Group: Jon Bauer, Becca Fried, Ryan Keihm, Haocheng Huang

Activity 1:

* What is the URL of your Github project?
  + <https://github.com/JonBauer123/csec380_final_project>
* How did you break up your projects and what are the security ramifications?
  + We broke the projects up into each activity in the final project. The reasoning for this is each activity should be a shippable product. For example, when we get the login page set up and have all of the functionality implemented, that is a shippable product. We did a lot of work on that. But say a milestone for that is having the authentication with the database work successful and sending the user to the landing page.
  + The security ramifications for this is it allows us to build a secure application first and then allow us to backtrack and implement the vulnerabilities only as we need to. This way if we no longer want on implemented we can revert back to an earlier commit.
* How did you choose to break down your Epic into various issues (tasks)?
  + We decided to break the Epics up based on activities. This gave us a good shippable product by the time that we were done with each one and also allowed us to feel as if we are accomplishing goals and making progress. This will allow our group to keep morale up and continue on with sprints until we build enough of the sprints to finish another activity, in our case being an epic.
* How long did you assign each sprint to be?
  + Each sprint will be about 1 week which will allow for our group to keep pushing along with the epics. The reasoning for one week is justified by multiple team members along with each epic not being made up of many sprints with the exception of 3 and 4 which will make the epic take longer to reach.
* Did you deviate from the Agile methodology at all? If yes, what is your reasoning for this?
  + We did not deviate much from it all the epics are laid out in projects, all the milestones are laid out in sprints, and stories are being told with cards under the projects. There may need to be some more milestones once we realize there are some more tasks to do. This would be the only deviation from this methodology and with it being all of our group's first time working with it there are bound to be some mistakes which we will have to go back and correct.
* How do you ensure that after each issue/milestone that security has been verified? How would you identify such issues in an ideal environment?
  + In an ideal environment, you could run a security testing on the code. There could be a code audit and then a small penetration testing done on the web application. This would ensure that security is maintained throughout the development period. To ensure security is maintained in our web application we will ensure there is good code practice used throughout the project which will mitigate most of the issues. By the end, we will have by design a couple of vulnerabilities, but they are planned.

Activity 2:

* What Web Application security mechanisms are involved in your topology? What security mechanisms would ideally be involved?
  + We have not implemented too many Web Application security mechanisms, with the exception of secure code. We have kept the project on the simpler side to ensure we could implement it as securely as possible. In an ideal environment along with secure coding practices, we would implement many other things. This would include things such as a load balancer and a cache server. This would help mitigate denial of service due to the servers overloading. Another security mechanism we would implement is SSL encryption and gettings a legitimate certification for the web application.
* What testing framework did you choose and why?
  + We chose to use pytest as it will allow us to test quickly and easily, but still in an effective manner. It also seems to have great integration with TravisCI which is just another reason to choose it as our testing framework. Tests will be written along the way to ensure that the code and infrastructure that is being set up is functioning as planned.