



AD: Podcasting monthly from the shores of the Delaware River in Trenton New Jersey, this is Tech NJ... TechNJ... TechNJ... TechNJ... Powered by NJOIT - the New Jersey Office of Information Technology.

CP: Good day to everyone! I'm your host, Craig Parker, and welcome to season 2 of TechNJ, where we delve into the tech topics trending In the Garden State. Our guest today is Debbie Baliotti, a software development specialist for NJOIT, who is a team leader for Apex development. She also will be the system administrator for the new Apex 5 installation. Debbie has been with the state for a number of years, and has worked on many different projects for many different departments and agencies like Treasury, Labor, Transportation, and Human Services. Safe to say, she has had a great deal of experience here at NJOIT, and we welcome her.

DB: Thank you, Craig.

CP: Now, your current application platform is Apex - what is that exactly?

DB: Apex has a few different meanings in the development world now, but the one that we're using is Oracle's Application Express, or Apex for short, and it's a web-based software development environment that runs on an Oracle database. It's fully supported, and it comes at no additional cost of the Oracle databases. Apex is a combination of languages: SQL, HTML, CSS, JavaScript, jsung (SP?), jQuery, and many different kinds of plug-in components. This sounds very complicated until you realize that Apex is actually a low-code development tool. What that means is Apex allows the easy building of web applications with little or no code at all. At the same time, it also allows more complicated programming if the developers can handle that. These low-code environments can be traced to fourth GL languages and Rapid Application Development, or RAD tools.

CP: Apex uses the RAD methodology - can you explain that a little more?

DB: The RAD methodology was developed by James Martin many years ago, and actually what's more popular now is agile, which is a cousin of RAD, so to speak. Adaptive methods, like RAD or agile, they focus on being open to changes and prototyping. When the needs for a project change, an adaptive team can change very quickly, and they aren't threatened by it. Some of the principles of agile, like early and continuous delivery software, or welcome changing requirements even in late development, are an excellent match with a quick, low-code environment of Apex.

CP: So Debbie, when we say "low-code", does that also mean that the need for coders is less important?

DB: Not at all. What we're finding these days is there so many demands are programmers and developers. So many changes that have to come through, so many complexities because of

the internet that it helps to have a tool that does some of the routine stuff for you. In other words, you don't have to code everything by yourself - there's reusable components that they can just plug in to use, and then they can add the business rules on, they can add, you know, fancy stuff like nice graphics and things like that on, that in the past, it would be like, "We don't have time, we just have to get the basic functionality out there because we're short on time, and we have to get this done cause we have five other projects."

CP: So it's almost like a shell that you could pass on to another coder?

DB: It's more like a structure. It's like, you get a structure to build within, and pieces are pre-made so you can put them in, but then you can add on to the structure to customize it.

CP: What skill set should a coder developer have in order to use Apex?

DB: The basic skill set is PL/SQL or SQL so that they can talk to the Oracle database, and some knowledge of HTML and CSS. Those are the components that really make up Apex. JavaScript is nice to have, but I didn't know JavaScript - I learned it while working with Apex.

CP: So you just needed that basic foundation?

DB: Yes, yes, and I would also say though, we've seen some people who have only had batch backgrounds have a little bit of trouble understanding an interactive application. Usually people with CICS backgrounds can better understand how a web application works, because CICS works in the similar way. There's different stages like a rendering stage, and a response stage....

CP: Where someone who might be a straight cobalt programmer would struggle...

DB: With a batch program, yes - because they don't have those stages.

CP: So what kind of applications are you working on now?

DB: Well, currently our team is supporting JAMS, which is used to create time codes for eCats, so everybody who does eCats and have to put in those codes, managers have to create those codes in JAMS and then we send them over to eCats. That information is also used for billing to clients - to client agencies. We also have WRT, which is a Work Request Tracking Application. We have AIMS, which is an Asset Inventory Management System for the Fiscal Department, and recently we were asked to make modifications to take in the assets from EO225...

CP: For those of you who do not know, Executive Order 225 was issued by Governor Christie, a plan by the state of New Jersey to change how we handle information technology for the state of New Jersey. Part of the plan was to centralized hardware and infrastructure to make it more

cost-effective and efficient. At the same time, software development was changed to move the staff from a remote location back to the departments using the software, so the developers would better understand the needs of the department they are serving. Can Apex handle large applications as well?

