



Hanselminutes

Hanselminutes is a weekly audio talk show with noted web developer and technologist Scott Hanselman and hosted by Carl Franklin. Scott discusses utilities and tools, gives practical how-to advice, and discusses ASP.NET or Windows issues and workarounds.

## Text transcript of show #125

August 5, 2008

### Accessibility in Web and Rich Applications

In this episode Scott talks to Saqib Shaikh, a developer for Microsoft Consulting Services in the UK, who is also blind. They chat about accessibility in Windows, on the Web and in the next generation of Web Applications written with AJAX and Silverlight.

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**Lawrence Ryan:** From [hanselminutes.com](http://hanselminutes.com), it's Hanselminutes, a weekly discussion with web developer and technologist, Scott Hanselman, hosted by Carl Franklin. This is Lawrence Ryan, announcing show #125, recorded live Wednesday, August 6, 2008. Support for Hanselminutes is provided by Telerik RadControls, the most comprehensive suite of components for Windows Forms and ASP.NET web applications, online at [www.telerik.com](http://www.telerik.com). Support is also provided by .NET Developers Journal, the world's leading .NET developer magazine, online at [www.sys-con.com](http://www.sys-con.com). In this episode, Scott talks accessibility with developer Saqib Shaikh.

**Scott Hanselman:** Hi, this is Scott Hanselman and this is another episode of Hanselminutes and I'm here on the Microsoft campus in Redmond, Washington. I'm actually sitting down with Saqib Shaikh, a developer from Microsoft Consulting Services in the UK. So, you've come all this way and I just happen to be in Redmond. Thanks for taking the time to sit down with me.

**Saqib Shaikh:** Hi. Thanks for allowing me to be here.

**Scott Hanselman:** We have a shared interest in accessibility and you are blind, you're a blind developer.

**Saqib Shaikh:** Yes.

**Scott Hanselman:** And you have a vested interest and also a professional interest in making accessible computer experiences.

**Saqib Shaikh:** Yeah, that's correct.

**Scott Hanselman:** Do you focus mostly on websites or do you focus on rich client or all things accessible?

**Saqib Shaikh:** All things; though we don't do accessibility as part of my main job. It's obviously in my mind and everything I do whether it's websites, Win Forms, WPF, Silverlight.

**Scott Hanselman:** Now, this might be kind of a remedial question for you and I spent a lot of time using screen readers and different applications for accessibility, but let's start at the beginning for people who may not know what is the experience for a blind developer working in Windows whether it be an XP or Vista. How are you interacting with the machine?

**Saqib Shaikh:** Okay. So, the traditional way is keyboard and mouse and monitor app. The first thing people don't realize is that you can't use the mouse. From an input perspective, everything is done via the keyboard and as a Windows developer, I'm sure you know that Visual Studio is just awesome for keyboard shortcuts. In terms of output then, it's

speech output so there's a program in the background monitoring what's happening and verbalizing that in synthetic speech.

**Scott Hanselman:** Is there one particular application that's like -- I know there's a narrator that comes with Windows, but I assume that's quickly tossed aside?

**Saqib Shaikh:** Yes, very quickly. I use a program called JAWS. I should say this category of programs is called screen readers and I use one called JAWS which is quite popular.

**Scott Hanselman:** Now, do applications have to target JAWS? Does Visual Studio as a Windows application has to do something to make it more accessible to JAWS or is JAWS just extra clever?

**Saqib Shaikh:** JAWS is pretty clever. It hooks into a video chain and sees what's going to the monitor, but what applications can do especially for custom controls is what they call programmatic accessibility, so that's allowing another program to interrogate your UI and see what's there.

**Scott Hanselman:** What would I do to my application to make it more accessible? To let someone peek in and see what's happening?

**Saqib Shaikh:** It's all about the semantics, adding meaning to your UI, thinking beyond the 3D rectangle. In a website, you're going to do things like meaningful HTML markup. With AJAX, there's a new standard called ARIA, which means you put some tags around your other HTML. In WPF and Silverlight, there's the System.Windows.Automation namespace, lots of goodness in there and with Win Forms, it's MSAA, Microsoft Active Accessibility. Unfortunately, there is no one answer.

