

Doctor Johnson: Engineering labs, configuration software. Maybe it's going to be useful. For example, lab three would be one where that would happen. And so, we we're not just doing command line, log ins to equipment. We also need to be able to do something where you can interact remotely with the windows application, ideally. And looking at the web page for team viewer, it looks like it does have some ability. They do over a moment that's top. As well. Are you able to hear me this time?

Joe Stanley: I was at least. I'm just looking up team viewer now, too. It's interesting. I will have to do some more research into it. I haven't heard of it before. Right? I guess I haven't heard of it. I haven't used it before.

Yifan Zhu: Actually, I use the TeamViewer before. I used to help my classmate, an old friend, I helped him to install some software on his computer through the TeamViewer. It is perfect for your students. Still, if you want to use the professional version, you have to pay them. After all, it's not totally free, but I think the basic function is enough for EO students to operate.

Doctor Johnson: So, the free version does support remote desktop then. Yes. One of the things I could see doing on some of these remote labs would be also, if we might be able to have policy relays that we could control through a graphical interface on PCA to connect or disconnect circuits.

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Doctor Johnson: If we need to change circuits, that's something else that we may need to work out when you get into the implementation phase. Joe, do you have any other questions? I guess I got you off.

Joe Stanley: No, that's okay. I think that was the biggest one. It was sort of cascade and questions so that one answered a lot of the others. Now I think this is interesting. I don't know that I have anything else off the top of my head.

Doctor Johnson: I will have some, but I want to see if anyone else had given anyone else a chance first.

Doctor Johnson: I like what it looks like the capabilities of TeamViewer. I definitely would take TeamViewer over the putty. So, I've heard both of them so many times. I don't know which is right. But this TeamViewer has a lot more capabilities. I ,also one of the what's also

connected on this meeting, I think Hussein is connected. And so. He's one of the people who is local to campus and also be able to help with one of the, if you need things actually turned on or wiped in or stuff, locally, he's going to be able to help with them.

Doctor Johnson: So that's alright. He has the defense, you know address. And I think you guys as the e-mail as well. Some other questions on? You talk about lab three and lab four, not being very suitable for remote access. I would definitely agree on lab four. A that's a commissioning lab. It's one that's really all about verifying your connections and verifying that everything is communicating correctly. And that would be a hard one to do remotely.

Doctor Johnson: We may have to think more about how we're going to implement that. And that's probably the outside of the, I would say that's probably outside of the scope of your senior design project. Try to do lab 4. If you if you have ideas and suggestions as you do the other labs, we can revisit that. And I would love to hear your advice. When you finish this project and things that we can do going forward. Because by the time you finish this project, you're going to be our local experts. You'll be able to tell us what worked and what didn't. Lab three with the HMI, I think that one I would still like to see if we can figure out a way to make that one remotely.

Yifan Zhu: Okay, I see. I will check on it later.

Doctor Johnson: Yeah, I if I were able to do it, I think we're going to be able to come a lot closer. I think that big thing is either having you know need to have a TA in the lab, have things that we can have in order.

Doctor Johnson: From this interface, you can open your clothes, contacts to open it, to create circuits. We're getting that flow, and whether we can I know that we can control the I could post test that remotely. So that can actually control communication. I still think even if we have the power on for that lab, I would want to have somebody in the room to... We're probably still going to need to have a TA in the room. You may eventually try to do it purely autonomous. I still be able to know that if nothing else sent to TA and make sure that nobody has changed the configuration with one of the more students come in.

Doctor Johnson: Then back to the three labs that we currently do in ECE 444. I guess your recommendation and looks like you strongly recommend Mininet. Is that, right?

Yifan Zhu: Yes, I have downloaded installed it. I think in that probably the simplest one and easy one your students to operate.

Doctor Johnson: Because that would definitely fit with being able to the emulate or simulate the labs that we do so that the situation on emulating their own computing. We might do very well with the back-up. Because right now it's transparent that they're doing that. A lot of power system that they do it on. We do not know connected for the outside internet. That's only connected to. What we're doing that, well, I'm not sure if you want to do it. Let's start up that was connected to the outside environment. Right? I like that in Mininet for that. One of the students that would be important that we use Engineering Outreach reporter called Hari Challah. He's also said that he would be available the help you guys with the things right on the labs. I don't think you have ever seen the connect and relay.

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Doctor Johnson: And then could you talk about your plan or your schedule for next semester?

