I1: I see. From your point of view, what is sustainability in terms of software?

P: That's a very difficult question to answer.

I1: Take your time, take your time. I'm working on the definition that's ...

P: So as to whether or not the software itself is sustainable, I would guess that that means that it would have to be in some repository that can be accessed so that it can be recompiled, um, by other people, um, updated so that - It is very difficult for software to be truly sustainable once it's fixed. For example, um, changes in Java brought in new security constraints, which meant that, um, things that were legal in Java 1.6 are no longer legal in 1.7, alright? So, therefore, the software, um, that was written to 1.6, and been just compiled in 1.6, wasn't truly sustainable, unless you could access a source code and update it to work with 1.7.So, sustainable is not sort of, um, you just put it in a box, and put it on a shelf somewhere. It has to be an active thing and that also means that for software to be sustainable, you really need somebody - a group of people to answer questions on it. Because, otherwise, I don't think there's any software that is documented to the extent that somebody can pick it up and without a huge amount of work go and to self-edit it. You need a small, small group of people who understand what it's up to.

I1: Um, which attributes of features the software has that makes you believe that it is sustainable?

P: Which software?

I1: The ones you were working on.

P: Um ...

I1: Uh, or, or, which software, let me ask that again. Um, software that you believe to be sustainable, overall. Which features, or attributes they must have.

P: Well, as I said, it must be in some public, or, ideally publicly accessible repository that it must be reasonably well-documented, but the chances of it documented - being properly documented are zero. It, the, um, although, although it's in the repository, there must be some way of them compiling it and just checking it out and compiling it and getting, getting a thing that runs. Um, you need a, an ongoing group of people who are developing it, so this is, this is about it. I don't think it's sustainable, just putting something in a box.

I1: Okay. Okay, so it's the list you've said before.

P: Yeah.

I1: Okay. Regarding the software you've developed, what sustainability consideration?

P: Um ... Yes, for some of it, no, for others. Uh, for example, we develop work flows and those work flows are, um, published publicly and anybody can download them and change them. And there are sort of more roots to asking questions about them. The idea of Pyth and Note will definitely, the sustainability of that was a deep consideration. Um, for project02, itself, in my opinion, no, because the person who designed, most of the design, um, enjoyed writing their own thing, rather than using publicly available libraries. I should mention that before, one of the, um, considerations for sustainability is, is as far as possible, not to write the stuff for yourself if that already exists. So use pre-existing libraries, like the patchy commons, and so on, or just the ordinary Java libraries. Don't write your own stuff. So ...

I1: Um, was it sustainable from the beginning, or it became a consideration after some time?

P: Um, at the moment, we're trying to make project02 much more sustainable. So, yes, that's, um, a feature that is now becoming more important. Um, it's as - project02 has always been in publicly available repositories, but it is because of the a ten - a tendency to write your own, rather than of some people to write their own versions of things. Um, then it wasn't always a consideration, so ...

I1: Okay, um -

P: It very much depends on the programmer.

I1: Have you worked on any projects that were not sustainable, and if so -

P: That were, that were not sustainable?

I1: Yeah.

P: Um ...

I1: And were there any consequences of it not being sustainable?

P: Sustainable, um, I think almost all projects could have been sustained. Um, most were - are you asking if they were sustainable, or sustained?

I1: Uh, sustainable. Have you worked on any projects that were not sustainable?

P: Yes. Um.

I1: Okay.

P: You want information about them?

I1: Were there any consequences of it not being sustainable? You can tell me a little bit about that.

P: Um ... it not being sustainable ... There is, because of the way that funding works, projects are funded, have traditionally been funded for a specific amount of time, uh, during which they have to achieve set goals. And to no considerations given after the end of that project is what happens to it. So, yes, I've worked on projects, um, where basically, at the end of it, it - they - the main deliverables of the project were just sort of thrown away. Um, I can give you the name of a project, uh, but, um.

I1: Yeah, yeah, it's alright, it's going to be on my ...

P: Oh, alright, well, one of the most recent ones was the project03 project, which was, um, a collaboration to do, um, data mining, trying to create, to auto generate data mining, um, work flows, um, based upon the characteristics of the data. And the vast majority of the work on that was thrown away because, um, not only was it not sustainable, it really should not have been sustained. It, it basically met the, um, deliverables of the project, I think. It got very good project reviews, but then that was it. End of project, throw it away.

I1: Nonsense.

P: So that is quite common that, um, little consideration is given to the sustainability of, um, the software, or, indeed, the data, or, you know, keeping the data available. It is produced by projects, and at the end of the projects, they're just thrown away.

I1: Okay.

P: That's the, that's the nasty reality.

I1: Yeah. That's all I have for today.

P: Oh, okay.

I1: Really supposed to be quick, terrific.

P: Okay.

I1: Okay. Thank you very much. Uh, Person01 will be right here with you, okay?

P: Oh!