**Scott Hanselman:** But it is about semantics. I just kind of started thinking to myself do we want what is on the screen described? Really not. You don't really care what's going on in the screen from a syntax perspective like, "Hey, look! He just put up a toolbox." That's not interesting to you.

**Saqib Shaikh:** It's interesting that something appeared. I mean it's interesting that that thing is a toolbox and how that's presented to the user can be presented in different ways. The great thing about the programmatic accessibility is that it goes beyond just the screen reader and blindness. That's the same thing that the Windows Vista speech recognition uses and if you're a tester, it's what you would use for automated UI testing.

**Scott Hanselman:** Oh, so the thing that JAWS is doing to interrogate an application is the exact same thing that someone who's doing automated UI testing would be using, the same hooks.



**Saqib Shaikh:** Yes and that's why I think it's really great. I mean .NET 3.0 WPF, they're calling it UI automation, which doesn't directly mean anything to do with accessibility just for any reason you'd have to automate the UI.

**Scott Hanselman:** Really? So, there's nothing specific to accessibility built in a WPF? They just simply make everything automatable?

**Saqib Shaikh:** Exactly. So, you write your classes for your custom controls to make them automatable and yeah, that achieves accessibility, but that's not what they call it.

**Scott Hanselman:** Interesting. By not calling it that, do you think it's an easier sell?

**Saqib Shaikh:** I think so. I think it almost getting through the back door. It's like I think in the past testers we're a bit like, "Ooh, we have to use accessibility to test," or the hope is it will get broader adoption.

**Scott Hanselman:** Well, there's that sense that adding accessibility just by virtue of the fact that I use the word adding, it's this additional thing we have to do. It's not bad enough we have to do Firefox and IE and Opera, now we have this other screen reader that "nobody uses" and now we think of something like JAWS or a screen reader as being another target.

**Saqib Shaikh:** You've definitely got to use testing and that's not something most developers are interested in, but I guess organizations do that, but as developers, yeah, it's just you're writing a class if you're writing C# or whatever code and it's just writing a bit more, so every time you create a custom control, you write a bit more code to give it semantics.

**Scott Hanselman:** So, if I were going to write an application that brought up a table, JAWS is going to understand that I brought up a table of let's say stock prices.

**Saqib Shaikh:** Yes. So, if you're using a standard data grid or whatever, a standard control, it will recognize that.

**Scott Hanselman:** Do you care as a vision impaired, blind person, about sorting and rearranging column headers and this kind of thing?

**Saqib Shaikh:** Yeah, definitely.

**Scott Hanselman:** Okay, so you're going to customize UI as much as anybody to your taste.

**Saqib Shaikh:** Yeah.

**Scott Hanselman:** Now, what about a chart? What does a chart or pie chart mean to you?

**Saqib Shaikh:** Again, if it's got nice semantics, it means nothing, but if you could represent semantics, for example, if you're having a pie chart which is a custom control which contains child controls of slice, then if each slice had semantic information saying its label and its percent, then that's really useful.

**Scott Hanselman:** Ah, okay, and then in WPF, I would add that bit of semantics?

**Saqib Shaikh:** Yes.

**Scott Hanselman:** I would decorate those?

**Saqib Shaikh:** Unfortunately, you can't just do it as an attribute. There are these automation peer classes you have to write, but they're not that complicated. You implement various interfaces depending on the type of what UI pattern it is.

**Scott Hanselman:** And then of course the added benefit or the additional benefit is that now I can test my pie chart for semantics.

**Saqib Shaikh:** Exactly, yeah.

**Scott Hanselman:** Interesting, interesting. Now, when creating a website, a lot of people have this I call it checkbox accessibility where the government has mandated that you must follow. In the US it's called Section 508.

