Week 1

**Researcher 1** 00:02

Very good. All right. So how have you been getting on? Oh, I should introduce sorry. We've got Researcher 3 on the call. So [Researcher 3]'s, our colleague from from Northumbria who is collaborating with us on this project and been working with for for a long time. So this projects kind of come out of work that [Researcher 3] and I have been doing around IoT for for quite a few years now.

**Researcher 1** 00:26

And [P1] is one of our participants who works as a research software engineer at the University.

**P1** 00:35

Hi, nice meeting you.

**Researcher 1** 00:38

Yes, did you maybe haven't you had much luck with the with the probe? I know that it's, we've had various reports of problems from some of the participants and [Researcher 2]'s working on a fix, but wondered how you'd, you'd got on.

**P1** 00:51

Yeah, so what happened was, when I got home, I tried to connect with my laptop. And it was a bit of a struggle, because the access point would kept disappearing. And I would have to press the, you know, the little button again, and, and then at some stage, it gave me ESP something or the other instead of the access point name, but then it came back again. So that was a bit of a faff and I couldn't sort of reproduce the same thing in there. Eventually, though, I did manage to connect. But it just gave me a screen with no data in it, it kind of started where the current time was. So I didn't know how to get to the other. So this morning, and then I kept forgetting. But this morning, I remembered, and I switched it off took out the SD card, and had a look at it on my computer. And then I thought, Oh, I'm gonna write something to just visualise what I see, then it's easier to look at. But then I thought I didn't have time now. So I asked my son to do it. And he forgot. So I just complained at him. But he wants to write, he wants to learn R and I suggested he writes, does it in R if he wants to write, write R, and maybe create a shiny app, or shiny app to visualise the data, or I could see it on a screen or something like that. So we haven't done that yet, because his memory is worse than mine, despite the fact that he's probably 40 years younger than me. But I've just sent him I said, go do it. And so, but it's been it's been on and it seems to be running fine and recording the data. But yeah, like I said, I haven't really looked at it, because I wanted to visualise it in some way. And I haven't gotten around to that.

**Researcher 1** 03:01

Okay. Yeah, sounds great. I mean, that yeah, that sounds consistent, I think with what other people have found with us. Sounds like I think [Researcher 2]'s been making good progress on that one, right, where there's, it's struggling to pull the data off the off the storage, I think to show

**Researcher 2** 03:21

I found a significant bug with that, that I am most of the way through fixing now. And there's a couple of other bits that will be fixed along the meantime too.

**Researcher 1** 03:36

But but we encourage hacking. If you want to. If you can do something with that data, or your your son can do with that something with that data, then we would we will be genuinely excited to see what what you can do with it. But then hopefully, maybe by the end of the week, we will be able to come around and push out an update on to the devices so we can you can access it as intended, as well.

**Researcher 2** 04:09

And if you need any, if you want any, any tips or slightly, I think it's fair, I don't know. Like, to me, it makes a lot of sense the format, but I haven't written it with particularly the intention of other people like using it, but I'll happily give some support if necessary.

**P1** 04:30

Yeah, I just had a quick look this morning and it made sense to me. I mean, it's everything per line like you said. It is for all the sensors or whatever sensors are switched on. Yeah, so and it's JSON. So that's very simple. So yeah.

**Researcher 1** 04:54

All right, fantastic. So I know we talked a little bit about this last week, but I wanted to just to get on tape for our data sort of tell us a little bit about why you were interested in the project and what it was that made you volunteer to participate?

**P1** 05:12

Um, oh, well, I'm really interested in IoT in general and this kind of stuff. Like I said, I have a few ESPs really lying around here at home and I've even got a what is it called? The Raspberry Pi that's on the internet that's on the International Space Station, Astro Pi. And so this one, for instance, I 3D printed the case and it's got all the sensors in, and so on. So its just something that I'm interested in myself, and I saw when I saw the project, I thought, well, this sounds interesting. If I can contribute, I will

**Researcher 1** 06:04

Right so that's great. I'll just say hi, [P2]. How are you doing? Just introduce, because you weren't met me and [Researcher 2], but you won't have met [Researcher 3], who's the third part of the project team who's our collaborator from from Northumbria. So [P2] is obviously one of the other participants who's working as a KTP manager at the University.

**P2** 06:34

Hi, [Researcher 3].

**Researcher 3** 06:36

Good, thank you. Thanks for joining.

