0:0:0.0 --> 0:0:4.190  
Rich Piazza  
I wish I had recorded the previous session because I thought it was. It was a very good one.

0:0:7.370 --> 0:0:15.420  
Rich Piazza  
Turn that off. OK. Alright. So one of the things that I wanted to start with.

0:0:16.740 --> 0:0:28.360  
Rich Piazza  
Jim mentioned the six CSE at the ACM SIG CSC is, is anybody else involved in that? Jim said he's just he's just.

0:0:29.560 --> 0:0:39.80  
Rich Piazza  
Someone who who is a user's, quote UN quote is, is anybody else on the call aware of that or or involved in that?

0:0:41.920 --> 0:0:47.490  
Rahman, Akond  
I served as a reviewer for for 60 SE, 2020 and 2021.

0:0:48.40 --> 0:0:57.70  
Rich Piazza  
Oh, excellent, excellent. Well, between you and Jim, you can tell. Tell us a little bit about it. So so Jim?

0:0:59.120 --> 0:1:1.210  
Rich Piazza  
Why don't why don't you give the elevator speech?

0:1:2.370 --> 0:1:14.40  
Jim Whitmore (Guest)  
Sure. OK. So so I'm I've been a member of ACM, the Association for Computing Machinery, for about 20 years, and I and I, you know, actively, you know.

0:1:16.960 --> 0:1:45.570  
Jim Whitmore (Guest)  
Gather the the journals and things like that. As I you know, as I went through my kind of the business side of my career. But then after retiring, you know, I signed up for the. There's a special interest group on computer science education SIG CSE that I have used and I monitor. It's basically an informal place for people to share ideas. You know, sometimes job postings sometimes.

0:1:45.870 --> 0:2:18.240  
Jim Whitmore (Guest)  
You know, solicit information, and one of the things that I did over the over the past probably 6 to 8 months was I think it in, in the note that you sent out. I had been working on what I call the security, security Engineering Workbench, which is a some tools and some conceptual materials and actually did a posting, you know, wondering if anyone was interested in reviewing the project and on on the Sigcse site, I, you know, got about 10 respondents. And I've gotten about.

0:2:18.800 --> 0:2:42.10  
Jim Whitmore (Guest)  
Three reviews out of that for the tools and the work material, so it's kind of an informal group, you know, and and I do know that, you know, there is a a technical conference from SIG CSE I, you know, participated or you know was part of the audience for one of them online last year. So it's a robust community, worldwide community and maybe.

0:2:42.330 --> 0:3:13.280  
Jim Whitmore (Guest)  
Uh, we can can can can talk more about that. The the things that I will point out again acm.org is is the main website sigcse.org is the is the special interest group website. There's also another group there's an activity for defining computer science curriculum called csd.acm.org and they're actually in the process of a review of the computer science curriculum.

0:3:13.700 --> 0:3:20.600  
Jim Whitmore (Guest)  
And I've offered to be a. Well, I volunteered to work with the security.

0:3:23.70 --> 0:3:43.380  
Jim Whitmore (Guest)  
Basically special not special interest group but but topic area for that to provide some input to that. So within ACM there's you know again it it it's a it's a robust community the security aspect of it is kind of informal but you know I have gotten some interactions with them.

0:3:49.350 --> 0:3:49.960  
Jim Whitmore (Guest)  
Does that help?

0:3:53.390 --> 0:3:53.840  
Jim Whitmore (Guest)  
Good.

0:3:53.500 --> 0:3:59.990  
Rich Piazza  
Uh, sorry I was. I was on mute. That other group you mentioned, CS Edu dot, what was that?

0:3:59.410 --> 0:4:18.260  
Jim Whitmore (Guest)  
Well, see? See, csed.acm.org is actually an initiative in the last, the last review of the computer science curriculum was in 2017. It's basically a joint effort with ACM, IEEE and.

0:4:45.260 --> 0:4:45.990  
Rich Piazza  
That's our point.

0:4:19.340 --> 0:4:49.140  
Jim Whitmore (Guest)  
A triple AI to define a a a common computer science curriculum. And there's there's an effort called CS 2022 X That's basically, you know, trying to put a revision of computer science curriculum and and security is one of the is one of the topic areas. Yeah. So cscted.acm.org is the.

0:4:49.630 --> 0:4:51.140  
Jim Whitmore (Guest)  
Is the landing page for that.

0:4:52.150 --> 0:5:3.380  
Rich Piazza  
OK. Thanks for that. Akand. Was there anything you wanted to add? You said that you reviewed some papers for previous conferences of this group?

0:5:20.10 --> 0:5:20.230  
Jim Whitmore (Guest)  
Yep.

0:5:4.410 --> 0:5:33.800  
Rahman, Akond  
Yes. Uh. So like Jim was saying, uh, 60 I see is is a special interest group. So within ACM, there are multiple interest groups, one being computer science education. There is also one security as well. I think it's called 6 SEC, but six ASE has been the premier venue where US and international education researchers, educators, policymakers, they come together.

0:5:34.70 --> 0:6:4.260  
Rahman, Akond  
They try to understand what the lay of the land is and what are the challenges and how that can be made, how those challenges can be mitigated through state of the art, research or technology build, tool building or RMD and things like that. So my involvement has been reviewing papers and that gave me some idea on what what this particular community is interested in. So they are interested in development.

0:6:4.340 --> 0:6:21.680  
Rahman, Akond  
Of novel techniques and tools that can improve CS education. So we do see publications that come from US based institute US based institutions as well as that comes from international institutions.

0:6:22.440 --> 0:6:22.790  
Rahman, Akond  
So.

0:6:22.310 --> 0:6:35.140  
Rich Piazza  
Are are they are are. I would just say the papers are security, security oriented or it's sort of more at at the education level. How how to teach as opposed to what to teach.

0:6:36.180 --> 0:6:47.750  
Rahman, Akond  
It has both. Uh, you have. There is the how to teach element. So you will see uh methodologies on teaching cyber security and then they are what to teach papers which are which discuss.

0:6:51.580 --> 0:6:51.820  
Rich Piazza  
Umm.

0:6:47.830 --> 0:7:3.830  
Rahman, Akond  
Uh on critical and design and things like that. So both of which can has a big overlap. I think with security and I do see publications that are being presented that that intersect with these areas.

0:7:5.0 --> 0:7:34.310  
Rich Piazza  
OK. That that's good. I I just, I just thought Jim mentioned it and you know I know about the the special interest groups of of ACM. You know there's there's quite a number of them, but I was not aware of 1 on on on education. So I just thought since that's what we're talking about here, I thought it was just worth giving it 5 or 10 minutes to discuss it anyway so.

0:7:35.370 --> 0:7:49.650  
Rich Piazza  
I just wanted us to all meet again. Just just to keep up the momentum. I just have a few talking points and things that I wanted to get a little bit more detail about.

0:7:51.670 --> 0:7:59.330  
Rich Piazza  
You know, with what direction we should go in and what what would be available, you know from.

0:7:59.970 --> 0:8:3.320  
Rich Piazza  
From you know you the contributors so.

0:8:4.460 --> 0:8:7.370  
Rich Piazza  
So let me just go to the next slide here.

0:8:10.100 --> 0:8:26.510  
Rich Piazza  
So I you know, I I don't really have a a a feel for this and that's why I wanted to discuss it but sort of shaping the format of how we include CWE CapEx CVE into a class syllabus.

0:8:27.870 --> 0:8:32.240  
Rich Piazza  
So I have. I have a few ideas, but I I'd like some ideas from you.

0:8:33.820 --> 0:8:36.490  
Rich Piazza  
So you know the first thing is maybe.

0:8:37.700 --> 0:8:42.90  
Rich Piazza  
At least initially, the first thing we do is we just maybe have.

0:8:42.230 --> 0:9:4.720  
Rich Piazza  
Umm, you know an hour or two about what these frameworks are? What what they do and just introduce the frameworks and then you know, tell people here's here, you know, explore them, you know, keep them in mind. You know, as we as we continue the rest of the class material.

0:9:5.900 --> 0:9:29.960  
Rich Piazza  
So that's that's one. That's one way to look at this and that's very, you know, very minimal way of including this material. But on the other hand that might be the kind of thing that is appropriate if we're also trying to develop some training material that you know that wouldn't be in, you know that would maybe just be in a in a small.

0:9:32.20 --> 0:9:33.920  
Rich Piazza  
You know, workshops sort of setting.

0:9:35.140 --> 0:9:43.880  
Rich Piazza  
So the second thing is maybe use it as a teaching aid for topics and and I think a con you you sort of did this for static analysis.

0:9:45.520 --> 0:9:57.630  
Rich Piazza  
And I and I, and I certainly think that secure coding is is probably one of the the major ways in which we can introduce, you know these these frameworks.

0:9:58.190 --> 0:10:2.840  
Rich Piazza  
Umm kapec in particular, where we're trying to emphasize.

0:10:4.30 --> 0:10:9.400  
Rich Piazza  
Using it in pentesting and threat modeling, so that might be might, might might be something that.

0:10:11.160 --> 0:10:19.630  
Rich Piazza  
That that would that would work. So I guess, I guess my main question is and maybe each of you can can can discuss it is?

0:10:21.10 --> 0:10:36.80  
Rich Piazza  
How how do you see CW Ek, PEC and CVE in the syllabus? Is it? Is it just something that people should be aware of? Is it a teaching aid for for particular topics?

0:10:36.680 --> 0:10:50.570  
Rich Piazza  
Umm you know which which you know, cyber security classes. Do you do you see it useful for? I I assume that there are specially at at the masters level is probably a lot of different.

0:10:51.970 --> 0:11:4.430  
Rich Piazza  
Aspects of computer security that there are classes for, and CWE, Capac and CVE are not appropriate for all of them. For instance something on.

0:11:5.650 --> 0:11:6.60  
Rich Piazza  
Uh.

0:11:7.240 --> 0:11:12.760  
Rich Piazza  
You know, I'm thinking of like encryption and those sorts of things or, you know.

0:11:14.760 --> 0:11:15.450  
Rich Piazza  
You know.

0:11:17.230 --> 0:11:41.500  
Rich Piazza  
SSL sort of interactions, you know Diffie Hellman, those kind of things that's that's a classic, you know cryptography which you know maybe that there's not a lot to say about you know from CW Ek Peck and CVE, although there are some some things, some some entries in in all of those that are related so.

0:11:42.680 --> 0:11:52.330  
Rich Piazza  
Maybe each one, each one of you can sort of address address these questions and and what do you think? Do you wanna go first to con?

0:11:57.360 --> 0:11:58.120  
Rich Piazza  
You're on mute.

0:11:58.480 --> 0:11:58.810  
Rahman, Akond  
Yep.

0:11:59.490 --> 0:12:0.260  
Rahman, Akond  
OK. Can you hear me?

0:12:0.830 --> 0:12:1.120  
Rich Piazza  
Yes.

0:12:2.180 --> 0:12:31.550  
Rahman, Akond  
OK, so so far what I have done as part of my course is is I have directly used CWE and CVS kpac. I have not used it was more of just telling the students that this is this resource that you can leverage the way I introduced CWS was two folded number one was trying to present this database as a big ticks down on me so.

0:12:31.810 --> 0:12:50.710  
Rahman, Akond  
By the way, I did it was I started with the lecture was about insecure coding patterns. So there I discussed what a insecure coding patterns is, what is the security related consequence and why should someone care about it? So why should a software developer care about it for example?

0:12:51.580 --> 0:13:22.680  
Rahman, Akond  
So then I talked about, so if you want to detect these things, we first need to know what are the common types. So I started with the gave an overview of the whole database that obviously they their numerous entries and as to be practical, someone might not be interested in learning or memorizing all of those. So I also gave them the top 25 out of top 20 list both from Cwe and also sends. And then once they have this understanding the next step.

0:13:22.780 --> 0:13:31.60  
Rahman, Akond  
Cost to actually use a static analysis tool and also build a small very miniature static analysis to detect that.

0:13:31.770 --> 0:13:35.660  
Rahman, Akond  
So to use it, uh, I used a tool called.

0:13:36.350 --> 0:13:59.520  
Rahman, Akond  
You'll find uh, sorry, CPP check, which detects common types of vulnerabilities in C++ code, and then I also there was also an assignment where students had to actually write a very small scanner which can parse the source code of a Python file or something like a configuration file and then automatically find insecure coding patterns.

0:14:0.650 --> 0:14:6.480  
Rahman, Akond  
So that's my involvement with CWE or the RCW database. The second involvement was.

0:14:7.80 --> 0:14:18.310  
Rahman, Akond  
Uh. Related to CV as part of the UH Secure Software Development Course I introduced students about the notion of vulnerabilities and also vulnerability management, so.

0:14:19.230 --> 0:14:23.660  
Rahman, Akond  
There is this whole process of forest identifying a vulnerability and then.

0:14:24.680 --> 0:14:53.610  
Rahman, Akond  
And making sure that the proper practices are being followed when it's being disclosed. And so I walked the students through all the all the phases where someone discovers a vulnerability, then it needs to be reproduced, then it needs to be assessed to find out whether it's whether or not it's a it's an important vulnerability. And then the next step is proper disclosure. How you can approach the proper vendors.

0:14:53.750 --> 0:15:20.20  
Rahman, Akond  
Uh open source or proprietary? What are the best practices? And then once you, uh, once you disclose it, then comes the then the other thing that comes is the the mitigation procedures. So now that you have found a honorability, do you have a fix for it? Can that fix be applied automatically and is there a relationship between disclosure procedure and repair procedure so when?

0:15:31.680 --> 0:15:32.370  
Rich Piazza  
Mm-hmm.

0:15:20.100 --> 0:15:41.870  
Rahman, Akond  
It it it should have wanted bility be disclosed after it is being patched or right away. So there are some interesting management related decisions there. So a nutshell, my my experience as an educator interacting with Cwe and CV has been as stated before.

0:15:43.180 --> 0:16:12.780  
Rich Piazza  
So yeah, So what I'm trying, what I'm trying to capture is like how much of you know, like how many of the you know, let's say it's a whole semester and you know how many classes in the semester do these things come up? Are they pervasive? Are they just really just, you know, it's like, OK, you're gonna do, you're gonna do static analysis and.

