EE/CprE/SE 492 GROUP PROGRESS REPORT

Group number: 14
Project title: Development of IoT Components for the CDC
Client: Daji Qiao
Advisor: Daji Qiao
Team Members: Jacob Foster, Megan Litterer, Jake Martin, Justin Tyler, Noah Frederiksen

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- **Project Summary:** We are making several IoT (Internet of Things) devices for the CDC (Cyber Defense Competition). The first deliverable is a virtual smart plug that the CDC can use as part of their main story. It will control if a website we are designing will be off or on. After that we will then make a miniature version of ISEAGE2.0 and our devices so a high school or community college can put their own CDC on. Another deliverable will be a physical IoT device. We have selected a camera for this which will be used in an anomaly (bonus mini-objective). A final deliverable will be completing last year's virtual camera. They had a device that was mostly functional, but the documentation has rendered it unusable.

- **Accomplishments** *(Please describe/summarize as to what was done, by whom, when and, collectively as a group since the last report. This should be about a paragraph or two in length. Bulleted points are acceptable as well. Please keep only your technical details related to your project. Figures, schematics, flow diagrams, pseudocode, and project related results are acceptable, but please ensure that they are legible (clear enough to read) and to provide an explanation. If researching a topic, please add a few details about what was learned and how it is relevant to the project. If two or more people worked on a single task, be sure to distinguish how each member contributed to the task. Specific details relating to the assistance provided to other members may be included here.)*
    - Jake Martin - Started development of documentation for CDC. This consists of documenting configuration steps, vulnerabilities, ports, services, etc. Researched a possible new vulnerability to implement into our vulnerable IoT virtual machine. This consists of a vulnerable FTP server that can be exploited using tools like Metasploit, which we will also have to document.
    - Megan Litterer - Worked on an arbitrary service website for future distributable project. Researed actual smart plug vulnerabilities from the CVE. Worked to implement these vulnerabilities into our website for the deliverable next week.
    - Justin Tyler - Worked on the physical camera. Tried to get it set up but ran into difficulties as ISU's network does not let devices like that to connect. I have been scouring their forums and FAQ pages to try to find an alternative. I am currently attempting to come up with the lesser evils of our options.
    - Jacob Foster - Got the network configurations successfully working for all of our virtual machines. Integrated all three virtual machines into ISEAGE 2.0. Started development of documentation for CDC.

- Noah Frederiksen - Started development of the website/service connected to our IoT VM. This service will need to be kept online during the cyber defense competition. This website/service will be implemented using Flask.

- **Pending issues** *(If applicable: Were there any unexpected complications? Please elaborate.)*
  Gaining access to the ISU network or acceptable alternative for our camera. Communicating with CDC staff on 2/2/22 revealed that the deadline for the deliverable was much sooner than we anticipated.

- **Advisor Input/Signature:**
  Please select one of the options below and sign.
  _____ I am pleased with the progress the team is making.
  _____ The teams progress could use some minor improvements which I will discuss with them.
  _____ The team's progress has some major concerns that I will discuss directly with Dr. Bigelow
  bigelow@iastate.edu , 515-294-4177

  Signature: _____

- **Client Input/Signature:**
  Please select one of the options below and sign.
  _____ I am pleased with the progress the team is making.
  _____ The teams progress could use some minor improvements which I will discuss with them.
  _____ The team's progress has some major concerns that I will discuss directly with Dr. Bigelow
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