**Researcher 1** 06:39

We were just having a chat with [P1] about how she's been getting on with the Data Probes. I know that there's been some teething problems with, especially with getting the data off there. And I know that you've had some of those problems. [Researcher 2]'s making progress on fixing some of them. But I was wondering how you how you'd gotten on with it, or whether you'd managed to get anything off it yet?

**P2** 07:02

I haven't got anything off it yet. It's travelling religiously with me. It is here in my hand. But to the point that I went out to dinner with us the other night and then I told the people where we were having dinner. So I better explain this to you, this is what it is and this is why I'm doing it and they're all very interested. So yeah, I'm, it's gathering data. It's certainly lighting up every now and then but I've still gonna no joy with the interface at all with the visual.

**Researcher 2** 07:36

I think we know what the problem is with that and I think we'll be coming

**P2** 07:41

Because my well, the laptop at work at the minute, I think has been removed from the system. So I went to download Firefox just to see if I could. And I couldn't even get on to the sort of shared software thing. So I tried using a Kindle to connect to it. But obviously, that's your back to the same issue that you've got. So I'm really keen to see the data.

**Researcher 2** 08:12

Tell us more about taking it to dinner. That's that's, that's an interesting,

**P2** 08:16

Well put it in the inside pocket of my jacket, we got invited to friends on Friday night. And I had it in the inside pocket of my jacket. And as we sat down, you know, after dinner, we everyone sat in a kind of social setting as you do, then people would put their phones to the side, but they're still around. So as they're going off a cigarette breaks and that they're obviously going to have a little peek at their phone. So that's when I'd already said to the host, look, I've got this device. This is what I'm doing. So then I said, Well, if I had my phone at the table, I'll have this at the table as well. So I put it on the table next to me, which immediately sort of people like, Oh what's this. So interesting conversation around what we're seeking to get, you know, and I said, Well, it's just trying to shake hands with whatever's going on here. And hopefully, we'll record those interactions, you know, so that's it, you know, nobody's identified or anything like that. But it sparked an interesting conversation. Which similar to the one where I'd said about, I'm not going to name it because there's one next to me but our Amazon supplied listener in the corner.

**Researcher 2** 09:29

In that you you were telling us about that you thought some advertising about was it precision farming?

**P2** 09:36

Yes, it was. Yeah. We'd had a conversation about a project that I was working on at the time, which was using artificial intelligence in precision farming, and then got a pop up advert for something very similar and it was like this is crazy. Now we still don't, let's not you know, but the coincidence is way too high. Notice I have a lot of my stuff is quite open, I guess. Yeah.

**Researcher 2** 10:09

Oh, just to say we are you think you must, you would have missed US saying we're recording?

**P2** 10:14

Actually you're recording it? Okay.

**Researcher 1** 10:17

Think you got a warning when you're entering. Yeah. So it's good. Yeah. Good to sort of recapture that that kind of conversation that we'd had last week. Yeah. So, I mean, in terms of sort of reactions from the people who at dinner did anybody sort of anybody have like a negative reaction? Or was everybody sort of fairly comfortable with that?

**P2** 10:35

Not as such. I mean, there were more. You know, the way it went wasn't funnily enough around the ethics of other sort of concept of intrusion in that manner. They were much more interested in the fact that I got myself involved in any sort of experiment, and how, you know, what, what was it all about? And then they did have a bit of a chat around the social, the social side of it. And, you know, sort of not exactly the ethics, but it was sort of, you know, I said, Well, that's why I'm telling you, I said, I've, there's switches here, I can turn the thing off entirely if you're not comfortable with it, but it's not picking you and as individuals. And it was, as I said, it was more like, Oh, do you do you do this kind of often, you know, it's like, Well, this was the first thing like this. I've done. So yeah, just interesting.

**Researcher 1** 11:25

It's etiquette, I suppose. Isn't it that sort of etiquette of sensors and devices?

**P2** 11:33

Yeah, there is, [Researcher 1]. But on the other hand, as I said, I mean, when the dinner was finished, everyone had put the put their mobiles on the table. And nobody says, Oh, by the way, my device might be listening to what you're saying. So there's a kind of a, you just let it sail through. But once you say, Oh, I've got something that's actively doing it. And yeah, I guess it changes a bit, but it didn't, it didn't on Friday.

**Researcher 2** 12:02

And do you think you would have had the same? Do you think that's partly because of the way that it like is? Like if it was like a tight, it was much smaller? Say it was as small as a key fob or something?