0:16:13.180 --> 0:16:31.90  
Rich Piazza  
You know, when you find a a findings are are labeled with with CWES or the findings could be associated with CWES and and that's and then you move on to to you know the meat and potatoes of, you know, static analysis. How does how does that play?

0:16:32.570 --> 0:17:3.380  
Rahman, Akond  
So for me at least, uh, if a semester in a, say, 12 weeks semester, I I I dedicate 11 to 1 1/2 weeks on solely on insecure coding patterns which includes discussion of the taxonomy, then includes an exercise and in class exercise and then take home exercise where people where students can gain knowledge on how to build these types of scanners or apply some existing scanners.

0:17:3.500 --> 0:17:21.250  
Rahman, Akond  
Scanners. So for CV it's almost the same. In the case of CV or vulnerability management I usually dedicated to class lectures and that the materials that I teach as part of those lectures are more.

0:17:22.670 --> 0:17:25.650  
Rahman, Akond  
Unless hands on compared to that of cwe's.

0:17:26.340 --> 0:17:32.390  
Rich Piazza  
Umm, OK, now that that that's. Yeah, that's what I'm looking for. Jim, do you wanna go next?

0:17:33.260 --> 0:17:35.110  
Jim Whitmore (Guest)  
Sure. So.

0:17:36.330 --> 0:17:46.700  
Jim Whitmore (Guest)  
I've I've now taught 5 courses and I've tried three different textbooks and and the the five courses include both.

0:17:48.360 --> 0:17:50.890  
Jim Whitmore (Guest)  
I'll lecture and also lab courses.

0:17:52.310 --> 0:18:12.420  
Jim Whitmore (Guest)  
And I've really haven't found a textbook that does the top does the topic of the cyber security justice in the way that I would want to? I mean, there's it's like every chapter is on a, you know, a concept of a of an issue. You know, Buffer overflow as as a chapter.

0:18:13.440 --> 0:18:19.210  
Jim Whitmore (Guest)  
You know, for example, that that kind of thing and and so I didn't feel that it was, I mean it was.

0:18:20.410 --> 0:18:33.160  
Jim Whitmore (Guest)  
The the texts and the lectures were communicating a lot of information and certainly there's a lot of chance for information overload and I've been more after after doing this and thinking about it and trying to.

0:18:34.600 --> 0:18:55.140  
Jim Whitmore (Guest)  
Improve. You know what? What I was teaching. I've kind of settled on kind of a more abstract view of of, you know, of a core skill of what I'll call security analysis and and security analysis can be, you know, what controls are relevant to an environment.

0:18:56.90 --> 0:18:58.750  
Jim Whitmore (Guest)  
What attacks are relevant to an environment?

0:18:59.780 --> 0:19:0.400  
Jim Whitmore (Guest)  
Umm.

0:19:1.180 --> 0:19:12.830  
Jim Whitmore (Guest)  
Or and how did an attack happen? You know, from a forensics point of view, or even from a operational monitoring kind of point of view. So I looked at, you know what, what do I need in order to be able to?

0:19:14.710 --> 0:19:40.920  
Jim Whitmore (Guest)  
Give not only give give the information related to those things, but also give the students you know the ability to go into a work environment and and you know use those as kind of fundamental things and then expand out. And so I see the that CWE and capec I see them as you say as as material that.

0:19:42.570 --> 0:20:0.50  
Jim Whitmore (Guest)  
That our our teaching aids and then in the best case that those teaching aids are brought into exercises within the class. So for example, if I do the lab class and the lab classes that I have done are based on the.

0:20:0.120 --> 0:20:8.150  
Jim Whitmore (Guest)  
Yeah, Naval Postgraduate school lab tainer environment. That's basically a virtualized environment that has about 50 different labs.

0:20:9.310 --> 0:20:24.720  
Jim Whitmore (Guest)  
To include SQL injection and all kinds of other, you know, all kinds of things. So I might use the data as supportive of, OK, you know, this week's lab is about SQL injection. Let's go look into.

0:20:25.520 --> 0:20:42.580  
Jim Whitmore (Guest)  
Capac and find out which attacks are associated with SQL for an example and and and you know you can do that similarly with with CCWE and those the the two of them kind of play together nicely.

0:20:44.100 --> 0:20:45.790  
Jim Whitmore (Guest)  
To the point where you know.

0:20:46.790 --> 0:20:58.600  
Jim Whitmore (Guest)  
I want the students to see that of the list of all the CWE or all the attacks. Let's say that there are some that can be you know.

0:20:59.40 --> 0:21:28.770  
Jim Whitmore (Guest)  
Umm, you know mitigated by using static analysis tools and by the way you can go and learn how to use a static analysis tool or you can buy one or there are you know are dynamic analysis tools and there are some set of the kpac attacks that you may be able to mitigate with a dynamic analysis tool. And then there are others that really don't lend themselves to finding either in which you really have to go into a design review architectural review.

0:21:28.950 --> 0:21:59.0  
Jim Whitmore (Guest)  
You know, so, so the skills of, you know, I see that are important are are things that give a firm foundation. They don't drill down too deeply, at least in the in the courses that I have so far, maybe in an advanced course, you know, you can, you know, look into the origins of, you know, of all the injections kind of thing or the origins of all the buffer overflows and and, you know, and what you can do with programming languages and things like that. So I'm talking about.

0:21:59.340 --> 0:22:30.410  
Jim Whitmore (Guest)  
You know, between entry and kind of mid level courses, I prefer to see those databases used as enrichment tools and aids that can help with exercises and can help with you know, project papers that say you know how would you go about doing this given that here's a here's a way of looking into this data that's kind of you know is is is the origin of building the tools that I put out the.

0:22:30.520 --> 0:23:1.850  
Jim Whitmore (Guest)  
Workbench. You'll find the three tools in there the the control explorer, the vulnerability Explorer, and the Attack Explorer which are really based on, you know, in this State 853 are five cwe and capec that and you can go in there and and you know kind of ascertain what things you think are relevant to you. And as part of a project and then defend why you think these are relevant. So if you're going to do a threat model.

0:23:1.990 --> 0:23:32.160  
Jim Whitmore (Guest)  
And some point you have to be able to defend why you picked these things as relevant to your threat model and why you've dismissed these other things or you build a big umbrella and say everything is on the table, which obviously that shows the student another problem that you've got 530 attacks that you have to worry about. You've got 1000 weaknesses you have to worry about. And so that that presents the scope of the problem. And that's, I think one of the learning objectives is to just show how.

0:23:32.400 --> 0:23:33.860  
Jim Whitmore (Guest)  
Broad and diverse.

0:23:34.340 --> 0:24:1.640  
Jim Whitmore (Guest)  
Umm, you know, cyber security is and you know it's mapped to roles of of you know of of a secure developer of you know operations specialists of forensic specialists. So how these things get mapped in. So I I've used you know again I I I like them not I find it hard to use the web pages that you have even though they're great web pages.