**Saqib Shaikh:** Yes.

**Scott Hanselman:** If you're in a large organization or if you're a bank or whatever, your site must be accessible. It's the web equivalent of the wheelchair ramp. Just as a wheelchair ramp might be something that a building owner might not embrace. Oftentimes, the boss of a website is not going to be thrilled about the idea that he has to support accessibility. How do we avoid that kind of attitude?

**Saqib Shaikh:** I think you've got to target the different types of people, so I think your exec, your big decision maker, to him really the law mandating is a really good thing because it makes it into a fire on their desk which really needs to be put out and if it's not a fire, it's not going to get put out, but when you're talking to developers and so forth, yeah, there's the human part of accessibility but there's also the idea that everyone is different. You might be a teenager wanting to send text messages without turning on the lights. You might be the businessman who wants to notify his boss that he's going to be late while he's holding on to the rail in the train. You could be hurt your back and you're lying in bed and there's no computer you can use at the moment. So, it's



thinking of everyone is different and you can't predict what scenario different people are going to use software in.

**Scott Hanselman:** Also, within each disability, whether it be deafness or blindness or a physical disability, there are gradients.

**Saqib Shaikh:** Yes.

**Scott Hanselman:** One is typically not 100% able-bodied or completely disabled just as someone is not entirely blind.

**Saqib Shaikh:** Yes.

**Scott Hanselman:** Now, would that mean that you would appreciate like a high contrast option or would a blind person appreciate really, really large fonts or flashes or what other kinds of things could one use?

**Saqib Shaikh:** So, the semantics really takes care of people around speech input or speech output or some agent interpreting the software for them, but you're right. There are things like not only using color for people who have color blindness and high contrast for people with partial sight, which are equally important.

**Scott Hanselman:** I've used JAWS and actually there's a really great organization in New York called the Associated Blind of New York that can provide QA people of low sight to help you do this kind of stuff and they taught me a lot about how things like JAWS work, but I haven't seen a lot of applications that sit in that middle place, I mean there's regular Windows, the way Windows comes on the one side of the spectrum; on the other side of the spectrum, there's JAWS which is things are being read to you. Are there applications that will say strobe the monitor when an email shows up? Would that be a useful thing to someone who can seek shapes and colors?

**Saqib Shaikh:** I'm not sure, but the type of thing you do get is everything ranging from someone who just got, you know, maybe they're elderly and just wants to point the mouse at things that has a little square which magnifies all the way through to somebody who has a full screen magnifier which magnifies the entire screen up to 32 times and can replace any color on the screen with any other color of their choice and all crazy stuff like that, you know, track the mouse and the keyboard and really amazing stuff.

**Scott Hanselman:** Now, how often do you get stuck I'm curious? How often do you find yourself in a situation where you just have to basically start Alt+F4ing.

**Saqib Shaikh:** More than I'd like, but certainly that does happen a few times a day just because

something's not accessible or JAWS is obviously doing a lot of low level manipulation, so sometimes things go wrong there.

**Scott Hanselman:** What is that like? I know I'm not asking the question right, but I'm trying to understand are these state machine issues where maybe you got caught in a series of pop-ups? Like just today and I've had LASIK eye surgery so even though I had very poor vision growing up, I can see fine now, I got caught in some kind of a thing where we had 48 pop-ups and Internet Explorer went absolutely bonkers and I was basically Alt+F4ing windows as fast as they could come. What happens when that happens to you? Surely, you've been caught in a pop-up trip.

**Saqib Shaikh:** Definitely, not so much pop-ups but generally when things get out of control, you can minimize everything with your Windows M key and then Alt+Tab through what's there. Well, sometimes you just go to the Task Manager and kill iexplorer.

**Scott Hanselman:** Yup. So, you do the same thing.

**Saqib Shaikh:** Yes.

**Scott Hanselman:** The idea of going to Task Manager and figuring out who's taking up the most CPU and just blowing them away is a common thing, it's universal.

**Saqib Shaikh:** Yes.

**Scott Hanselman:** That's an interesting question. Can you walk me through what that is like? I know that I right click on the clock, I hit Task Manager, I find the header for CPU and sort.

**Saqib Shaikh:** There are always a million ways to do things. For example, running taskman.exe or pressing CTRL+Shift+ESC will take you straight to the Task Manager.

**Scott Hanselman:** It will?

**Saqib Shaikh:** Yes.

**Scott Hanselman:** CTRL+Shift+ESC. See, I knew you would know all the hot keys.

**Saqib Shaikh:** Yes, many years of learning all this. From there, it's a list so within a list you can use your first letter navigation to jump to a particular thing and all the shortcut keys to end task, etc.

**Scott Hanselman:** How do you tell it's the one using the most CPU because Task Manager moves underneath you? It's always updating itself.



**Saqib Shaikh:** Yes. In Vista, they actually now gave the column headers tab focus so you can tab to the headers and left and right between headers and press spacebar.

**Scott Hanselman:** Really?

**Saqib Shaikh:** Yes.

**Scott Hanselman:** That must have been a good thing. I didn't know that.

**Saqib Shaikh:** Before that, JAWS has a virtual mass and you had to use the virtual mass to virtually left click on the header.

**Scott Hanselman:** Really?

**Saqib Shaikh:** Yeah, which is only three or four keystrokes, but...

**Scott Hanselman:** But it adds up.

**Saqib Shaikh:** Yeah.

**Scott Hanselman:** So, you can tab around and JAWS is telling you that you're on a column header.

**Saqib Shaikh:** Exactly, yeah.

**Scott Hanselman:** You hit space, you do your sorting ascending or descending, and then you blow it away with ALT+E+Enter.

**Saqib Shaikh:** Exactly.

**Scott Hanselman:** Interesting, interesting. I've got an application right now I've been writing called Baby Smash.

**Saqib Shaikh:** Yes, I've been reading about that.

**Scott Hanselman:** Have you tried running Baby Smash? Probably JAWS would not like it I don't think.

**Saqib Shaikh:** I must confess I haven't actually run it because...

**Scott Hanselman:** It takes over your system, you know.

**Saqib Shaikh:** Yes.

**Scott Hanselman:** All your hot keys and I was trying to think what a low vision baby would do with something like that. I think if it laughs and it giggles, it will say the letter that you press on.

**Saqib Shaikh:** It's not something I would much of, but I think it would be great because I have a friend who had a blind baby and his favorite thing was

to sit a foot from the TV and watch the speaker because of the really bright colored balls. From what I've read about Baby Smash...

**Scott Hanselman:** Yeah, that was very interesting. I could make a low vision version of Baby Smash. Because it's in WPF though, yeah, I could do a number of things. That's very interesting.

**Saqib Shaikh:** Yeah, just lots of bright colors.

**Scott Hanselman:** Now, a lot of times people run applications that will basically sniff your website and tell you whether or not it's accessible or not. How valuable are those kinds of analyzers?

**Saqib Shaikh:** I think they're really valuable as long as you realize they won't get you all the way there. Maybe they'll get you 60-70%, those are numbers I'm making up, of the way there because certain things like not have -- the biggest problem with websites is people don't put their meaningful alt tags on their images, you know.

**Scott Hanselman:** I'm guilty of that on my blog.

**Saqib Shaikh:** But, yeah, 10 years, 15 years on, that's still the biggest problem and analyzer can be really good at that, but then there's always the human factor. Just taking something as alt tags, if you were to automate at least put something everywhere, then you will end up with the space in Gifs that everyone has...

**Scott Hanselman:** Oh yeah, I love that.

**Saqib Shaikh:** People will sometimes put the word spacer there and there's nothing more annoying. I'll leave the site if they do that.

**Scott Hanselman:** Really?

**Saqib Shaikh:** Yes.

**Scott Hanselman:** It's something that JAWS starts saying "spacer, spacer, spacer, spacer."

**Saqib Shaikh:** Yes, every single spacer. Yes, sometimes you should have empty alt tags and sometimes the alt tags how descriptive should it be, so yeah, the automator will get you so far but humans always go the rest of the way.