**P2** 12:16

I think, you know I don't know, I think what would have been really interesting if you if you took the same exactly that concept. I think if you'd gone into the room with, say, one of the old Olympus digital recorders. As everyone started talking and just clicked record. It'd be interesting to see what the response would be to that. But no, there was there was I don't think, if anything, the very nature of this, by the way it looks, I think, immediately does get people to sort of go whoa, you know, what is that? If it was a key fob, I don't know.

**Researcher 3** 12:56

Yeah I'm wondering, What do you take it to dinner again, if you went to the same place? Or would you feel like yeah. Would it be in the middle of the table? Or do you put it by the side

**P2** 13:04

I'd put it to the side, it probably came to I had a meeting in the Devonshire today. So as I go to the meetings on campus, I throw it in my backpack as I'm going to the meeting. And logic being that the light sensor is going to my mobiles in my back pocket. So it's getting the same sort of feedback there. But when I sat down, I got my notebook out and then I got that out and put it on the table. I said, Oh, I should just say, you know, so I mean, and again, I guess I do this sort of pre pre explanation now every time because if you pull some any device out and just put it on the table, and don't mention it, somebody's gonna go what is that? So, so yeah, so I had a meeting with one of our IT guys actually with [anonymised]. He's one of our researchers. And so he's just more interested in anything who's Oh, that's interesting. But yeah.

**Researcher 2** 14:08

Slightly strange request, but if you feel comfortable to do so, when at any of these situations, could you mind taking a quick photograph in

**P2** 14:19

Yeah I've got no problem with it. I've got no problem whatsoever, you know, and funnily enough, we did talk about that when we picked it up. And I should have thought about that on the Friday. That any obviously, with a photograph once you're in at work. I'll have to, I'll say, Look, I'm taking the picture to show it.

**Researcher 2** 14:38

Yeah, no, absolutely. No, no, I don't mean to cause any, not to cause any social.

**P2** 14:44

Exactly, you know how it is. If somebody says, I don't like having my image, that's fine.

**Researcher 2** 14:51

Even if it's like sat up against like a, I don't know, just picture of your plate plus the... I'm quite a visual guy, I'd kind of quite interested in that sort of, how we communicate what we've done with the project.

**P2** 15:07

I'll show you in it's little beacon position in King's Gate as well, because it sits, it sits with my little array. So I've got my like my phone's charging, and that's charging next to it, you know, happily sit next to each other next to my laptop. So yeah, thank you. No problem.

**Researcher 1** 15:22

How about you [P1], have you taken it out and about or had any, gotten any reactions to it from people?

**P1** 15:30

I took it along with me to work yesterday. But I know people would ask me about it. Because I usually have strange things on my desk. So it wouldn't be out of the ordinary for me to have something like that on my desk. But I don't think anybody really saw it. So I haven't had any comments made about it no.

**Researcher 1** 16:06

Yeah, all right. Well, actually, that takes us on to another question I had about the other devices that you have, and your kind of experience with with this type of thing. And you've alluded to a nameless product that you own as well, [P2], so what for both of you, what is your sort of experience with this kind of connected product? You know, Do you own a lot of these things? Is it something that you engage with quite a lot?

**P1** 16:35

Well, I I have a smartwatch, which I'm not wearing at the moment, because it was actually a recall. I'm just waiting to get my money I can buy another one. And like I said, I've got some things in my house and so on that I've played with on and off. Yeah, so I mean, it's just interesting to me. I would, yeah, sorry, I forgo now, what was the question?

**Researcher 1** 17:15

The other devices you own and your experience of, you know, internet connected products?

**P1** 17:21

Yeah. Um, yeah, well, like I say, I'm just interested in all kind of just, I'm not really doing anything with the information that gives me at the moment or so I am just interested in seeing it, I would, because I think it's mostly time. Otherwise, I would like to probably try and organise my house to benefit from from this stuff, you know, whatever it is, use of light or use of, you know, which rooms would get the most use, what times of day and stuff like that, I would be interested to see things like that. But I haven't really done anything with with the information I get I've just the other thing I would like, for instance, to do is with plants to water them automatically and to, you know, based on the temperature and humidity and stuff like that. But again, I've I've built the basic things, and then I never get around to making something of it that works on a long term. My experience with a lot of these things are that they are not reliable. So I used the HP after the ESP 8266s that I mentioned before, and I found that after and I also had a little web server on it and I built this, it was just like a self watering, it was supposed to be like a self watering plant thing with a with a moisture sensor in the ground. And then when it when it was dry, it would switch on the little pump and water the plan. And, but then it also had the web server so that you could at any point go and look at the readings that you had on this thing. The problem was just it would run for a couple of hours and then hang so it would just die off until you would have to manually reset it. I also had a few other sensors around the house at one stage but I had the same thing. They were unreliable, I had to go and reset them every now and then they would run for a while and then I would just lose them. And I mean so that means that you can't really put them in an inaccessible place because you'll have to, you won't be able to get to them, you know, if you want to hide them away or something like that. Now this, this the one that you've, yours, of course, has been running, it seems to be running fine. Except I don't know what the problem with the yeah, whatever the problem with the web interface is, well just having had a look at the data quickly literally I just opened the files, it seems to carry on recording. So at least it's not sort of hanging off for a while or just shutting down after a while.

**Researcher 2** 20:44

Can I tell you a secret? It works by continuously rebooting. That's the That's the way.

**P1** 20:51

Okay. Because I saw the red light comes on every now and then. And it's not a quick one, you know? So I was wondering if that was what you did? Yeah.

**Researcher 2** 21:02

Yeah. So essentially, it goes for sleep for a minute. But when it starts up, it's as if it's booting again. And then essentially, so essentially, it reboots every single minute. Yeah.

**P1** 21:13

Alright. Yeah. Cuz I was chatting to some, you know, I mentioned [a colleague], I was talking to her about it a few months ago, and she went and experimented with it. And and she managed to get it to, it's sort of hibernates, I don't know you kind of put it to sleep. And then it also uses very, very little power. Because she actually typically of [her] she went and measured the current it was drawing and everything. And I haven't done that. But that to me was was quite interesting, a possible solution to, yes, Like what you've done here. So yeah. So I thought about it but haven't done that yet.

**Researcher 1** 22:03

We were having a conversation [Researcher 2] and I the other day, after some of these problems started emerging about how there was there was a point at some point when technology just started working, it used to be quite normal for for everything just to break constantly and that you know, your word processor crashed and you lost a couple of hours work that was was just normal. And at some point that stopped happening. And this is sort of been a been a reminder actually of how impressive that is. The fact that so much of the tech we have just works.

**Researcher 3** 22:34

Switching things on and off just works and I think [Researcher 2] is probably he just put if you can programme it to do that constantly it will never break right

**Researcher 1** 22:43

So how about you [P2]?

**P2** 22:50

I'm certainly not as techie I'm the opposite end so I'm surrounded by various sort of competing systems due to the family that's living it so there's there's three Amazon devices covering the ground floor of the house so all they're networked together obviously that's the main living room the room where I'm sitting now my daughter's bedroom which is behind me. So they give pretty good voice coverage of the ground floor then up into the bedroom there's a new one that's up there. Again, that's an Amazon device. Then directly above me and in the room behind is two Google devices. So you've got two different nets running. Then there are variously there's an Apple smartwatch lying in front of me just now it's my daughter's. Through a mad splurge of wealth I bought a I think it's a Siemens I've got I've got a tumble dryer that is Internet of Things. It's the most pointless thing I've ever bought, in terms of why on earth I would contact it with an app to see if it was nearly done when I'm in Newcastle. I don't know.

**Researcher 1** 24:21

What does that do is that it you can set it going remotely and check on its status

**P2** 24:26

Check on its status and it'll let me know if, it's a condenser so it'll let me know if it's water reservoir's full which, unfortunately, it's not capable of emptying it so it'll mean I have to come home and set the which was what I discovered when I got back from work anyway. So it's just a gimmick. You know, it's you can you can change you can alter its running cycle and things like that. I disconnected that to a little while ago from the home network because, I've bought a, is that me I've got a feedback loop. I bought a different router for that for the home system. And you can you can see it was it wasn't a major draw but it was it was just adding to the sheer weight of things that are on there because there's also two gaming systems on there and then Smart TV so there's a number of things that are connected and then of course this as well the laptop.