DB: Well, here at OIT we've used them for rather small applications. I think the biggest application we've had has two or three hundred users. In contrast, the European Nuclear Regulatory Commission uses it, the City of Pittsburgh, the State of Georgia, on many different applications in foreign countries, and even Oracle itself uses Apex for internal programming. Basically, they eat their own dog food as the saying goes. I have statistics on Oracle - there are over 11,000 projects being done in Apex, and there are over 39,000 applications. Within one week, their Apex applications on their Apex site had over 6 million page views.

CP: Why is NJOIT interested in this platform?

DB: Well, in the past, as I said, we had some imperatives we had to get done in a certain amount of time and we did. After managers see how fast it is and what we can produce with it, they're more interested in using it. You know, we usually developed one application, for example, for fiscal, and then they're like, "Well, we'd like more. We'd like to put more of our stuff into Apex." So, and as I said, it's fast, it cuts the development time, it's easy to learn for many of our developers, and it has reusable components which is something that, you know, is one of the characteristics of the new programming languages. We reuse things like application themes, the page types that we used to build the applications, and it comes with a number of pre-written applications that you can use right out of the box.

CP: Where can other developers learn about Apex?

DB: Well, one of the nice things about Apex is that it's easy to learn for many developers, and that is a great value, but most of that learning comes free. Oracle hosts a free development site for any developer to use to learn Apex, to experiment with it. We often use it to experiment with newer versions before we've actually installed them here.

CP: So, hold on... let me ask. All you have to do is just go to the Oracle site, log in, and they have a password for you to be able to take a class online?

DB: Well, not a class. What you have to do is go to Apex dot Oracle dot com, and you request a workspace. They ask, "Why do you want the work space?", and you could say, "To learn Apex.", and then you have your own environment. I've been running one for 10 years now. It's not meant for professional applications, so you can't set up your own little website that, you know, sells candy or something, but for developing and learning about what the new features are it's a great thing to have. But besides that, Oracle offers an entire portfolio of webinars, articles, tutorials, and a development community to help you. So if you have a question about how to do something you post it, and the people answering the questions are Oracle Apex

development people, as well as other gurus in the environment. So all of these things are a great help to developers, because I know in the past we had a tool and there was no help. You know, we had to try and figure it all out ourselves. Now, there's people to help you figure out problems...

CP: ...sometimes that can be really difficult.

DB: Mmm hmm - in house we help other people. So, right now, for example, I'm helping a group who are relatively new to Apex and, you know, they're running into problems, and they come and say, "Listen - this happened. What should we do?", and we give them help.

CP: So, even in this day and age, do you still find, when you are speaking to your clients, that there's still a lot of people out there not tech savvy?

DB: Well yes, My previous job I worked in audio-visuals, and I used to have to instruct people how to operate a film projector. And it was very funny because, especially women, they would be like, "Oh, I can't do some equipment like that...", and I would ask them, "Do you thread a sewing machine?", and they'd say, "well of course!". You know, cause women sewed, a lot of women sewed, and I said, "Well, it's just like that - you're threading it just like you would thread a sewing machine.". And that made a major difference in their thinking, and I find the same thing with computers that people think that they're like oh some horrible, technical, complex thing, and a lot of times it's like, "No - this is just a machine that does something that you tell it, and so how do you want to do this operation? How would you do it on paper?", and we're just going to replicate that. It's not really as complicated. I mean, there are complicated things, don't get me wrong, there's network things that are very complicated that even i don't understand sometimes. But usually programming, and the creation of programs, is not as complicated as people think. The whole point of software is to help people do something easier, or faster, or more organized, and that's what we sometimes forget. You know, people are like "oh, I have to write another program for those people", it's like, "No - you have to help them do something", and I like to help people.

CP: So, as we go further, with Apex, what do you see in the future with using this tool?

DB: Well, Oracle has supported this tool for the long run because, you know, it's always the question with free tools, is Oracle going to continue to support it. And since they use it themselves internally, and they've committed in writing to supporting it, you know, we're fairly confident of that. But going forward, we... we see that we're going to use it more for OIT now because of the changes in the organization. However, there's a lot of discussion about public-facing applications, and... and we have other departments still that have used it for applications, and they now might have to hire their own people. But within OIT, I was just in a meeting yesterday for the Project Manager User Group, and they were talking how they wanted to have some way to share "Lessons Learned". Well, instantly, I thought of, "Oh - well we could do an Apex application, and... and people could enter their lessons learned and we can share it

with everybody!". So there's a lot of potential to do those quick applications, but applications that will help OIT in the long run.

CP: Don't forget to rate us on iTunes and Google Play. We love to hear your feedback so please email your thoughts ideas and questions to podcast at Tech dot NJ dot Gov. I'm your host, Craig Parker, and thanks for listening.