0:24:2.20 --> 0:24:29.700  
Jim Whitmore (Guest)  
Umm to to do to use as a learning resource because you can't really do the searches and the correlations that you want to and so that's why I think you know tools that that use the base content and then then reference the links in your web pages is really the way that I see using them now. I'll pause if there any you know comments or maybe I've gone too deeply or something.

0:24:30.100 --> 0:24:30.950  
Rich Piazza  
No, that that's.

0:24:30.420 --> 0:24:31.110  
Jim Whitmore (Guest)  
Throw away.

0:24:30.100 --> 0:24:43.570  
Steven M Christey  
Is there a way that the web pages can be changed or reorganized? You know this is something that we've been wrestling with for for a couple of years really or for longer than that I'd say, but we're really.

0:24:45.390 --> 0:24:48.720  
Steven M Christey  
Trying to bring in more energy to improve the web pages.

0:24:49.120 --> 0:24:49.750  
Jim Whitmore (Guest)  
OK.

0:24:49.590 --> 0:24:54.130  
Steven M Christey  
And so understanding how it is that you would really want to use them and may help us in that area.

0:24:54.710 --> 0:25:25.80  
Jim Whitmore (Guest)  
OK, well, I again, I've for the the team. I I I did send out a link to this my GitHub dot IO project that's called Secure Security Engineering Workbench where I you know have created an interactive tool for each of the databases in which you can search and filter and sort and export. And as part of that there are there are links to your back end. You know your base pages.

0:25:25.430 --> 0:25:41.870  
Jim Whitmore (Guest)  
That are really a good, you know, you know dictionary for all of these things, but to turn that dictionary into something that's a living, interactive resource for people, I think is what is is.

0:25:42.770 --> 0:26:12.80  
Jim Whitmore (Guest)  
It is the next phase and I, you know, I think I sent out two papers. It's actually something that, you know, we were working on. You know, when I was in business, you know what, eight years ago or 10 years ago. So I see the idea of having interactive tools as fostering consistency and more in depth analysis, but that those things do, you know, reference the back end.

0:26:12.180 --> 0:26:28.40  
Jim Whitmore (Guest)  
Dictionary. You know, encyclopedia pages that you have. So I, you know, I could see an alternate and you know interface to this. And by the way, I don't know that I said this directly. So I've got these tools and trying to figure out what to do with them and what I mean by that is.

0:26:29.440 --> 0:26:39.750  
Jim Whitmore (Guest)  
I believe there's value in the tools and there's value in the pages around them. I'm not particularly interested in starting a company. I don't, I don't wanna.

0:26:40.740 --> 0:27:2.610  
Jim Whitmore (Guest)  
I don't want to have the risk associated with someone coming to me and saying I misinterpreted your data in a way that caused them to do something bad and they have suffered a loss. I don't wanna have a company. I don't wanna open a company. I don't wanna have lawyers to do all that stuff. What I want to do is, you know, if I can contribute to.

0:27:4.110 --> 0:27:34.540  
Jim Whitmore (Guest)  
The environment where people can do better, that's what I would like to do. So what happens to these pages? I'm not sure, but right now they're just kind of out there and I'm soliciting feedback from, you know, people that I, you know, have expressed interest so they can so they can use them so we can, we can talk about, we can talk about that. But I think that you've got a great resource right now. It's an encyclopedia.

0:27:35.250 --> 0:27:54.230  
Jim Whitmore (Guest)  
And what needs to happen, especially for, you know, the up and coming technical people, they're so used to having an app that helps them find the answer. If doesn't. If not find the answer for them and you want it to give you wanna share, give them as complete of an answer as you can.

0:27:55.390 --> 0:28:8.260  
Jim Whitmore (Guest)  
And and there there are some insights that you don't have in your data that you cannot show that really bring it forward. For example, as I mentioned, if you wanna know which.

0:28:8.940 --> 0:28:9.560  
Jim Whitmore (Guest)  
Umm.

0:28:11.80 --> 0:28:12.420  
Jim Whitmore (Guest)  
Which attacks?

0:28:13.660 --> 0:28:17.570  
Jim Whitmore (Guest)  
Can be potentially discovered and mitigated by.

0:28:20.710 --> 0:28:21.280  
Jim Whitmore (Guest)  
By.

0:28:22.230 --> 0:28:53.110  
Jim Whitmore (Guest)  
By static analysis tools you have to cross reference your CWE numbers with the published information from all of the static analysis tool vendors that say what what CWA, CWA, discover and that gives you all of those, then you go to the dynamic tools and you do the same thing. And by definition, if it's not static or dynamic, it has to be a an architecture review of some kind. And so just having that.

0:28:53.220 --> 0:28:54.290  
Jim Whitmore (Guest)  
On the entries.

0:28:55.710 --> 0:29:25.460  
Jim Whitmore (Guest)  
Is something that could give someone insights that says I have a threat model that I have to worry about 200 attacks. And by the way, I can see that one third of them I can do with static analysis another you know 40% or I can do with dynamic analysis. But there's this percentage of them that I have to do design reviews in order to make sure that they're that my, you know software is not susceptible to that.

0:29:25.600 --> 0:29:40.240  
Jim Whitmore (Guest)  
So that's there's information that's out there beyond what you have that ends up being part of the decision process that anyone who uses that data should have, otherwise they they have, they don't have the full context on how to use your data.

0:29:40.790 --> 0:29:47.100  
Rich Piazza  
Yeah. So Jim, I just wanna wanna say a few things. I I have played a little bit with with your work bench.

0:29:48.390 --> 0:29:51.200  
Rich Piazza  
And one of the things that that I'd like to do.

0:30:5.480 --> 0:30:5.860  
Jim Whitmore (Guest)  
Yes.

0:30:5.920 --> 0:30:9.610  
Rich Piazza  
So instead of, you know bringing up CWE 123.

0:30:10.280 --> 0:30:10.530  
Jim Whitmore (Guest)  
Right.

0:30:11.50 --> 0:30:19.0  
Rich Piazza  
So I, you know, I think like maybe maybe next time we get together you could you could maybe do a you know 15 minute or so.

0:30:19.80 --> 0:30:23.70  
Rich Piazza  
So sort of example of how you would present.

0:30:31.140 --> 0:30:31.470  
Jim Whitmore (Guest)  
OK.

0:30:24.190 --> 0:30:46.310  
Rich Piazza  
You know the the various, you know, CWEK PAX CVE using your workbench. So I so I I definitely you know I definitely think that was the sort of thing that I'm you know that I'm hoping we we we can have everybody do do about 15 minutes of of how they were using it. So for instance a concept well he has two classes where he introduces.

0:30:47.730 --> 0:30:51.240  
Rich Piazza  
You know, see WWE or CVE etcetera and so forth.

0:30:52.420 --> 0:30:59.760  
Rich Piazza  
I you know, if you could do a quick quick run through of what he does and in that you know in that those two classes that would be great.

0:31:1.180 --> 0:31:2.70  
Rich Piazza  
One one thing.

0:31:3.320 --> 0:31:6.0  
Rich Piazza  
And Steve, Steve may have a a comment on this.

0:31:7.90 --> 0:31:21.130  
Rich Piazza  
And and you know, I think what what you're saying, an example of what you're saying that, you know, we have the you have all this interesting other data that is maybe not found in, you know, in the encyclopedia cyclopedic.

0:31:22.410 --> 0:31:49.630  
Rich Piazza  
You know websites that we have and it may you know like for instance what you know who, you know, what tools find this this CWEI think that might not be the appropriate. I think it's a great thing that you you have it in your in your workbench but I don't know if it would be appropriate for us as as you know representing you know as miter at representing is this et cetera and so forth to kind of.

0:31:50.490 --> 0:31:57.830  
Rich Piazza  
Discuss tools and you know so you know and and what they find and how.

0:31:58.160 --> 0:31:58.910  
Alec J Summers  
So when?

0:31:56.610 --> 0:32:4.240  
Steven M Christey  
Well, we we cover that data, we cover that information in CWE, but it's types of tools, not specific tools.

0:32:5.350 --> 0:32:5.820  
Alec J Summers  
And.

0:32:4.550 --> 0:32:24.980  
Jim Whitmore (Guest)  
Right. And yes, I I I don't, I don't disclose which vendor. I mean I I I I know that I know the procurement thing you gotta put 3/3 out there. So I've I've merged all the entries from three different entry, three different vendors. So it's not obvious which one does, but it's just a you know, yes.

0:32:25.940 --> 0:32:28.480  
Jim Whitmore (Guest)  
You don't. You don't need to share the vendors name. Yeah.

0:32:30.530 --> 0:32:32.330  
Rich Piazza  
OK. Alex, did you want to say something?

0:32:31.570 --> 0:32:38.240  
Alec J Summers  
Yeah. I was just gonna say that that was my understanding of what Jim was describing, which is the.

0:32:40.120 --> 0:32:45.850  
Alec J Summers  
You know the element within a CWE entry that we have that we there were well aware of the value that is.

0:32:47.30 --> 0:32:52.950  
Alec J Summers  
Not currently being captured in detection methods, right? We we have an element for it.

0:32:54.430 --> 0:33:13.180  
Alec J Summers  
And we heard on specifically from hardware community members as well that that that's a really valuable one that we wanna enumerate further. But I I do appreciate the insight on that because at the end of the day understanding you know that kind of information in addition to the week.

0:33:14.730 --> 0:33:17.180  
Alec J Summers  
So how you doing that? We probably should be.

0:33:19.390 --> 0:33:25.200  
Alec J Summers  
Uh, you know, taking on as far as adding to those that don't have it, but certainly for new weaknesses that we're ingesting.

0:33:25.620 --> 0:33:30.830  
Jim Whitmore (Guest)  
Yeah. There there's another aspect as well. Just to share one, one more thing and that is that.

0:33:31.850 --> 0:33:45.860  
Jim Whitmore (Guest)  
Some of your data elements in CWE and Capac that are that are on the surface when you're looking at the encyclopedia view of it, they seem to be secondary.

0:33:46.570 --> 0:34:15.360  
Jim Whitmore (Guest)  
It turns out that from a an analysis standpoint, they're actually more important than some of the real the detail of this is what the weaknesses or this is how the attack happens, and and the the one of the data elements that I'll mention is the one that says, you know, what is the impact. And so you have a little phrase that has, you know, 8 or 10 words in it that says impact and the impact could be.

0:34:16.600 --> 0:34:20.550  
Jim Whitmore (Guest)  
Yeah, it disclosure of sensitive data, for example.

0:34:21.90 --> 0:34:33.920  
Jim Whitmore (Guest)  
Umm, once you look at that in the tool and you have a drop down, you say I wanna see all the seed WWE or all the CapEx that result in disclosure of sensitive data as an example.

0:34:50.930 --> 0:34:51.610  
Rich Piazza  
Yeah.

0:34:36.130 --> 0:35:0.920  
Jim Whitmore (Guest)  
That's what a threat model is. And so being able to filter all your entries on that field on the data that you have there is probably more significant from a threat modeling point of view than having the whole encyclopedia of all the things, because with, you know, with one with one button I can press and say, OK, let's let's explore all the different ways that you know, sensitive data can get exposed, yeah.

0:35:5.440 --> 0:35:5.730  
Jim Whitmore (Guest)  
Yep.

0:35:0.730 --> 0:35:31.870  
Rich Piazza  
Yeah. So just just a few things and then we, we we should we should move on. The first thing is there are there are we have been trying to build some filtering capabilities into CW and CAPEC and I'm not sure if you could you could do that exact query that you were stating but you know that's the sort of thing that we're we wanna make the the websites more usable and I you know I invite you and anybody else on the call if they're interested to attend our user experience working group.

0:35:32.80 --> 0:35:32.870  
Rich Piazza  
That meets.

0:35:33.710 --> 0:35:35.40  
Rich Piazza  
Once a month, I think.

0:35:36.400 --> 0:35:40.330  
Rich Piazza  
And you know, I can get you that if I can send out that information to everybody.

0:35:41.470 --> 0:35:47.860  
Rich Piazza  
You know, and you know, I think your insights would be would be valuable there and and and I'm sure others would be too.

0:35:49.520 --> 0:35:52.90  
Rich Piazza  
Why don't we move on to Susanna?

0:35:54.690 --> 0:35:55.240  
Rich Piazza  
And.

0:35:55.830 --> 0:35:58.230  
Suzanna Schmeelk  
Hi ohh sure yes I can contribute.

0:35:59.550 --> 0:36:8.390  
Suzanna Schmeelk  
I actually I I agree with everything I reiterate with what Jim has just said. And I conned earlier, these are very similar.

0:36:9.450 --> 0:36:40.280  
Suzanna Schmeelk  
You know things that were I'm kinda doing in my class. I've I've. I've thought about 13 or 14 classes in the last three years and they range from everything from an introductory undergraduate to the Masters capstone. So for me, one of the interesting things I'm seeing with the CWE and CV and KPAC is that you know, some sometimes I brand new students in the class that are entirely new to cyber security.

0:36:40.420 --> 0:37:10.190  
Suzanna Schmeelk  
And then sometimes I have sort of what we would say, more seasoned veterans who have been studying it for five or six years. So I I guess for me they were mentioning earlier on earlier talks that there might be some sort of guidance that about CV or CWE or kpac you know that we can point newbies to so that they can kind of spin up for it on it. Every class I teach I kind of integrate different aspects.

0:37:11.470 --> 0:37:15.270  
Suzanna Schmeelk  
I like kapec. I actually bring that into my pen testing course.

0:37:16.310 --> 0:37:19.700  
Suzanna Schmeelk  
And and the attack framework as well.

0:37:20.160 --> 0:37:35.40  
Suzanna Schmeelk  
Umm. And the more research you classes, I let the students kind of pick their framework last semester. I taught in network security and advanced network security class where I actually had an undergrad student already working in the field.

0:37:35.690 --> 0:38:1.190  
Suzanna Schmeelk  
And I, you know, was doing I, you know, he was more like on the DoD side of the house. I'm not exactly. But let's just say that and they are they actually have a a set framework at their company and they were using that wasn't one I was even familiar with. It was sort of a I have to look up the number it was a special publication but it was sort of a subset of 800 dash 53.

0:38:1.840 --> 0:38:10.10  
Suzanna Schmeelk  
So I do open it to the class to to kinda select the framework that might be applicable to the research project.

