去咖啡馆，只要你看一次，两次你会看到你会记住你是如何得到它的方式。所以 5000 个单位将以为基础，所以它不是。

So exactly so you're saying the customer base is such that once we learn something once. So it's and those are interesting arguments you can imagine three or four VS sitting in a project team saying.

所以，正是你说的客户群是这样的，一旦我们学到了一些东西。所以，这些都是有趣的论点，你可以想象三四个 VS 坐在一个项目团队中说。

Want to build this and the customer saying I want to see new things will cost so much and he's saying, well, I have bring in three extra programmers and it's going to take a longer length of time to do it. So



we have all these things to think about. So the project manager in the room has to really think about these things. OK yeah. So quality sometimes isn't clear cut. So that is a nice example. So I am going to where we have the campus map here. Yeah, hopefully we're talking about it. OK.

想要构建这个，客户说我想看到新的东西会花很多钱，他说，好吧，我已经带来了三个额外的程序员，这将需要更长的时间才能完成。所以我们有所有这些事情要考虑。因此，房间里的项目经理必须真正考虑这些事情。好的，是的。因此，质量有时并不明确。这是一个很好的例子。所以我要去我们这里有校园地图的地方。是的，希望我们正在谈论它。还行。

Campus map is good and someone else says that. OK, so we just throw it out like that for the moment.

校园地图很好，别人这么说。好吧，所以我们暂时就这样扔掉它。

Any other system that's bad that you're looking at the emergency SOS, it's a bad quality just because it's, I mean nobody exactly knows where they are position, there's no way to highlight it but you wouldn't believe the money that was spent on these.

任何其他系统都不好，你正在查看紧急 SOS，这是一个糟糕的质量，因为它是，我的意思是没有人确切知道他们的位置，没有办法突出显示它，但你不会相信花在这些上的钱。

I'm serious. Also, they are at very long distances. Sorry. Also, they are at very long distances. Yeah. Now you see they have some things I do know a little bit about. This is where there is a serious emergency. You actually have to get people away.

我是认真的。此外，它们的距离很远。不好意思。此外，它们的距离很远。是的。现在你看他们有一些事情我确实知道一点。这是发生严重紧急情况的地方。你实际上必须把人赶走。

So back in the 80s I worked in industry and we actually had, we had box care here actually when I was in college here back in the 70s and in the 80s down in a company I worked in and we had a bomb scare and of course we are all standing out of the fence saying this is interesting.

所以早在 80 年代，我在工业界工作，我们实际上有，我们实际上在 70 年代和 80 年代在我工作的一家公司上大学时，我们在这里有盒子护理，我们遇到了炸弹恐慌，当然我们都站在栅栏外说这很有趣。

And one of the women who worked with us was actually from Northern Ireland and had seen a bomb, had seen bomb and she said everyone has to get out of here, we just have to get out of here. So you actually have to have them far away. There is a reason behind that. OK. Any other one that's bad that you sorry, why is the traffic light system back? So you can meet the traffic light system AI enabled? Because when you press the button, even though the vehicles are not there.

和我们一起工作的一位女士实际上来自北爱尔兰，她见过炸弹，见过炸弹，她说每个人都必须离开这里，我们只需要离开这里。所以你实际上必须把它们放在很远的地方。这背后是有原因的。还行。你对不起，为什么红绿灯系统又回来了？那么你能满足红绿灯系统 AI 的启用吗？因为当你按下按钮时，即使车辆不在那里。

It's still showing that. OK, so if you make it so it doesn't have to be AI, can it not just be a sensor? Yeah, everything doesn't have to be AI.

它仍然表明了这一点。好吧，如果你把它做到了，它不一定是人工智能，它不能只是一个传感器吗？是的，一切都不一定是人工智能。

OK, yeah, we send it then. The way I come to work in the morning is at T Junction and it is just the best.

好的，是的，我们发送它。我早上上班的方式是在 T Junction，这是最好的。

Measures many cars coming in and out. It's just brilliant, I have to say. So everything doesn't have BAI because it could be sensors. OK, so do we are we going to agree that's bad or do people think it's good?

