Creating CSGLabs application and websites

IUS Computer Science Group

President - Mathew Hartman

Vice President - Adam Isaac

Secretary - Zac Clifton

September 8, 2019

Abstract

The CSG at IUS is proposing a Senior Capstone Project that involves creating a Website, Application, course list and labs for our virtual training environment. This would not only be used for the Computer Science Group but would be open to the department to use for classes, events, and lectures.

Introduction

The action that sparked this endeavor was Louisville Geek donating a server to the Computer Science Group (CSG). After we began to work on the application and infrastructure now know as CSGLabs. We have so far have requisition our own domain, set up orchestration (Rundeck), Internal auditing, and a website, csg.ius.edu. We are continuing to improve and continue this endeavor into the 2019/2020 year.

Limitations/Problems

With our current set up we are able to host virtual machines but not at the scale we need. We are currently working with old servers and are trying to gain funding to gain better servers. However, the biggest limitation is the lack of man power the Club has. This is the reason for bringing in the Capstone groups to work on this project. This is also a very important project too because the school will be using this for classes and supplementary materials. This comes more into scope when that all new classes in the Cyber-Security Major will be using this project.

Objectives

The following tasks are expected to be completed by the Web Application team:

1. Work with the current hardware limitations so the whole operation does not go down if 50 students try to do their labs all at once.

2. Create a web page that dynamically pulls all Class modules and/or Lab Modules so the user can add a course to their account.

3. Create automation to supply a personal page for each user that shows their Homework labs and labs they have signed up for, and any other detail that my be necessary.

4. Create a web page to register users securely.

5. Create an API and GUI for lab creation.

6. Create the lab page were the VM's will be forwarded to the user.

7. Create and update the CSG main web pages during the course of the project.

8. Automate emailing users about password resets, account creation, outages,etc

9. Assist in automation of lab management (creation, and tear down)

10. Store analytic about lab usage, time spent on each lab, completion rates of the labs, etc.

11. Analyze data and display analysis to the public. (ex. current users)

12. Create any web page and/or back end deemed necessary for the project or by the group in general.

13. During the project it is expected that each member creates detail documentation of all work.

14. Once the main functionality is completed it is expected for each member to create at least one lab of a topic the member is interested in for the public consumption.

Assessment

Upon the the first meeting of the month a representative of the team is expected to present the teams work to the student body. Upon presentation they will receive feed back and will try to make the application better for the end-users and maintainers.The project will be considered complete when all core functionality is present and the operation can sustain all normal operation.

Leadership

As of this moment, anyone on this team will report to Jason Gallavin as the Web Application lead. His duties are:

1. Administer work to the Web Application team.

2. Confirm all code entries are properly tested and up to standards.

3. Provide support and guidance to team members.

Jason Gallavin will have the final say on Web Application matters, but must take into consideration the majorities opinion.
As of this moment, anyone working on the project will report to Zac Clifton as the project Lead. His duties are:

1. Mange meetings and duties.

2. Audit all work on a monthly basis to make sure the standards of the project are being met.

3. Provide support and guidance to all members.

4. Break any ties for any group decision.

5. Work in any lacking area that needs additional help.

These positions can change at any time, and the group will be notified of the change.
All work will be posed on cards on the CSG Trello board and should be accessed to figure our the work for the time allotted.

Conclusion

We want to think you for your consideration of this proposal. If you have any questions please contact us at the provided emails at:

Mathew Hartman - matdhart@ius.edu

Adam Isaac - acisaac@iu.edu

Zac Clifton - Cliftonz@iu.edu