Doctor Johnson: Of course, I'm a little confused when I see spring semester. The first thing I see, I'm assuming that starting right from the first day of classes in the spring semester, you're going to be working on developing, developing the labs right here. You're not going to wait till March 1st to begin lab testing. You're actually going to be doing the development. And then you're going to test everything starting in march is in my understanding that, right?

Yuhao Li: Yeah, definitely we will start as early as possible.

Doctor Johnson: And so, are you going to divide up the tasks between the three of you? So, what are we going to work on access labs, and somewhere I work in the Mininet, are you going to do all three work together on the Mininet, then you're going to work on the remote access?

Yuhao Li: Maybe we haven't decided yet which first. But I think better for us to do the remote control firstly.

Doctor Johnson: Personally, I don't care which one you do. First. I think it's good to have a plan, especially for the start of the semester. Been a lot of senior teams over the years who basically don't do much in the first 2 weeks of classes and don't really get started into their project until the third or 4th week.

Doctor Johnson: Having a plan for what you're going to do in the first week. Once you're finished with everything you're doing in the fall semester, take a couple of weeks, relax. And then but have a plan for what you're going to do right away, starting the first day of classes or the first week of classes. We will schedule our time before the spring semester starts.

Doctor Li: Let's make a Gantt chart. So, we'll show you an example how to make a Gantt chart. And it specifies who is going to work on what part, which part. So, we can do it after this meeting.

Doctor Li: And then maybe so I guess you need to prepare your snapshot day 2 and there's on Friday and then maybe spend some time. I don't know. So, get to this schedule ready. And send it to us. And to Doctor Johnson to review.

Doctor Johnson: I don't have any questions. I think I like the progress you made in the last couple of weeks. We get some of the stuff together.

Yifan Zhu: Thank you. Thank you. Doctor Johnson.

Doctor Li: I have one question. So, to make the connection remote connection, I have no experience. I'm just wondering. So, if you make connection between like two computers in china, maybe I don't know, maybe there's some difference. If someone like joe wants to make a connection to you. The University computer, because the computer is in a LAN in local area network. I'm not sure there's a concern. Have you considered? Have you thought about these before?

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Yuhao Li: Yeah, before our remote-control test began in march, we want to make sure it's really wonderful for the TeamViewer to do the most control. Otherwise, we have to find other ways to do the lab.

Doctor Johnson: Part of it is that, as the UI VPN client. I'm able to have a computer which is going to be opened up to have permission for remote desktop.

Doctor Johnson: At a minimum, it's going to have to be something where they're coming in through the off-campus students are going to come in through the UI VPN client. And it's possible to make a separate VPN group that with limited access. We can say that the IP addresses for any of the computers that we're going to use for this for these remote labs are going to be limited to that specific VPN group. So that it adds some security so that the general campus population, the computer science students that are practicing or exploring things don't can't break into something. We already do that with the RTDS lab so that we have the RTDS lab set up that it has its own separate DPN that's the same as 19s as working as the RTDS lab. Next for that day, and day.

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Doctor Li: I think Hussein has noticed these. I'm just worrying for future, if we have someone to ask these kind of questions, because whatever they need to see, I think they need to figure out how to ,for at least for them, to success, the access to their computer in the power lab.

Doctor Johnson: Hussein has worked with the RTDS as used the RTDSVPN and I believe, but it's something where, when we get to that point where we're setting up. We can firstly request it to get a RTDS VPN set up for the where they're going to be working on this, but that I'm pretty quickly.

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Doctor Li: Is there any question from Hussein or Abdallah?

Yuhao Li: I don't see any questions

Hussain: Oh, I don't have any questions. Yeah. I'm here to help this team.

Doctor Li: So, are you serious on campus? So where are you now?

Hussain: Yeah, I'm in Tomson.

Doctor Li: Yeah, I guess they may need your help. Maybe next semester, I guess.

Hussain: Yeah, as a postdoc. So, he's working with a couple of research projects, and right now, he's also helping a little bit with the ECE 525 class.

Doctor Li: It's good to know.

Hussain: Thank you, a nice presentation.

Team 5: Thank you for your time.

Doctor Li: Yeah, they are going to give the presentation. I think they will post the presentation. I believe it' s around 9:30, so I will send EMAIL to everyone. I guess. Basically, the same thing, but they are going to use a poster to give the presentation on this coming Friday.

All: Thank you. Thank you. Thank you. Good bye.