测量进出的汽车数量。我不得不说，这真是太棒了。所以所有东西都没有BAI，因为它可能是传感器。好吧，那么我们是同意这是坏事还是人们认为这是好的？

Traffic light system.

交通信号灯系统。

By bad I don't mean it just needs a few improvement. Traffic light systems, so we reckon they need some improvements. We could be OK Any other one. Fire alarm, Fire alarm, Fire alarm, Fire alarm, OK.

我说的不好，并不是说它只需要一些改进。红绿灯系统，所以我们认为它们需要一些改进。我们可以任何其他人都是可以。火灾报警器，火灾报警器，火灾报警器，火灾报警器，OK。

It's bad. It's not suitable for a different situation where it could be Chinese food. That would be fire alarm.

这很糟糕。它不适合可能是中国菜的不同情况。那将是火警。

But nobody will be die, OK?

但没有人会死，好吗？

It's nothing happened, but it's going to be alarm. So on Thursday, the fire alarm, I hate, I hate Irish food. Everything is cheap. Who care about chips? I don't like. OK, so the chips are causing the fire enough to have to be less sensitive. OK, I think they're good, so I'm not very good, OK?

什么都没发生，但会引起警觉。所以星期四，火警，我讨厌，我讨厌爱尔兰食物。一切都很便宜。谁在乎筹码？我不喜欢。好的，所以芯片引

起火灾的程度足以降低灵敏度。好吧，我觉得他们很好，所以我不是很好，好吗？

OK. Any other one right space?

还行。还有其他合适的空间吗？

Anyone think it's good?

有人认为这很好吗？

OK, here we've got OK, anyone else think it's bad?

好吧，我们来了，还有人认为这很糟糕吗？

OK, you think if I do think it's bad?

好吧，你认为如果我真的认为这很糟糕？

Yeah, but if you think that's right.

是的，但如果你认为这是对的。

Because the notification sometimes, yeah, I'm very confused with the. OK, I need to go to the module and to see the notification comes from the which model?

因为通知有时，是的，我很困惑。好的，我需要转到模块并查看通知来自哪个型号？

And.

和。

And the.

和的。

So you just guess what the e-mail. So unless I put in CS57 or two, you won't know that's what it is. OK, that's an interesting it's got some issues. Anyway, OK, so here we are. You're looking around here, there's lots of systems around the place and you're basically saying there are different.

所以你猜猜电子邮件是什么。因此，除非我放入一两个 CS57，否则你不会知道它是什么。好吧，这很有趣，它有一些问题。无论如何，好吧，所以我们来了。你环顾四周，周围有很多系统，你基本上是在说有不同。

Because of different people in the class, sorry, we've got different views as to whether they're bad or good.

因为班上的人不同，对不起，我们对他们是坏人还是好人有不同的看法。

OK, so sometimes when we think quality, we have to think beyond profession.

好吧，所以有时当我们考虑质量时，我们必须超越专业。

OK, apart from perfection, I suppose know you want the system that's going to work perfectly and just everything that everyone wants. What we say it's got all the belts and whistles. But the reality is in life we don't get systems, we get systems that work efficiently. They might work efficiently for 90% of the population. And even if you take a campus map example, you know, so every visitor coming on campuses, campus map is not a good application because it's static and it's something to help them.

好吧，除了完美之外，我想你知道你想要的系统能够完美运行，以及每个人都想要的一切。我们说的是，它有所有的皮带和口哨。但现实情况是，在生活中，我们没有系统，我们得到的是高效工作的系统。它们可能对 90% 的人口有效工作。即使你以校园地图为例，你知道，所以每

个进入校园的访客，校园地图也不是一个好的应用程序，因为它是静态的，可以帮助他们。

Thought for the student party, OK, it's a big confusion for the first week or two, but again, places that they don't need it anymore anyway, so you've got to start thinking much more broadly about their policy. So.