**Researcher 2** 25:26

Can I ask about like, so you use the Hey product voice interaction quite a bit. Do you have a good sense of how does it work when you go from room to room? Do you know have you got a good sense of who you should be addressing in different rooms? Or

**P2** 25:45

yeah because the well one the trigger words are different the Google devices as I said they're in a, it sounds like I'm in a mansion I'm not, above me is there's two bedrooms above me which is where my sons basically reside. And once you're into there, you're in the Google territory so that's

**Researcher 2** 26:07

so you've never used the wrong you never you never do you never do a hey Alexa when

**P2** 26:11

Yes I have yeah, I've done that upstairs asking the Google device and obviously got no reaction. So it's like oh, but we do and I have tweaked so you can put routines in you know, they've become more open on the Amazon side so you can start developing small routines for oh, there's a couple of smart plugs as well. So I've started trying that and you know, it's not HAL yet. It doesn't say good morning properly, but I've got a it does, you know change its greeting and things like that. So still have to call it Alexa.

**Researcher 3** 26:51

What have you got on the smart plugs?

**P2** 26:54

Just lights. Yeah, yeah, I've just got basically in a difficult to reach plug. Its got a spark plug rammed on top of it and then tucked behind the fridge.

**Researcher 3** 27:06

Yeah, highly practical.

**P2** 27:07

Rather than reaching in behind it. So yeah. And they're just on routines that rarely tell it to go on and just go you know, it's got timers.

**Researcher 3** 27:18

Yeah. And the timers are run through one of the Google or Amazon devices.

**P2** 27:24

Yeah. Amazon's yeah. So I've got like, a morning thing is, you know, 7:45 does a Metro update and local news, stuff like that. So it's just as you're walking through the house a creature habit, so most of the stuff is coming on as I'm moving around. I've got no motion sensors or haven't connected to motion sensors.

**Researcher 3** 27:50

And are you the most teched up person you know? Or are you kind of connected into lots of other people who are doing similar things?

**P2** 27:56

No my son's certainly more teched up than me. Out of my friends. I Yeah, probably. I don't know. Yeah. Because I've always liked to play about with stuff. So that's it. I mean, one of my friends he bought a we had a big discussion because he bought a Sonos music system. And while I loved it's sort of net that it threw out it was a very closed environment. And I was much more for even though I opted down the Amazon route because the the quality of the speakers for the price was better. My son's very pro Google because it's more flexible to add more to it and tweak it a little bit more but you're still in a closed ecosystem. So we haven't gone down quite down to [P1]'s route whereby sounds like you're very open in the stuff that you're using [P1] so it's like I'm not at that dev level sort of thing. It's more just wanting stuff to work consistently for us

**Researcher 1** 29:01

your your muted [P1] I think we were getting feedback off you before

**P1** 29:12

Sorry, do you still have feedback

**Researcher 1** 29:16

no I think we're good

**P1** 29:19

Now I was saying I also have a couple of three Alexas around which we use for my son uses for music while we are in the kitchen or while are we're running on the treadmill and we use it for and I've also got a Ring doorbell which is connected to Alexa. But the same thing it's also unreliable it just I although I saw on TalkTalk website that more people have complained and it seems that it might be the TalkTalk router. I do have openHABian here and a few of these cheaper lights which is well they run off Alexa or openHABian whichever I can switch them on and off. And I a few years ago I did set them up so that when I was away from the house, I could, I think I had a like a scene setup so that the lights would go on automatically. So this sort of when it went when it was dark, and it would go off in the morning and stuff like that. So so I've got a bit of I've tried a few things, but I do have some of that Alexas which are like I said more closed. I would like to go the openHABian way but I've openHABian was I don't know if you guys know that one. It is a nightmare to understand.

**Researcher 2** 30:53

So that's openHABian?

**P1** 30:56

Yeah, openHABian. Just make sure I have its name. I'm running it on a Raspberry Pi. openHABian yeah. Now I'm going to the...

**P1** 31:20

Yeah. It's an open source project. Full controlling all your IoT devices in the house. Yeah so openhab.org If you want to have a look at that, so I picked that one because I think I said it was supposed to be more flexible. There's another one. Um, but I have to say, Oh, you the other one also, I think, which I've gotten its name now. Um, I don't know what is also for home automation. I have that running on a Fire at one stage.

**Researcher 2** 32:12

Is it home assistant?