**Scott Hanselman:** How often does something that someone implemented on a website in order to make it really pretty or really accessible from a visual perspective kind of cause you problems? The example that I'm thinking of is that for many years, I was using a tool that would syntax highlight code samples and basically just litter the code samples with tags.



**Saqib Shaikh:** It depends how it's done. I was actually talking to Scott Gu about this.

**Scott Hanselman:** Oh yeah? He uses code samples as images.

**Saqib Shaikh:** Exactly.

**Scott Hanselman:** Which is a horrible idea.

**Saqib Shaikh:** I talked to him about this and, you know, people were complaining that it wasn't indented properly and all the rest when it was just an HTML, so he went to images which is a really good solution except I couldn't read any of his tutorials. We had a really good laugh over that.

**Scott Hanselman:** That sounds like kind of a sad laugh though. I mean do you think it will change?

**Saqib Shaikh:** Oh, he definitely said that the solution is now he's providing links to the actual source code.

**Scott Hanselman:** Oh okay.

**Saqib Shaikh:** So, in line, it will still be images, but there will be links to source files.

**Scott Hanselman:** Now, the solution that I came up with because I didn't like my markup being littered is now I just have a pre-tag. I just put the code straight in the pre-tag, I closed the pre, but then I have a JavaScript utility afterwards that looks for all the pre-tags and then basically has a little engine on the client side that will syntax highlight.

**Saqib Shaikh:** That's really clever.

**Scott Hanselman:** Well, what does JAWS -- does JAWS care when JavaScript starts running around and manipulating the DOM like that?

**Saqib Shaikh:** Not really. It has problems with it updating the DOM underneath it, but there's this phenomenon called behavioral job scripture, just like what you said to put class attributes on things and then after the fact in your on load, the JavaScript goes and injects things at the DOM.

**Scott Hanselman:** That's exactly what I'm doing. So, I have a pre and then I'll name=code, class=C#.

**Saqib Shaikh:** Exactly, yes. That's exactly how the whole JavaScript thing, so that would work perfectly with JAWS.

**Scott Hanselman:** I don't know if you read my blog or not...

**Saqib Shaikh:** I do.

**Scott Hanselman:** But if you noticed, have you had any trouble reading my code samples?

**Saqib Shaikh:** No, not at all.

**Scott Hanselman:** Okay, good. Now, I feel better, but you've kept it to yourself that my ALT tags are shoddy at best. So, I will fix that.

**Saqib Shaikh:** Yes and I think in dasBlog, in the RSS feed, it has these really weird images at the bottom of every item.

**Scott Hanselman:** Oh, okay, yeah. Those really weird images are actually one-pixel GIFs, I'm sorry, and what they are is they are aggregator bugs. Basically, when you hit an item, dasBlog phones home to let me know that someone read it.

**Saqib Shaikh:** Ah, so they should have an alt="" empty string because then it will just be ignored because... yeah.

**Scott Hanselman:** One time I visited CNN while I was doing some studying of accessibility. I did a view source and I noticed that they had a tiny anchor tag that I had never seen before that said "skip to main content."

**Saqib Shaikh:** Yes.

**Scott Hanselman:** What is this about?

**Saqib Shaikh:** Some people get fanatical about this. I don't use it. It's so that you can just press enter on that and it will skip you past all the navigation bar because something like JAWS is going to treat your webpage serially. You'll go through...

**Scott Hanselman:** So, it linearizes the entire page.

**Saqib Shaikh:** Exactly, especially today because everyone is using tables and if you have a left cell and a right cell, then the left cell will be read first.

**Scott Hanselman:** Ah, okay. So, then you show up on a [CNN.com](http://www.cnn.com) site and the very first thing that has focus is the skip to main content.

