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|  | Heritage College |

Memo

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| To: | Alain Beauparlant, Sandra Stark |
| From: | Martin Lurette |
| cc: | Derek Randall |
| Date: | August 22, 2016 |
| Re: | Summer 2016 Co-op |
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**Introduction and Summary**

From May 24th 2016 until August 19th 2016, I was employed by Versaterm Inc. as a co-op student. My supervisor was Derek Randall. Versaterm is a privately held corporation specializing in information and management systems for public safety agencies. Its mission statement is that “our people understand that technology is an enabler and not a solution unto itself”.

**Position Description**

My position at Versaterm was that of an IT programmer. My day-to-day activities could be boiled down into three components: IT, research and programming projects. For the IT portion, I would on occasion be asked to either set-up or repair a computer (usually a laptop) for an employee. This involved installing the specific required software for that user and making sure everything is in working order. Once the laptops were set-up, I then created a system image and swapped out the hard drive for a newer SSD. Working with some of the company’s older laptops involved the same steps, but usually required an operating system upgrade/reinstallation or, in some cases, a repair of some sort to the systems hardware. For damaged computers that were beyond my scope of expertise, I was responsible for contacting customer support at HP and/or Microsoft to receive replacements or to ship them out for repairs. Other IT oriented tasks were given to me to help out other people in the office. These were tasks such as: helping the admin staff with setting up a webpage for clients to sign up for an upcoming conference, setting up web conferencing for a presentation or cloning virtual machines.

Research was involved in all aspects of my job at Versaterm as I would often be presented with a real working problem that needed to be dealt with. Searching for error codes, finding information on the server hardware before an upgrade, troubleshooting old scripts and finding PowerCLI API documentation are good examples of the type of working problems I have dealt with. Research was also crucial for my programming projects because I was using new programming languages (PowerShell, Bash, Batch and Visual Basic) trying to come up with solutions to problems that were unique to Versaterm.

My main programming projects were titled: Windows 10 Cleaner, VMsearch Tool and Who’s Connected. