EE/ CprE/ SE/ CybE 492 -sdmay23-02
Simulating Cyberattacks on a Power Grid to Determine Potential Impacts
Week 1 Report
1/30/23 - 2/18/23
Advisor: Benjamin Blakely

Team Members:
- Jake Stanerson – Developer lead
- Noah Peake – Developer lead
- Hrijul Balayar – Tester/ Developer Support
- Michael Gierek – Developer Support
- Conner Spainhower – Developer Support
- Cole Medgaarden – Tester/Documentor

Accomplished Tasks:

- Branch merger into GitHub – Cole
    - Created a branch on our repository to be able to pull others source code to be able to continue additions onto the area of the grid.
    - Discussed with Noah and Jake about how to formulate the grid and interpret its components.
- Documented Meetings – Cole
    - For our advisor and team meetings, I keep track of ongoing/upcoming tasks and prep them for upcoming meetings.
- Create Outline for Attack Ideology – Noah
    - Started an outline for documentation to support our decisions for what attacks we choose to simulate. As well as how we choose to create the simulated attack in order to best represent a realistic situation.
- Begin Grid Creation – Noah
    - Coded a section of the grid to simulate, as discussed with the group, in order to build a platform to expand off of for the rest of the grid. This will also be used to help test for potential issues before mass grid creation is begun.
- Grid Creation Interface/Environment - Jake
    - Bash environment is off the ground and commands are being implemented, need to toy around with it to make it less complicated/overwhelming to use. Trying to remove as much programming as possible in this environment. Will hand this off to Conner when we get far enough into this that there is enough work to just be tackled by one person. I will stand by and help if he has any questions, and will begin work on grid and cyber attack integration.
- Helping with Grid Creation - Michael

    - Starting to support Cole and Hrijul with the grid creation and development. Discussing parts of the grid to work on and pushing it to GitHub so we can begin putting together a full grid.
- Helped with Grid Creation Interface/Environment - Conner
    - Assisted Jake with the Bash environment and helped get it up and going. Working on simplifying the use of it so the rest of the team members can use it as well. Also trying to implement more commands to benefit any needs we need from the environment.

Pending Issues:

- Ensuring the architecture of our base grid loosely matches that of the one we are creating in PandaPower (i.e. making sure buses and lines are placed properly)
    - Will be meeting as a team over the weekend to discuss this issue, and if we need further clarification we will reach out to our advisor.
- Ensuring components instantiated in grid are of the correct type
    - Removing ambiguity in grid model we are basing code off of

Team Member	**Contribution**	**Weekly Hours**	**Total Hours**
Jake Stanerson	Grid Creation Shell	5	10
Noah Peake	Attack Documentation and grid creation.	5	10
Conner Spainhower	Grid Creation Shell	3	6
Cole Medgaarden	Documented meetings, created branch on GitHub, and discussed how to start grid creation.	3	6
Michael Gierek	Supporting grid creation with Cole and Hrijul to put together small parts of the grid to GitHub to eventually fully implement the whole grid.	2	4

Hrijul Balayar	Discussion and revision of grid documentation. Providing support for grid creation and setting up Github to merge and create new branches. Pulling schematics from Github to revise and figure out a gameplan.	3	6

Upcoming Tasks:

- Continue additions onto the started grid (after confirmation that we are interpreting the schematic correctly)
- Continuation of enhancements for user grid shell environment