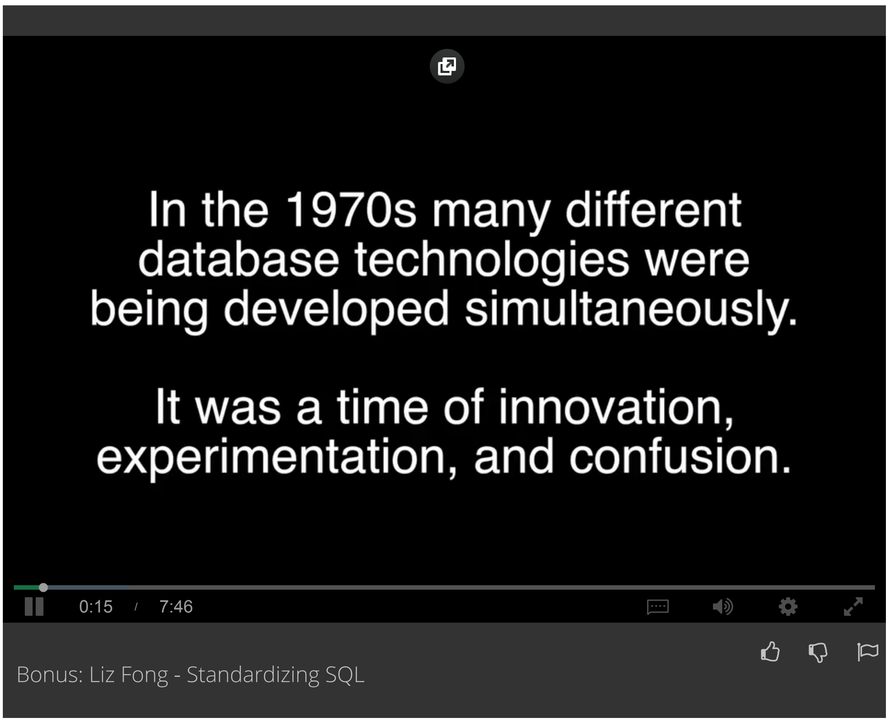
Lecture Materials

Bonus Materials

Assignment



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And there were product that are coming growing from wild. And then we realized that, hey, I want to buy a product. What kind of a feature do I need? And one of the things that I have done is to feature analysis. We have about half a dozen of product and the standardization are really building a consensus. We brought from a matured technology that are ready to be standardized where people say, do I buy IBM or do I buy Oracle or shall I buy a cheaper one? This kind of a decision started emerging. And the selection of a--, I mean, how many variety of application you can build on top of a software foundation, what I call database management system, is too varied and so you want to have some sort of a standard so that your application can work on different platform. We work with files, and we call it the file system. The files were hierarchical. There was the IMS, the IBM Information Management System which is a tree structure and the debate was going on whether there should be a tree or a network or flat file, and we're still debating whether the data have self-describing tag. And later on we know them as the metadata, and now people call it the schema. The Database System Study Group come up with a reference model or a specification for a minimal functionality of a database management system. In order to be a database management system, you want to be able to store data, retrieve data, modify data, organize data, delete, manipulate data and it becomes a spec. And during that time we initiated a birth of ANSI group. It's now called INCIT. The ANSI is American National Standards group, and it's called the X3H2 of which Don Deutsch and people like Len Gallagher all participate in that. That group is called the Data Management Language. In order to standardize anything, you realize that you can have a lot of light bulb, for example. You can have red light bulb, white light bulb, the only thing you want to standardize is when you want to talk to another person. Communication interface or a area where both of us have to understand a common vocabulary or whatever, so the only standardization of a software system is not the capability but a language. A relational database at that time was IBM, Chris Date and he's talking about normalization. He started talking about flat file and he called it a table and it's a very easy concept that everybody understand. In order to retrieve a table, you say "SELECT" from a column such as such, from a table of employee, and there was the birth of a simple query language. Testing part is also a very important aspect of, when you adopt the standard you want to certify that the product conform to such and such version of ISO standard, the JTC one, whatever it is. That gets to be if your, otherwise, your app won't work. Your application. Let's say, you build a student course record and no matter--, you got Oracle, you got Sybase or Microsoft SQL, you want your application to work no matter what. And that's what the marketplace wanted to go. The user, of course, Oracle or Microsoft buy my product. The Oracle will say buy my product, and in the procurement you say I want to be compliant with SQL. And so, you have to have the conformance testing certificate and we have the NVLAP. It's a laboratory that certify and give you a validated product list of, here are the list of products that has been validated that they conform to it and you can buy from that list. But there is a requirement, this is strictly user. You're buying because you're paying the money not us. Timing is everything. You can standardize I think too early or you drive a lot of innovative concept away because people say, hey, there's no way for me to get into your market because you already decided, and even though it's not very good, I won't get into that business, so you kill innovation. And if it is too late, you miss the opportunity, you get too many variety of things coming up and the choice is too much. But, of course, SQL is one of the success stories of that list we have.

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