0:38:10.940 --> 0:38:28.260  
Suzanna Schmeelk  
Umm, but I I kind of tend to frame things in terms of risk because some issues are they are very, very important, but they're, you know, they may have less impact on depending on what you know kind of a control it is.

0:38:28.880 --> 0:38:35.810  
Suzanna Schmeelk  
And and but anyway, so I I tend to frame things around risk management now.

0:38:36.70 --> 0:38:39.420  
Suzanna Schmeelk  
Umm so that we can kind of somehow manage risk.

0:38:40.80 --> 0:38:44.630  
Suzanna Schmeelk  
And like I said, some classes are static analysis, dynamic analysis.

0:38:44.710 --> 0:38:54.500  
Suzanna Schmeelk  
Umm, you know, there's a lot of tools out there, so you know we have these in mobile security classes all the way to.

0:38:55.260 --> 0:38:55.790  
Suzanna Schmeelk  
Umm.

0:38:56.460 --> 0:39:21.490  
Suzanna Schmeelk  
You know, uh, developing their own software and then the last thing I'll just say is what they were a con and Jim were saying earlier, the whole life cycle of these problems are so important to emphasize all the way from developing side to later on pen testing per se. What happens if things are identified, how to like companies know that.

0:39:21.810 --> 0:39:36.590  
Suzanna Schmeelk  
And even to patching and understanding, you know, sort of costs and problems around patching and then all the way to decommissioning. So I've seen a lot in healthcare where things are decommissioned.

0:39:37.470 --> 0:39:49.10  
Suzanna Schmeelk  
And people kind of forget about the cybersecurity and just the security aspect in general, and there's tons of data breaches out there because, you know, the machine went out the door with.

0:39:49.680 --> 0:40:19.930  
Suzanna Schmeelk  
You know, patient information or even one of the interesting things I saw on industry is even if they pick up and do a, you know, some sort of a technical thing on that medical device, if it has patient information on it, that could be considered a breach just depends on, you know how that is set up properly. So any technician who comes in and picks it up, you know, if the controls, legal controls, paper trails not in place properly per se.

0:40:19.980 --> 0:40:25.870  
Suzanna Schmeelk  
Or if you know if there isn't a process to leave the hard drive behind, but anyway so.

0:40:26.640 --> 0:40:36.940  
Suzanna Schmeelk  
I I I I wanted it to reiterate what Jim was saying earlier and a con as well that you know that full process is so important, but.

0:40:37.590 --> 0:40:43.330  
Suzanna Schmeelk  
Umm yeah, so different classes. I I really do speak to some of the different frameworks but.

0:40:44.390 --> 0:40:44.950  
Suzanna Schmeelk  
Yeah.

0:40:44.640 --> 0:40:52.300  
Rich Piazza  
So so as so, for instance, would you, would you say that, you know, let's say you were introducing a static analysis?

0:40:52.960 --> 0:40:53.250  
Suzanna Schmeelk  
Umm.

0:40:53.580 --> 0:41:13.590  
Rich Piazza  
Would you spend a class on going through various weaknesses that are available and see CWE which you share with CWE pages you know for you know Buffer overflow and and and go through that or how how would you use? How would you use the?

0:41:15.230 --> 0:41:16.20  
Rich Piazza  
The corpuses.

0:41:16.570 --> 0:41:42.0  
Suzanna Schmeelk  
Yeah. Yeah, that's a really good question. So it that really depends on the class. There is so extensive. So one of the interesting things are is I can highlight a few like for the CVE, I believe and CWEI actually have students present a problem. One of the recent ones was the log 4. Ji believe was up on, on up on the.

0:41:43.260 --> 0:41:49.790  
Suzanna Schmeelk  
A nice entry, and so the students then get very familiar with what these entries entail.

0:41:51.250 --> 0:42:21.340  
Suzanna Schmeelk  
But then again, I ask them all to incorporate it in their final project, so pretty much every class I have may or may not have an exam sometimes. Most likely it has an exam and a project which is a little bit. I've kind of scaled back the exam when they have a project, but usually they're a project is asked to frame it in turn of, you know, one of these frameworks, just like I said, I sort of taught, you know, 13 and 14 different classes. So each class has a little different.

0:42:21.840 --> 0:42:51.650  
Suzanna Schmeelk  
On lines to it, but static analysis is in our secure software class, so we can give them an example, but then I'm I ask them to take that to the next level by you know further integrating the framework into their final project, write up so that they can, you know, more clearly, make these connections themselves on. But yeah, so everything from a presentation to actually in our risk assessments.

0:42:51.930 --> 0:43:7.600  
Suzanna Schmeelk  
They actually have to, you know, use that. I think it's the 800 dash 53 you have on the bottom there the and the attack framework to actually speak to that. So that's actually linked into their submission on every entry.

0:43:8.260 --> 0:43:19.50  
Suzanna Schmeelk  
Umm. And then and then and every one of those 13 classes I've taught the final project, whatever it is, is always required to link back to a framework.

0:43:19.380 --> 0:43:30.770  
Suzanna Schmeelk  
On the other one I've been seeing frequently now is also the NIST bug framework. I think they call it BF, the BF as well.

0:43:31.280 --> 0:43:42.530  
Suzanna Schmeelk  
Umm, which is a little bit of a different spin in that they try and come to the essence as as I think Jim was saying earlier there, sometimes we wanna look at the essence of of of problems.

0:43:44.520 --> 0:44:14.290  
Suzanna Schmeelk  
Yeah. So anyway, I I don't wanna talk too much or take too much time, but I there are lots of little elements inside the class where we link back to this, but they almost need a whole class in itself on cwe cuz it's so and kpac because they're so expensive. They're just this wonderful, you know, framework that's out there that helps, as I've said earlier, you know, kind of give us more complete picture because a lot of these tools.

0:44:14.690 --> 0:44:33.710  
Suzanna Schmeelk  
They look at a very certain problem and so we can easily say, hey, you know, it passed the analysis, there's no problems, right? And so that just because it passed the analysis, you know the false negatives in cyber security are are kind of the scary ones.

0:44:34.500 --> 0:44:35.70  
Rich Piazza  
Mm-hmm.

0:44:34.870 --> 0:44:39.0  
Suzanna Schmeelk  
So these frameworks help that the false negative sides.

0:44:40.650 --> 0:44:48.730  
Rich Piazza  
Uh, OK, well, well, thanks. We're running a little short on time, so I'm gonna give a rash probably.

0:44:49.910 --> 0:44:53.30  
Rich Piazza  
You know you have. You have some time to.

0:44:53.790 --> 0:45:0.340  
Rich Piazza  
To have your discussions about about these, uh, these points, you know how you use it in the classroom, etcetera and so forth.

0:45:1.530 --> 0:45:3.420  
Arash Habibi Lashkari  
Yeah. Thank you. So.

0:45:6.220 --> 0:45:12.660  
Arash Habibi Lashkari  
Shortly, briefly, I can say that I'm using in two actually different aspects. One of them is for the.

0:45:13.710 --> 0:45:17.380  
Arash Habibi Lashkari  
Mainly the classes that I have, which are the.

0:45:18.480 --> 0:45:42.750  
Arash Habibi Lashkari  
Risk management, security, risk management and network security and also digital forensics for the risk management. I'm mainly focusing on the thread analysis and risk assessment and analysis, so here as students referring to the hardwares that we have it in a in a test bed and they are going to find the CVS and then based on that one, they are going to find the.

0:45:43.480 --> 0:46:13.570  
Arash Habibi Lashkari  
The actually CVS and then based on that one they are going to find the the risk value calculating the risk value based on the formula that they are preparing and also for the countermeasures. Normally they are referring to the related capec and they are trying to find that what is the nature of the attack and how they can write the best actually countermeasure for that one either as a detector or preventor doesn't matter. But when we are.

0:46:13.760 --> 0:46:17.810  
Arash Habibi Lashkari  
Going back to the to the cycle of the risk, they should have some actually.

0:46:18.560 --> 0:46:33.470  
Arash Habibi Lashkari  
Yeah. Countermeasures there that we are going to use it for the mitigation step of the risk for the network security and digital forensic mainly I'm using CVS, especially some of those actually specific CVS.

0:46:34.560 --> 0:47:5.110  
Arash Habibi Lashkari  
Uh, for some of the assignments and activities that the student has, because then they need to actually based on that CVE go and read about that one and find the route to cause you know, which normally for us is the cwe and then find that for example if there is a software what was the issue and then how actually as a as a forensic investigator we can follow that one up or why did we actually follow those steps so in somehow.

0:47:5.190 --> 0:47:22.600  
Arash Habibi Lashkari  
And they have a methodology for the digital forensic, this type of the CVE, CW and the CapEx that going to be connected to each other going to actually help them to understand that why we actually using those steps and those rolling up or backward in process to find the root of the.

0:47:23.40 --> 0:47:38.430  
Arash Habibi Lashkari  
And the issue this is just for the classes that I'm actually teaching, but the second one is for the research that I'm doing, mainly the data sets that I'm generating. So for each data set, normally based on the.

0:47:39.90 --> 0:48:8.940  
Arash Habibi Lashkari  
You know the report of the previous year, sometimes from Ovas, sometimes from, you know, different actually companies. So we are using those reports to find the most common attacks. And then based on those most common attacks, we are reviewing the the JPEG one and then find the CVE and CWE. We prepare the test bed based on the CV that we actually we read and then we are writing the attack scenario. We are running the attack.

0:48:9.20 --> 0:48:25.440  
Arash Habibi Lashkari  
You're capturing the trophy, capturing the memory, log and everything, and we are creating the cybersecurity datasets mainly for the guys who are using the machine learning deep learning for training their models. So these are the two different ways that I'm using the.

0:48:26.200 --> 0:48:33.680  
Arash Habibi Lashkari  
Actually CVC WE since 2000 I should say 2010 and 11 till now. Thank you.

0:48:34.250 --> 0:48:55.480  
Rich Piazza  
OK. Yeah, that that's great. So the the other thing and and I think we we've kind of covered the other thing that I wanted to the other talking point was what else should be involved and there you know there are a lot of other frameworks out there and I'm not necessarily saying that you know that we would.

0:48:57.30 --> 0:49:20.680  
Rich Piazza  
You know, you know that we would necessarily include material from from attack, but we might be able to get some some help from the attack team and they could contribute something to make sort of a whole class syllabus as opposed to just, you know the, you know, we're gonna do the static analysis.

0:49:21.900 --> 0:49:27.40  
Rich Piazza  
Class. And here's here's here's the weaknesses that you should know.

0:49:28.400 --> 0:49:44.910  
Rich Piazza  
But maybe now that you've found it, you know what is the mitigation? And there's this new ISH framework out there. It might or called defend which which is is sort of based on on mitigations and remediations.

0:49:46.890 --> 0:50:0.760  
Rich Piazza  
There, there, there is, you know, a lot of there's a lot of discussion and you know, this is something that we've we've discussed in internally about you know using 853 and somehow.

0:50:1.490 --> 0:50:17.500  
Rich Piazza  
Tying the controls to to these frameworks, it's something that that I think is important, others you know and maybe we don't have you know it's such a large document, maybe we don't have the the manpower to do that, but it's it seems to me that that's something that.

0:50:18.980 --> 0:50:23.450  
Rich Piazza  
That would come into play in in an education setting that you know you would be discussing.

0:50:25.50 --> 0:50:36.540  
Rich Piazza  
A weakness you'd be discussing an attack pattern and then you would say here's here's how to prevent this. Here's what you know, etcetera and so forth. Here's the controls that you should use for for this particular thing.

0:50:39.180 --> 0:50:42.870  
Rich Piazza  
The other thing I wanted to cover, we just have a few minutes left is.

0:50:42.950 --> 0:50:43.480  
Rich Piazza  
And.

0:50:45.290 --> 0:50:52.70  
Rich Piazza  
Sharing your content so one of the things that I was saying earlier to Jim and I and I think this is.

0:50:53.950 --> 0:51:8.700  
Rich Piazza  
You know, this would be a good way to kind of see how you use the stuff is. If we could just schedule like these mini classes 15 minutes, 30 minutes, depending on how much time you think is appropriate. You know, to kind of say, OK, here's here's.

0:51:9.840 --> 0:51:25.850  
Rich Piazza  
You know, I have a a, a 60 minute class where I'm presenting how to use CWE and here here would be the points that I make here would be you know the things that I show et cetera and so forth. So you know the next.

0:51:27.710 --> 0:51:49.760  
Rich Piazza  
I I was thinking that, but what I I could show some of the secure coding class stuff that that we've developed here at Mitre and maybe Jim if if that works out the next time at our next meeting, maybe you could also do, you know 15 minutes or so on on your your work bench, would that would that make sense?

0:51:51.390 --> 0:51:59.790  
Jim Whitmore (Guest)  
Yes, it makes sense. I'll go through my lecture materials and show how I've incorporated in the past and then yeah, and then go a little bit farther, sure.

0:51:59.920 --> 0:52:8.190  
Rich Piazza  
OK, the, the, the other thing is that you know as as we as we you know get further into this and start really developing.

0:52:8.640 --> 0:52:12.990  
Rich Piazza  
Umm, you know actual content?

0:52:14.700 --> 0:52:21.780  
Rich Piazza  
You know, the question is how much can or do you want to share? What what you have.

0:52:23.20 --> 0:52:34.390  
Rich Piazza  
You know, do you have handouts that you that you give out are there are slides that you know that that we could get information from other technical papers etcetera and so forth.

0:52:35.650 --> 0:52:50.460  
Rich Piazza  
I you know, I I have no idea. You. You you know you work at at universities? I have no idea how the intellectual properties handled. I don't know if if you own it or the university does if there's some public release that's needed. I I do know that.

0:52:52.100 --> 0:52:52.800  
Rich Piazza  
At mitre.

0:52:54.520 --> 0:52:58.340  
Rich Piazza  
So some of the people who are not on this call, but they were on the earlier call.

0:52:59.440 --> 0:53:0.790  
Rich Piazza  
That we had last month.