对于学生党来说，好吧，在最初的一两个星期里，这是一个很大的混乱，但同样，无论如何，他们不再需要它的地方，所以你必须开始更广泛地思考他们的政策。所以。

I am not going to inspire.

我不会鼓舞人心。

OK, we're looking for the prior site in the next time. So we just go to the wrap up. OK, so this is something I just one thing that bothers me nowadays with students is they don't write anymore.

好的，我们正在下次寻找以前的站点。所以我们就去总结一下。好吧，这就是我现在困扰学生的一件事是他们不再写作了。

OK, people, sit there and think. When I get back to listen to the lectures, I know from my experience people don't get back to the lectures. So this is a hint about studying. And for people who are worried about writing, this would be a very good exercise. You know, after the lecture, just to sit in the corner and write 200, two, 150 words, one concept that you've learned. I hope you learned something today, even though it's the first lecture, you know, I might have said at least one thing that meant something and discuss the concept, you know, maybe read an article.

好吧，人们，坐在那里思考。当我回去听讲座时，根据我的经验，我知道人们不会再去听讲座了。所以这是关于学习的提示。而对于那些担心写作的人来说，这将是一个非常好的练习。你知道，在讲座结束后，只

要坐在角落里写 200 个，两个，150 个单词，一个你已经学到的概念。我希望你今天学到了一些东西，即使这是第一堂课，你知道，我可能至少说了一件有意义的事情并讨论这个概念，你知道，也许读一篇文章。

And put in a bit about what I read from the article or what you've learned as we go on, what you're learning from your teams. Really good exercise just to do a bit of writing but will also help you learn. OK And it bothers me that people don't learn so much. I have thrown up many six papers there that are giving just a little bit about quality. The kind of pretty high level papers that I think you know, pick one if you can, you know pick one and read it and say reading is examinable So you know in the questions I will be saying things like.

并谈谈我从文章中读到的内容，或者您在我们继续前进的过程中学到了什么，以及您从团队中学到了什么。非常好的练习，只是为了写一点，但也会帮助你学习。好吧，让我感到困扰的是，人们没有学到那么多东西。我在那里抛出了许多六篇论文，这些论文只给出了一点关于质量的论述。我认为你知道的那种相当高水平的论文，如果可以的话，选择一篇，你知道选择一篇并阅读它，并说阅读是可以检查的，所以你知道在问题中我会说这样的话。

You think examples from some papers that you've read discuss. OK, so just to be aware of that, I think that's important.

你认为你读过的一些论文中的例子是讨论的。好吧，所以要意识到这一点，我认为这很重要。

And so lecture next week we have a lecture 11:50. Next week two we have the same lecture week 3:00. And we have a lecture on the Friday as well. So we're doing.

所以下周的讲座，我们有一个讲座，11: 50。下周第二周，我们有相同的讲座周 3: 00。我们周五也有一场讲座。所以我们在做。

Thursday and Friday I will keep Bright Space updated as best as I can. I

the room on that Friday I think is in the Tierney building, but I'll let you know next week exactly and again the online hours you know about, OK?

周四和周五，我将尽我所能保持 Bright Space 的更新。那个星期五的房间我想是在蒂尔尼大楼里，但我会在下周告诉你确切的，你所知道的在线时间，好吗？

You're meeting the company next week and we'll be talking to them. You know, here's our search terms. This is what we're thinking about. That's one side. That's the side I want the student to be involved in. And what we would probably want is in about six weeks time, a summary report of the papers somebody has looked at and how they've actually, you know, some summary around whatever it is and we will be.

你下周将与公司会面，我们将与他们交谈。您知道，这是我们的搜索词。这就是我们正在考虑的问题。这是一方面。这是我希望学生参与的一面。我们可能想要的是在大约六周的时间里，一份关于某人看过的论文的总结报告，以及他们实际上如何，你知道，围绕它是什么，我们将会成为。

Building that the plan is that with the company we will actually be going in and giving them courses maybe is a bit strong workshops, just telling them this is technology, this is how it's been used, this is where it's been successful. Just to help because they don't know anything about, you know, they're not in that business, but they're very interested in it. So what I'm going to say to you is.

制定这个计划是，我们将与公司一起实际进入并为他们提供课程，也许是一个有点强大的研讨会，只是告诉他们这是技术，这就是它的使用方式，这就是它成功的地方。只是为了帮忙，因为他们什么都不知道，你知道，他们不从事这个行业，但他们对此非常感兴趣。所以我要对你说的是。



If you add yes so this you will have to get value. This is now getting started on this project now.

如果你加上“是”，那么你将不得不获得价值。现在这个项目已经开始了。

OK. The opportunity House of us that we got, the three of us, we are taking on a postdoctoral researcher, but they won't be here until probably start summer. And the opportunity I see for Ye is one that it's a very practically based masters project and it gets you started. It gets you started now and moving it gets you into a company to at least meet people. The may or may not be opportunities that's not you know, but you never know when you're working with a company.

还行。我们三个人得到了一个机会，我们正在接受一个博士后研究员，但他们可能要等到夏天开始才会来这里。我看到 Ye 的机会是一个非常实用的硕士项目，它可以让你开始。它让你现在开始，把它搬到一家公司，至少可以结识人。这些机会可能是也可能不是你不知道的，但你永远不知道你什么时候在一家公司工作。

On something that can help.

在可以提供帮助的东西上。

And when we're doing the workshops that you would be involved in the workshops as well, because that would be important I think for you to be able to stand up and present, but also again to get involved the other group of people that will be involved in us, which won't be particularly particle G would be doing is.

当我们举办研讨会时，你也会参与研讨会，因为我认为这对你来说很重要，因为你能够站起来展示，但也要再次参与到将参与我们的另一群人中来，这不会是粒子 G 会做的特别的事情。

We're going to have patients, what we call it public patient involvement

with foreign attackers from the healthcare point of view.

我们将有患者，从医疗保健的角度来看，我们称之为公众患者与外国攻击者的接触。

And from the PPI side, we're actually going to have ordinary people from the community who are interested in this will be somewhat involved in the project as well. So it's a nice angle that it's another thing that you will learn about over and above in the practical initiative. So what I'm going to say to you is if you're interested, I want to acvi do not want a temp HCV one to two pages CV. If you have any background in the healthcare side, that would be nice to see. You don't have to have at all, but I'm also interested in your results from the first semester.

从PPI的角度来看，我们实际上会让社区中对此感兴趣的普通人也在一定程度上参与到这个项目中来。因此，这是一个很好的角度，这是您将在实际计划中学习的另一件事。所以我要对你说的是，如果你有兴趣，我想确认不想要一到两页的临时 HCV 简历。如果您有任何医疗保健方面的背景，那就太好了。你根本不需要，但我也对你第一学期的成绩感兴趣。

OK. And I won't be gone. It'll be we'll have to look just and we'll probably talk to a few of you, whatever. OK. So if you can have that in, there's a bank holiday on Monday. So we try not to work and but maybe by Tuesday evening if you can have to meet just directly to me and just, you know, CV for MSC, how many students are eating one or two that I'm not taking a huge amount because I suppose even when I'm looking at master students further down, you know, I don't know how many I'll end up having.

还行。我不会走的。我们得看看，我们可能会和你们中的一些人谈谈，不管怎样。还行。所以如果你能做到这一点，周一有一个银行假期。所以我们尽量不工作，但也许到周二晚上，如果你能直接见我，只是，你知道，MSC的简历，有多少学生在吃一两个我没有吃很多，因为我想即使我看着更远的硕士生，你知道，我不知道我最终会有多少。

Four or five. But yeah, there's no reason why I can't take a couple of students. And sorry, but I did say as well, we do see that.

四五个。但是，是的，我没有理由不带几个学生。对不起，但我也说过，我们确实看到了这一点。

After this part of it that we look at, is there a piece of software that's something so that you're actually getting. So that's not just about research and literature review, the whole project isn't going to be about that free, but I give the opportunity from an academic point of view.