**Saqib Shaikh:** Yes.

**Scott Hanselman:** You just hit spacebar+Enter and then you've moved on beyond all the ads and...

**Saqib Shaikh:** Yeah, exactly.

**Scott Hanselman:** Interesting.



**Saqib Shaikh:** HTML 5 I think will actually have a sidebar to add so that goes back to making it a semantic thing.

**Scott Hanselman:** That's an interesting point that you're bringing up, HTML 5. You've been surfing the web for many years and you've been doing it I assume all this time as a blind individual.

**Saqib Shaikh:** Yes.

**Scott Hanselman:** Have you noticed or do you have a sense, not just in JAWS and screen reader technology improving, but is HTML getting better and easier for you to understand going from a table base layout with one-pixel GIFs to the semantic web, the whole CSS, Zen Garden style of development with DIVs.

**Saqib Shaikh:** I don't know and I don't think so. The one thing to bring in mind is JAWS you could consider as a user agent in its own right. It's going through Internet Explorer or Firefox but it's interpreting the DOM itself. So, as the web has changed, so JAWS has changed to do the best it can to make it a good experience. You'll see this in Zen Garden, the ultimate web accessibility should be but no one does that.

**Scott Hanselman:** That brings an interesting question. I've been playing with this iPhone lately and the iPhone is a little mini-Safari, it's a full browser, but dasBlog and my blog have the ability to sniff a user agent and apply an alternate style sheet basically and not just a style sheet but a complete template. The reason I say that is that when I first started playing with the iPhone, I said I'll sniff the iPhone and I'll return the mobile version of my site.

**Saqib Shaikh:** Okay.

**Scott Hanselman:** That means no navigation, no sidebar, just content, content, content. Would that be the kind of thing that would be appropriate or inappropriate? Should I detect a JAWS screen reader and call that a mobile site and give you the tiny version of my site?

**Saqib Shaikh:** From my point of view, that would be great. However, I was actually talking to some of the accessibility people and because of privacy concerns, they don't pass that information along.

**Scott Hanselman:** So, there's no way for me to tell you, you visited my site?

**Saqib Shaikh:** No.

**Scott Hanselman:** Because I could tell you were blind and then I would discriminate against you by giving you lousy content.

**Saqib Shaikh:** Yes. From a developer perspective, you would, you know, folks could easily say, "Ooh, someone is using the automation APIs. Let's put a HTTP header in," but that's a whole privacy issue.

**Scott Hanselman:** You know, I never thought about that, the idea that it would a privacy issue. I guess it would. I mean I could understand that that might be an aspect of your personality that you're just not interested in sharing.

**Saqib Shaikh:** But also I think if you're going to an insurance...

**Scott Hanselman:** It should be an option at least.

**Saqib Shaikh:** Site to do your online sign up and if someone can tell that you're a disabled person wanting insurance, you know, one example but...

**Scott Hanselman:** I mean there's no deaf people user agent. I don't suppose I would be a blind person user agent, right?

**Saqib Shaikh:** No. There would be speech recognition potentially but not really user agent because it's...

**Scott Hanselman:** But the idea that, you know, we have these senses and some of us have five and some have four, does that mean that we all get our own user agent? Of course not. I mean I can see the argument against that, but at the same time...

**Saqib Shaikh:** I wouldn't want everyone to have so because...

**Scott Hanselman:** Really?

**Saqib Shaikh:** No. I have this crazy idea which isn't happening anytime soon that if all UIs are semantic, then why not have customized user interfaces for whatever anyone understands, likes, prefers.

**Scott Hanselman:** Yeah. I mean I would like to provide the best experience possible.

**Saqib Shaikh:** Yes.

**Scott Hanselman:** And I've got this ability to sniff a browser. If you visit my site on a Blackberry, you get the tiny version and I think that that version would be so much easier for a JAWS screen reader to view.

**Saqib Shaikh:** Yes, I think it definitely would.

**Scott Hanselman:** I think what I'll do is I'll just make it available as a clicking option at the bottom and I'll set a cookie and if somebody hits the site, they



want to stay in the mobile version, then they can do that.

**Saqib Shaikh:** That's cool and I think in the past, having a text only version for blind people is frowned upon, but these days, when everything is coming from the same database, there's nothing too wrong about it.