0:53:2.490 --> 0:53:12.840  
Rich Piazza  
They, uh, the material that they use in that classroom is owned by miter, so it has to be publicly released. So there there are all those issues that you know I.

0:53:13.740 --> 0:53:27.200  
Rich Piazza  
It would be interesting to just for you to know exactly what you can share what you want to share, what you can share, et cetera and so forth. So that that's something we can we can, we can talk about in the future. I don't know, does anybody have any comments on that?

0:53:28.400 --> 0:53:43.930  
Arash Habibi Lashkari  
Sorry, Rich, just one thing. So what is going to be the objective of this one? For example, let's assume that I give all my slides to you. So what we want to do at the end for the for the others, you know I I didn't get this point, sorry, this is Arash.

0:53:44.870 --> 0:53:47.600  
Rich Piazza  
Yes. No, I understand that. I I you know I mean.

0:53:48.440 --> 0:53:56.470  
Rich Piazza  
What? What I what I foresee and this is still open for discussion, is that we're gonna have some materials which will be.

0:53:57.850 --> 0:54:6.750  
Rich Piazza  
Either you know, based on some of the materials that that you've used in the classroom, or stuff that we develop as as we we discuss.

0:54:7.750 --> 0:54:20.80  
Rich Piazza  
And you know, and as I said, I'm not 100% sure if we're going to develop a, you know, a 2 hour course on what's what is in these frameworks or we're going to.

0:54:19.450 --> 0:54:50.320  
Arash Habibi Lashkari  
So that that's exactly my question. So let's let's target something and everybody help you know each other to do it. For example, if you want to have a 2 hours, I don't know for example content for the two hours class. So we can we can everybody you know work on that one have a framework and then some slides and then we can help you you know with the material or everything to prepare or if we want to just present to the people that OK these universities using this one.

0:54:54.160 --> 0:54:57.520  
Rich Piazza  
Uh, Arash, you went, you went on mute for there for a second.

0:54:57.380 --> 0:55:20.490  
Arash Habibi Lashkari  
Ohh sorry or for example if you want to have just the list of them that how many universities using how they are using which courses to promote the program so we can prepare some other content or material. So I'm just asking that if you tell us that what is the best way or what is the main actually target point that we want to.

0:55:20.570 --> 0:55:35.430  
Arash Habibi Lashkari  
To show so definitely I'm. I'm the, you know fully supported this this process and I would like to share everything that I have, but I think is better at first. We know what we want to do at the end.

0:55:36.910 --> 0:55:37.730  
Rich Piazza  
Yeah, I I.

0:55:36.640 --> 0:55:38.420  
Arash Habibi Lashkari  
You you got my question? Yeah.

0:55:38.510 --> 0:55:47.470  
Rich Piazza  
No, I mean that's definitely true. And that was one of the one of the things that I was I was trying one of the talking points I I had on the previous slide is what what format is this gonna take?

0:55:48.930 --> 0:55:51.460  
Rich Piazza  
And I I definitely.

0:55:52.600 --> 0:55:53.470  
Rich Piazza  
Sure, go ahead.

0:55:50.640 --> 0:56:21.550  
Arash Habibi Lashkari  
Can I share one idea? Sorry. Previously if you remember in the in the industry side we we actually saw that OK for example you expanded the the website to created something for the industry. So then we decided if you remember in 2-3 emails back and forth that OK maybe we can have one page for the academia and talk about how you know the Academy can use this one. So here we can have a listed of the everybody who used this actually materials.

0:56:21.650 --> 0:56:32.650  
Arash Habibi Lashkari  
No content. Everything in there I courses or research and also we can have some suggestion or some packages free. You know that they can download it and use it.

0:56:33.550 --> 0:57:3.620  
Rich Piazza  
Exactly that. That's what we're looking for. So and and you know, you know, we're still early and you know, I'm not, I'm not sure. And I think it it's based on the input of everybody on this call of exactly what what our goal is what what the end goal is is it's something that comprehensive. Is it something you know just a summary you know and one of the things you know as I said that I I'd like to start doing is if we could.

0:57:3.700 --> 0:57:31.190  
Rich Piazza  
If we can all share, not only you know that we share the actual documents, but we share, you know, what is being taught in the class. That's why I was. I was suggesting we could have these maybe the next two meetings we could we could go through whatever you know just a little bit of what everybody does and see how it how you know how it works at you know in your class as opposed to somebody else's class. Does that make sense?

0:57:33.480 --> 0:57:33.910  
Arash Habibi Lashkari  
Yes.

0:57:34.710 --> 0:57:35.170  
Rich Piazza  
OK.

0:57:35.600 --> 0:57:47.610  
Jim Whitmore (Guest)  
This is Jim. It it does make sense. I I would also I agree with ARASH to to to have an idea of what you have in mind for how it's presented to the world.

0:57:48.810 --> 0:57:52.740  
Jim Whitmore (Guest)  
Yes, that that would be. You know something that would be important to me.

0:57:53.880 --> 0:57:58.270  
Rich Piazza  
Right. And you know, as I said where where, where sort of going on various?

0:57:59.920 --> 0:58:10.830  
Rich Piazza  
Tangents will that tangent is not the right word. We're going on various paths 1st to see what what's available and then to see where we wanna go with it. Now. Alex, did you have a comment?

0:58:12.930 --> 0:58:35.60  
Alec J Summers  
But while we're just up on time, I mean, I I one thing I wanted to be clear too is in addition to the educational aspect and academia and everything and all the possible outcomes. I do wanna be clear from the program side, we are very interested in the idea of helping improve the usability for beginners and the the as, as Susanna was saying, the newbies for a lot of these.

0:58:36.590 --> 0:58:49.760  
Alec J Summers  
You know to use another term, encyclopedic, very robust. You know, hard to navigate websites. So that's one area where I think we could really use your guys input, which I realize is is somewhat.

0:58:50.480 --> 0:59:16.20  
Alec J Summers  
Umm, you know, tangential from the side of the actual educational aspect in the classroom, but the educational sort of intuitive learning process of using the sites and how they could be improved through, you know, sort of technical training materials on the sites themselves or processes, if that makes sense. So I realized that's opening up a whole lot other discussion and I look forward to the next one we have.

0:59:16.450 --> 0:59:30.260  
Rich Piazza  
Right. And and as as I think I I mentioned or or pat on the slide, the question is you know how much you know we have sort of two ideas, one is training and the other is learning and.

0:59:31.260 --> 0:59:56.650  
Rich Piazza  
Are, you know is the is the material similar? Is it completely different and that's something we we have to we have to figure out well this is this has been really terrific. I I will set up another meeting shortly and hopefully a few people couldn't make it. Hopefully they can. They can join us next time around. So I really appreciate every you know all this discussion I think was really terrific.

0:59:58.30 --> 0:59:58.600  
Rich Piazza  
Thanks a lot.

1:0:1.150 --> 1:0:1.640  
Alec J Summers  
Thanks all.

1:0:2.660 --> 1:0:3.370  
Alec J Summers  
Bye bye.

1:0:2.940 --> 1:0:4.570  
Suzanna Schmeelk  
Thank you. Bye.

1:0:8.80 --> 1:0:8.850  
Arash Habibi Lashkari  
By everyone.