[SQUEAKING]

[RUSTLING]

[CLICKING]

MICHAEL SCOTT ASATO CUTHBERT: Hello. Within the music21 corpus, there is another subcorpus, which is a pretty useful one. And that is the corpus of the complete chorales of JS Bach. And really thankful to Margaret Greentree, who contributed all of these before her untimely passing. So within music21, let's go ahead and import corpus because that's going to be pretty useful.

And we can have-- within the corpus, there's something called corpus.chorales. And see that there? And there's something called the corpus chorales iterator which will go through this. And so we can say for chorale in the corpus chorale iterator, print chorale.metadata. That's the data about the data-- the data about the piece. And we can print its title.

And it's going through. And it's a little bit slow because it's actually parsing them along the way as it's going. That'll take some time. So you can go ahead and interrupt that while it's going. So not every chorale has four parts. The size we want to do-- if len chorale -- I'll learn to spell it-- len(chorale.parts) not equals 4, we'll continue. Then let's do this. Let's print chorale.metadata.title.

And we'll say that we just put a colon at the end. And then for i in range 4-- 0, 1, 2, 3-- p equals chorale.parts (i). Print (i) and then the length of p.flat.notes. Recurse would be a little faster, but we'll have to do that.

And we'll say the end of that is-- we'll put a comma space, something like that. And now we can go through-- oops. We'll interrupt that. I think it's probably useful to print a new line afterwards.

And we can see how the various parts are. And you could imagine that you can go through this and play with it and have some interesting things on which parts have more notes and which parts have fewer notes and so on.

Some of the things that we could do with a complete corpus of chorales are look at the types of motion, Where do climaxes appear? Where can we find repeats? What are the kinds of time signatures that appear in chorales? basically all the things that you guys did in problem set 3, which is just wonderful, or problem set-- yeah, to talk about what you can do with the corpus chorales. So this is the chorale corpus.

If you want to quickly go through and just find particular ones, you can say that the return type is something else, filename. And this will allow you to pass them in to the converter.

If 11 in chorale. RealChorale equals corpus.parse chorale.

And there are all the chorales with 11 in the name. So these are just some things that you could be working with. And you can even-- this is a small enough number, we can show each of them. And it'll take a little bit of time, but we'll start getting to see all the chorales in a piece.

Our friends at Intel, bum bum bum bum, have created a tutorial on how you can use Bach chorales and work through the iterators and explore the data and begin looking on emotion recognition and so on from the Bach chorales and even do artificial intelligence and plot various things-- we'll show you this in a second-- and pitch throughout time. Very short video. Thanks for watching.