**Scott Hanselman:** Yeah. I think with the advent of skinning and themeing, I think that the first example that people recognize that not everyone wants to read your 8-point Verdana tiny, tiny point was the advent of those little A-/A+ buttons that sit at the top of the page. I don't know if you've seen this or not but this is the make the font bigger with JavaScript or make the font smaller with JavaScript.

**Saqib Shaikh:** Yes.

**Scott Hanselman:** And, you know, my parents love that.

**Saqib Shaikh:** Cool.

**Scott Hanselman:** My dad uses that. Why shouldn't there be a "click if you don't want to see any of this other stuff," although someone might want to use that to remove ads, of course. I guess that means blind people are impervious to ads.

**Saqib Shaikh:** I guess so, so I get the whole bit frame begin and frame end for the iFrames, but I don't ever get to read the ads, so I get almost the worst of both worlds.

**Scott Hanselman:** So, it doesn't dig into the iFrame? You don't get to see all this Flash ad garbage that we're seeing?

**Saqib Shaikh:** I'm not sure. With Google ads, I don't think.

**Scott Hanselman:** Really? You're not seeing the Google ads?

**Saqib Shaikh:** I get told that there's a Google ad there, but I never find the text from the ads.

**Scott Hanselman:** Well, we could be trying to sell you something very important that you're missing out on.

**Saqib Shaikh:** This is true.

**Scott Hanselman:** Yeah. Actually, all my advertisers have me put alt tags on the ads so you're probably catching those.

**Saqib Shaikh:** Okay.

**Scott Hanselman:** Interesting. So, is it possible though to have a really pretty website that doesn't scrimp on the web 2.0 and the RIA and still be really accessible?

**Saqib Shaikh:** Absolutely. I'm really passionate that I want to be using the same things, the same really lovely user experience that everyone else uses because that is the mainstream web 2.0 world is. As an example demo, I made a world map which was an atlas totally in Silverlight and you could hover the mouse over the different regions and it would show you a flag fluttering in the wind and information about that country and that was all made accessible and keyboard accessible and actually to a blind person, all you'd see is a list box of countries and you might never know that it's a pretty map, but it's the same thing that anyone else would appreciate.

**Scott Hanselman:** Ah. You'll give us a link to that and I'll post that on the site.

**Saqib Shaikh:** Definitely, yeah.

**Scott Hanselman:** If you don't mind my asking, how exactly did you get started? How did you get started in computers?

**Saqib Shaikh:** It's a funny story. I lost my sight when I was 7 and at that point, they decided I was going to spend the year learning Braille and getting up to speed with being blind and on top of that because I had some time left over, they told me to type. I guess I tried all these creative endeavors like drawing and woodwork, but that meant the teacher had to be there. This is all, you know, when I was about 10 or 11 and I eventually got to writing good stories. I really liked making things which other people could read. It meant a lot to me then and that lead to programming when I was about 13 and it all started from there.

**Scott Hanselman:** So, about creation, I mean you want to produce things that other people could interact with.

**Saqib Shaikh:** Yes, that's really how I started and still, it's like I think like many of us developers, it's the creative process and making new stuff which is really cool.

**Scott Hanselman:** Do you think accessibility is getting better? It sounds like you're pretty positive in your thinking that it's just getting more and more accessible.

**Saqib Shaikh:** I'm not sure things are getting more and more accessible, but definitely there's a lot more awareness and getting back to where we started, the laws do help with that, but also I think the world is changing. You have RSS feeds which give you data in XML. You have a lot more awareness of



multimodal interfaces like people are suddenly saying, "Oh, we need a keyboard interface and a touch interface," so to tell them that why not have a voice input and a voice output is two more interfaces, you know, I think technology is helping us to open people's eyes, [ pun intended, ] to the different options and alternatives.

**Scott Hanselman:** Cool. Well, thanks so much for sitting down with me today and this has been another episode of Hanselminutes and I'll see you again next week.