**P1** 32:15

Home assistant that sounds like it. Yeah, I have that running. And I think that one, you could actually download a Raspberry Pi image. But I didn't like that because the image was locked down. So I couldn't go and make changes on the PI itself. It's not locked down. It was just the way they designed it. So I, I went the openHABian way with like as I struggled to get my head around how the thing is supposed to work, I did get a couple of my lights, I've got a 3D printer. So I've got a light on the 3D printer. And the 3D printer also runs a Raspberry Pi with OctoPi on it, which I can use to start and stop printing. I can monitor the print with the camera. And then I can use openHABian to switch the light on inside the 3D printer cabinet so that I can see what's going on. So I can monitor it remotely. But Yeah, so those things are more open source Kind of which is Yeah, I would prefer going that way. Alexa is a bit annoying at some times because she doesn't understand my accent all that well all the time but

**Researcher 1** 33:34

I'm wary of taking ... I'm just gonna put you on mute [P1] sorry, because... I'm wary of taking up any more of your evenings than we'd promised to. But I wondered we just touched on something interesting there, which I think you've both talked about openness or closeness of a system. And I wonder if we can maybe finish up just by asking, asking how important that is to you, I suppose and what you know, do you see pros and cons in openness and closeness of those systems?

**P2** 34:15

I've always I see why it happens. It gives you the the tools or the equipment that are bought in that will say that they're compatible with will have to meet a certain standard. And then we'll come back to this. You know this continuity thing that we're talking about before. I get that. I don't like it when you're tied into Apple being a perfect example when you're tied so much into an ecosystem that you can only use one product. I'm dead set against that. So I much prefer using stuff where at least you've got a broader choice. And I'm not technically well probably I don't know if I'm technically minded enough but I certainly don't have the time to tinker to a level where I could really open up. I'd love to. But I don't think I'd ever really I just want stuff to work. So yeah, I'm kind of slave to it, but then sort of quite often find myself grizzling against it as well.

**P1** 35:26

Yeah, I think I have to agree with [P2]. Because I also want stuff to work. But, and I don't always have the time to play around with it to make it work, which is why openHABian I find frustrating because I spent loads and loads of time to try and figure out how it works. And I still struggle. But I do enjoy building this, I do enjoy obviously building this stuff and see that it works. And, and then if it's unstable, it sort of goes by the wayside unfortunately. If I could get it to be stable, so I should probably do what [Researcher 2] did and build my plant watering thing again, but have it reboot every now and then. So because then I will actually start using it. So I think that is the disadvantage of the open source stuff. But I am also dead against the closed things. I don't do any Apple things. Because I I'm just and also I'm in principle against the the sort of pay for style, I don't know why you want to pay for that, because Apple has a lot to do with style and fashion. I'm not particularly into style and fashion. And I'm definitely not prepared to pay for it if I don't get any benefit from it. I'm not gonna live up to the Joneses type of person, so then it hasn't, that doesn't attract me at all, I'd rather spend my money build building more stuff that doesn't work for long term, than try walking around with an Apple. So yeah, so I I think my stuff that kind of works with relatively little issue would be the would be the Alexas. I do for instance, one thing I tried, I wanted to set up a Raspberry Pi running Kodi, I don't know if you guys know Kodi. So that is a home entertainment system. And then you can play your videos from anywhere in the house via the internet. So I ended up putting that on a Microsoft Surface just because I was struggling with Kodi, which is also against my principles to do that. But I ended up doing it just so that I have something that works. So yeah, I think it's a bit of a play off between when you need something to work, you sort of have to buy into some closed things, but I would much prefer the open source thing. So if I can find something that has like a commercial backing, but it's still open source. You know probably something like Red Hat or Ubuntu or something like that. Where the the the the applications are still open source, then I would much rather go for that.

**Researcher 1** 38:42

Alright, thanks a lot. I think that's bringing us to about eight o'clock that and and I don't want to take up any more of your evening. Was there anything else? Anything that you wanted to ask us before before we go, because I think we'll be in touch some time later in the week with an update. We'd love to hear from you about anything, you know, anything you do try and get the data off those devices as well. But was there anything you wanted to talk about just before we go?

**P1** 39:15

No, no, I don't have any questions at this time. And I'll let you know as soon as I get something nice to show hopefully

**Researcher 1** 39:23

It was really nice to hear from you. Thank you for coming along. I think it's been really interesting. And we got some from both of you got some really useful input. And I'm excited to see about what we can talk about once you actually get access to the data and we get the study running in full flow. So thanks a lot for that. Yeah, we'll be later in the week and and see you next week.

**Researcher 3** 39:52

Looking forward to those data visualisations they sound incredible.

**Researcher 2** 39:55

Probably better than mine.

**Researcher 3** 39:58

Well, I don't know [Researcher 2], it's a competition

**P1** 40:07

I'll let you know as soon as there's something