

## **EE/CprE/SE 491 WEEKLY REPORT 9/13**

**January - December**

**Group Number: 1**

**Project Title:** Applying and Evaluating Blockchain in Energy Delivery Systems

**Client:** Grant Johnson

**Advisor:** Dr. Gelli Ravikumar

### **Team Members/Roles:**

Owen Snyder - Frontend/UI Developer

Josh Edwards - Backend API Developer

Emileo Xiao - Testing/Evaluation Lead

Dylan McCormick - Lab Integration Lead

Thai Pham - Blockchain Lead

**Weekly Summary** (Short summary about what the group did for the week. This should be about a paragraph in length. These are just a few questions to help you get started. What was the overall objective for the week? In general, what tasks were completed? Were there any changes made to the project?)

Overall objective week was to get the previous group's project running smoothly. There have been some issues with the VM's and account privileges. We almost have a local node network communicating which would serve as a good starting point for how our project should develop non-locally.

**Past week accomplishments** (Please describe/summarize as to what was done, by whom, when and, collectively as a group. 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. Do not include classwork, such as individual reflection assignments, and group meetings as part of your duties.)

Owen Snyder - Helped develop powerpoint presentation for PIRM meeting (wrote about current technical challenges and semester goals). Reviewed current project status and Previous Team's repository to get a better picture of what our team needs to accomplish in the next weeks. Reviewed ReactJS Docs to become more familiar with conventions and how the framework will tie into our project.

Josh Edwards - Worked with Javascript and propping up smaller backends to further my understanding of JS as I haven't used it in many intense projects such as this. Gained understanding of the current backend framework and outlined what aspects of the backend will need to be refactored to supplement the new data source.

Emileo Xiao - Set up Caliper to watch the performance of a locally run blockchain with 2 nodes. Took note of the benchmark report so we will know what information will be displayed for the user in the frontend/UI.

Dylan McCormick - Contacted advisor to discuss plans for retrieving data from their systems and possible development of an application on their end. Spent time looking through the previous project and attempting to get it running to get an idea of how to change the project for new requirements.

Thai Pham - Set up Ubuntu on a VM to run HyperLedger-Fabric and set up a network of nodes. Currently troubleshooting issues with docker on the VM but is running significantly better than attempting to run things on Windows or Ubuntu on Windows.

**Pending issues** (If applicable: Were there any unexpected complications? Please elaborate.)

Owen Snyder - UI Development is somewhat at the mercy of the data our network will be receiving from PowerCyber Labs, so my efforts will be better put to use helping Dylan and Thai work on and complete a working version of that system before the UI sees substantial development progress.

Josh Edwards - Only challenge I have at the moment is getting administrative privileges on the VM's, I am able to keep myself busy in the meantime working with JS and getting better with that so when everything is up and running, meaningful development will start right away.

Emileo Xiao - While Caliper was able to run locally, it will be another challenge to run it on a docker container on a different system connected to multiple systems. Getting docker set up correctly with Caliper running needs some time.

Dylan McCormick - Contact has been a bit slow since both parties are busy with work. The previous project may have passwords/other information we don't have access to currently.

Thai Pham - Docker is currently not working as intended on the VM so there is troubleshooting going on to figure out how to make the containers work for the nodes to run.

**Individual contributions** (Creating this section is optional, but it is Required to include the “Hours Worked for the Week” and their “Total Cumulative Hours” for the project for each member somewhere relevant in your report. Your individual weekly hours should be at a minimum of 6-8 hours for this course. So please manage your time well. Also, ensure that individual contributions support your claim to the weekly hours. Be honest with the reports.) NAME Individual Contributions (Quick list of contributions. This should be short.)

<b>Team Member</b>	<b>Contributions</b>	<b>Weekly Hours</b>	<b>Total Hours(from this semester)</b>
Owen Snyder	Presentation, Bi-Weekly Report, Reviewing front end design decisions and familiarizing with ReactJS	7.5	7.5
Josh Edwards	Presentation, Biweekly report, JS practice, Working with bash scripting	7	7
Emileo Xiao	Presentation, Biweekly report, Caliper running locally	8	8
Dylan McCormick	Presentation,	6.5	6.5

	Biweekly report, Facilitating communication with Advisor, Previous team project testing		
Thai Pham	Presentation, Bi-Weekly report, Running HyperLedger-Fabric locally, setting up VMs and troubleshooting docker	10	10

**Comments and extended discussion (Optional)**

Feel free to discuss non-technical issues related to your project.

Currently, we have sent multiple emails and attempts to get into contact with our faculty advisor to set up meetings for PowerCyber Labs and get VMs running. There has been very minimal replies/communication between us.

**Plans for the upcoming week** (Please describe duties for the upcoming week for each member. What is(are) the task(s)?Who will contribute to it? Be as concise as possible.)

Owen Snyder - Organize weekly or biweekly work sessions to get the team into a steady working cycle. Aid Dylan and Thai with getting the blockchain network officially running and receiving data from PowerCyber Labs. Continue Reviewing ReactJS and begin development on a simple Dashboard for the UI.

Josh Edwards - Get previous teams backend running and communicating with the other portions of the system, talk with Owen, Emileo, Dylan, and Thai about communication avenues, protocols, ect.

Emileo Xiao - Once we get our VMs from our faculty advisor, it will be possible for me to set up Caliper on one of them and try to connect to Thai’s Ledger that are running on the other VMs.

Dylan McCormick - Keep up contact with Advisor and continue discussion of plan for creation of a module that will provide physical data for our usage.

Thai Pham - Stay in contact with Grant for any questions, mostly just get the nodes to run locally first and then transfer over to the VMs from PowerCyber to scale to what we plan for the foreseeable future.

**Summary of weekly advisor meeting** (If applicable/optional)

(Provide a concise summary on the contents and progress made during the advisor meeting.)

Talked to our client about our current progress and our future ideas. Currently, almost everything works locally but we need to install/run on the PowerCyber Lab's hardware. Our client is going to help us get in touch with our faculty advisor since he works in PowerCyber Labs and get us the resources we need to integrate.