

“Hello Edith,” says John “I have been thinking about project 573 and setting down some ideas.”

“Good. What have you got so far?”

“Well,” says John, perhaps a little hesitantly, “I have got this.”

John shows Edith a document with the following text.

∫251 Have you vomited?

∫253 I have vomited.

∫254 I have not vomited.

∫381 Do you have pain?

∫382 I have pain.

∫384 I do not have pain.

∫385 I have pain always.

∫386 I have pain sometimes.

∫387 I have pain, but it is not very much.

∫389

∫391 Where do you have pain?

∫573 Shall we use system ‘five seven three’?

“I notice that you have used circled digits,” comments Edith “is that because there is less chance of confusion with numbers used as numbers as such, nothing to do with this system?”

“Yes.”

“Good idea. What is that symbol at the start of each line? It looks like an integral sign from calculus.”

“Well, actually”

“John” says Edith somewhat disapprovingly.

“Well, I needed a base character and there is not one specially for localizable sentences at the moment, so I used a character that is available, chosen so as to try to minimize any interaction with other uses of the character. I thought that it is a sort of summation, using the numbers together to indicate a particular localizable sentence, or maybe I just needed a symbol that I thought would not lead to clashes.”

Edith looks at John.

“There was the alternative of using a specially designed symbol, but the problem then is that it would need to be encoded using a Private Use Area code point. It would look good in documents produced using a font of our own, but if someone else wanted to use the sequence of characters to send a message or even to just produce a list, then unless the person were using our font or one compatible with it then there could be problems, the display just being either of the .notdef glyph of the font that is being used or even worse the display being of a glyph that someone else has mapped to the same code point in another font.” replies John.

“Could that happen in reality, the other glyph that someone else has designed for some other purpose?”

“Well, it could. How likely is it, I do not know. I suppose that it might be less likely with some parts of the Private Use Area than for others, but who knows. The thing is, using the integral sign and the circled digits has a capability for a graceful fallback display in a computer system without needing any special font from us. True it depends if that computer system has a font with glyphs for the integral sign and circled digits and if the operating system picks up on that, but, as I say, there is capability for a graceful fallback display.”

“Going back to the integral sign, what are the implications of using a mathematical symbol like that out of its proper well, usual, context?”

“Well I thought that the use of an integral sign with circled digits is so different that it is unlikely to cause a clash with any usual usage”

“Granted, yes”

“Software-wise, well, instead of having a unique base character to specify absolutely that a localizable sentence is being specified, if an integral sign is encountered then the software needs, if I may express the computer function in a human thought manner, the software needs to ask ‘Is this integral sign trying to signal a localizable sentence, or is it just part of ordinary text?’ and test for that by looking at the next character to check if it is a circled digit. It is not as if we would produce software that would automatically treat the integral sign as if it were the start of a sequence for a localizable sentence, the software would

always test the next character, or maybe the next three characters before acting. The test is not absolute, but it may work satisfactorily in practice.”

“May?”

“Well, yes, ‘may’, this is a research project and I am not going to say that it will work satisfactorily in practice. Saying that it will might sound more confident, but I deal in results and evidence and so, at the moment, I say ‘may’.”

“Indeed, yes, you’re right. But why the circled digits rather than the tag digits?”

“Well, the circled digits are all in the base plane, as is the integral sign, and I thought that it might well make things far easier to get started, and avoid unnecessary obstacles that might delay implementation, to use only characters in the base plane.”

“Well, you have used that approach and you have made progress, so that is good. Yet please keep the choice of base character under review.”

“Yes.”

“What about localizable sentences that are not part of project 573, localizable sentences with longer code numbers. Have you any thoughts on the base character for those?”

“Well yes, I thought that I would use the integral sign, the same as for project 573?”

“Will that cause confusion?”

“Well I hope not, it should not do. The thing is, it could perhaps cause more confusion if there are two base characters. If there were two base characters and someone used the wrong base character then there could be confusion in that way. So, well, using the same base character may cause confusion, but, well, hopefully it won’t do.”

“Yes?”

“Well, I was thinking that it would be a good idea, not essential, but maybe useful in some way as we proceed, that we avoid double digits always, not just in project 573, but that we do allow repeated digits within the code number.”

“How would that work?”

“Well, in the example that I showed you for project 573, if you could have a look at that again please, there is no entry for three eight three, so I thought that codes where the first digit and the third digit are the same as each other could be the start of longer codes, maybe have each digit no more than twice in any one code, at least to start.”

“Why that restriction?”

“Well, I was thinking. In relation to project 573, whilst eventually it would be good to have localization done automatically using electronic equipment, to get things going, and maybe always in some situations, sometimes the numbers need to be passed manually, perhaps by writing them down. It occurred to me that as, in project 573, as each digit is never used twice in any code, if two people, maybe a nurse and a patient, are using the system then each could have nine plastic counters each with a single digit on them and

they could set up a code number on a piece of paper then turn it round so as to present it to the other person in the conversation, then reuse the plastic counters when needed.”

“Yes.”

“So, extending that to a conversation where a larger selection of localizable sentences is available from which to choose, if each person had eighteen counters, two for each digit, then if we keep the codes so that there is never more than two uses of any digit in a code number, then those eighteen counters would be enough to signal any localizable sentence in that set of localizable sentences.”

“Ah yes, I follow what you mean. Good.”

There is a pause.

Edith asks “What about the localizable sentences that have a symbol, how would that work?”

“Ah, if an end user chose to have symbols displayed then that would be done by using an advanced format font. It is an established technique for displaying a glyph for a ligature such as ct, so that is a matter of having a font that has the glyphs for the symbols within it, with the font also having information tables to specify the details of each substitution.”

“So does that mean that the symbol for the localizable sentence ‘It is winter.’ does not need its own code point?”

“That is correct when using this system of specifying using a base character and a sequence of other characters, whether those other characters are circled digits or tag characters or whatever. Certainly in earlier tests and indeed in earlier thoughts about encoding then the glyph for ‘It is winter.’ did have its own code point, and indeed the glyph for the localizable sentence ‘It is winter.’ does have its own code point, a Private Use Area code point, in the font that I used to produce the cards that were used in the performances at the Poetry through the Language Barrier events, but that is just for convenience at the moment.”

“Ah. Good, good, it looks like you are making good progress.”