在我们看完这部分之后，有没有一个软件可以让你真正得到一些东西。因此，这不仅仅是关于研究和文献综述，整个项目不会那么免费，但我从学术的角度提供了机会。

And can you tell about the product was what your voltages, which they don't have the price, that's the point. They just want to learn about technology and neighbours care, OK, we just want to find out. So if I was looking at you see we haven't sat down with the search terms, but it's really about.

你能说一下产品是你的电压是多少吗，他们没有价格，这就是重点。他们只是想了解技术和邻居的关怀，好吧，我们只是想找出答案。所以，如果我看着你，你会发现我们还没有坐下来讨论搜索词，但它确实是关于的。

How technology enabled care is being used in homes or can be used in homes.

技术支持的护理如何在家庭中使用或可以在家庭中使用。

So this is a business energy, yes. That's just an example. Yeah, the math example again is just an example. Yeah. So I have a very different question. So what if I don't want to be involved in the research part, but like, I have certain experience in the healthcare department. So like, is

there anything else I can help you?

所以这是一种商业能量，是的。这只是一个例子。是的，数学示例只是一个示例。是的。所以我有一个非常不同的问题。那么，如果我不想参与研究部分，但就像我在医疗保健部门有一定的经验一样，该怎么办？所以，我还有什么可以帮你的吗？

So when I, we're actually going to advertise a position for research assistant slash postdoctoral research and I will only be taking on one and like that's certainly with the Masters you'll be able to apply for that background in healthcare. OK. So let's give that availability because I'm not, I'm not into research, but I am into that kind of work. So yeah, that's verified in the middle of the that's a piece of software you should look at and say whether it's good quality.

因此，当我，我们实际上要为研究助理斜杠博士后研究做广告时，我只会接受一个职位，就像硕士一样，你将能够申请医疗保健背景。还行。所以让我们提供这种可用性，因为我不是，我不喜欢研究，但我喜欢那种工作。所以是的，这是在你应该看的软件中间验证的，并说它是否质量好。

I spent at least an hour yesterday evening putting in information to a form.

昨天晚上我花了至少一个小时将信息放入表格中。

And.

和。

It was I was saving, but I wasn't reading the error message. I was my phone. There's an error message possible. Anyway, what actually happened was when there was a narrow on the page which removed all of the information I put in.

我正在保存，但我没有阅读错误消息。我是我的手机。可能存在错误消

息。无论如何，实际发生的事情是当页面上有一个狭窄的页面时，它删除了我输入的所有信息。

Another lesson, of course in the app to just keep clicking, save and there's anything in the field anyway. I just, I could have cried yesterday. Like I went home late to work on it to get it done before I came in today. I don't like it. I don't know, I'm quitting and then said no, I'm not putting it. Yeah, there will be, but why aren't you sorry, I'm yeah, I'm not. I'm not feeling a bad day here, but like as part of your dissertation, you won't have to do research anyway.

另一个教训，当然是在应用程序中，只需继续点击，保存，无论如何，该领域都有任何东西。我只是，我昨天可以哭。就像我回家很晚才完成它一样，在我今天进来之前。我不喜欢。我不知道，我要辞职，然后说不，我不放。是的，会有的，但你为什么不后悔，我是的，我不是。我在这里并不觉得过得很糟糕，但就像作为你论文的一部分一样，你无论如何都不必做研究。

So I already have a project, so I already have a project and I'm already in talks with my tech for that. For that, but just for work experience I just wanted to be part of it, OK?

所以我已经有一个项目，所以我已经有一个项目，我已经在和我的技术进行谈判了。为此，但只是为了工作经验，我只是想成为其中的一部分，好吗？

Route keep me updated. You're following me around and everything. Are you saying have you project as well? Yes, OK Do you use with?

路线让我了解最新情况。你跟着我到处走，什么都跟着。你是说你也有项目吗？是的，OK 你用吗？

I'm going with Mike, my teacher. No.

我要和我的老师迈克一起去。不。

OK, I just didn't have care. No, it's not. It's about testing software testing with the AI.

好吧，我只是不在乎。不，不是。这是关于用人工智能测试软件测试。

That's why my question is like because the AI and everything is no code, low code environment is there. So how is it going to affect the testing department and everything? So yeah, that's what I mean.

这就是为什么我的问题就像因为人工智能和一切都没有代码，低代码环境就在那里。那么它将如何影响测试部门和一切呢？所以是的，这就是我的意思。

OK, very good.

好的，很好。

Projects I should say, but if you are interested in.

我应该说的项目，但如果你有兴趣。

And we'll see as we go along if there's something, but we are actually advertising it, which will be a research system.

我们会在前进的过程中看到是否有一些东西，但我们实际上是在宣传它，这将是一个研究系统。

Or a post office.

或邮局。

OK, I got formed from last night.

好吧，我从昨晚开始就成型了。

So it'll be like it come out. It asked me in 2 weeks time, Has it been like sometimes let's put up. That's right. And if it has accepted too. Sure.

Yeah. Thank you. I'll probably send it to your class anyway. Yeah. OK. So any other questions? So right now you just need that CD and the semester result, this CV and the semester results and that, like the whole thing is you want to be on healthcare. The site isn't going to depend on whether you have healthcare experience, to be honest, because it really is about doing a literature review. OK. So I'm just interested, but I'm interested to see as well what people haven't had.

所以它会像出来一样。它在 2 周后问我，有没有像有时让我们忍受一样。没错。如果它也接受了。确定。是的。谢谢。无论如何，我可能会把它寄给你的班级。是的。还行。那么还有其他问题吗？所以现在你只需要那张 CD 和学期成绩，这份简历和学期成绩，就像整个事情一样，你想在医疗保健上。老实说，该网站不会取决于您是否有医疗保健经验，因为它确实是关于进行文献综述。还行。所以我只是感兴趣，但我也有兴趣看看人们没有的东西。

OK, how many people actually have you? How many people in the class actually got projects now?

好吧，实际上有多少人拥有你？现在班上有多少人真正拿到了项目？

You're doing one with two.

你正在做一个与两个。

Oh, Megna, OK.

哦，梅格娜，好的。

It's on healthcare, yes. And you have one as well. I'm actually in between talking with my English, OK And I want to ask you something. I have experience like not directly related to healthcare but health insurance. Yes. So does that come? Yeah, that was baby. Yeah. I don't want some people know. It's kind of the terminology and things can find the nationalist anything from the back row.

是的，这是在医疗保健上。你也有一个。我实际上在用我的英语说话，好吧，我想问你一些事情。我的经验与医疗保健没有直接关系，但与健康保险有关。是的。那么那会到来吗？是的，那是宝贝。是的。我不想让一些人知道。这是一种术语，事情可以从后排找到民族主义者。

OK, great. So I'll see some of you later. Many of you will I see in the afternoon.

好的，太好了。所以我稍后会见到你们中的一些人。你们中的许多人将在下午见到。

OK, you'd be bored with your brains on the Thursday. OK, great. We'll see you later.

好吧，你会在星期四对你的大脑感到无聊。好的，太好了。我们稍后再见。

OK, but from the internationalization?

好的，但是从国际化？

OK, so Leroy is a Research Center funded by our government. So science through Science Foundation Ireland. We're about 250 researchers in Liro. We're across the country. So I think it's 12 institutions that actually belong to the euro now. So all I suppose I would say and people who are academics like me.

好的，所以 Leroy 是一个由政府资助的研究中心。所以科学通过爱尔兰科学基金会。我们在 Liro 有大约 250 名研究人员。我们遍布全国。所以我认为现在有 12 家机构实际上属于欧元区。所以我想我要说的是像我这样的学者。

You are teaching within CSIS. We do our research within Liro and we do our administration partners works out within one or the other, but it's a really important



你在 CSIS 任教。我们在 Liro 内部进行研究，我们的管理合作伙伴在其中一个内部进行研究，但这非常重要