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Tutorial – Jim Mahoney

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### Learning Summary

This semester I practiced five of the six most valued tech skills<sup>1</sup>. Those skills consisting of sql, python, linux, javascript, and aws. The only skill missing being java, which I do have experience with. In particular, I practiced sysadmin work such as creating a Linux cloud server using Linode.com. From there, I initialized the LAMP stack and hosted my own website. I went on to create projects utilizing each part of the stack. I also practiced several backup standards including automating tasks via cron.

Not long after, the server was brute forced by several clients and I took the server down and wiped it out. I then created a new server using the backups I had previously created and practiced server hardening. Two methods in particular was the utilization of Fail2ban and more complex passwords. Using several methods, I made the server more secure and have been monitoring the access log files ever since and there has yet to be a successful brute force despite many attempts.

I practiced using proper applications, such as Windows Powershell, in order to properly interact with the server. I replaced old and outdated applications such as Putty. For one thing, this allowed me to properly use SCP. With Powershell, I practiced writing basic scripts as well as functions, such as alias, to create a more efficient workflow for myself as a sysadmin. I have also been using SSH to connect with a proper key system to ensure the server I am the administrator of is secure. I made an account and practiced using Github.

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<sup>1</sup> <https://www.hiringlab.org/2019/11/19/todays-top-tech-skills/>

I researched much of the technology used in current sysadmin careers. My findings led me to study node.js, Django, and a small bit of Flask. My exposure to this tech has led to several projects that I intend on doing over the winter break for further practice. I also took advantage of several opportunities to practice certain techniques in different ways. The first time I created my server I used phpMyAdmin to create the SQL database. The second time, I did it manually via commands.

In addition to researching current technologies, I also did a lot of reading about those who currently work as sysadmins and developers. In general, I found that I would much rather been a sysadmin than a software developer. I also found out quite a bit that I didn't know about the career. Such as how some hiring practices use keyword systems that can encourage you to have a 30+ page resume. Which, to me, is unfortunate but it is what it is. Also, how staying at the same job for more than several years is typically inadvisable. Pay increases for IT workers tend to come from working at a job for a few years and then moving on to a new location and being paid more. Continuing that cycle until you are working somewhere you enjoy and being paid considerably more. This is also rather unfortunate to me, that employers give promotions so rarely, but again, it is what it is.

As the semester progressed, I branched out from my server to practice new technology with Amazon Web Services (AWS). AWS is one of the fastest moving technologies currently available and will likely be a very useful skillset to have. There are many tutorials on the AWS website and I have gone through all of the ones that seemed as though they would pose a challenge. As a result, I'm far more comfortable with AWS in a relatively short period of time.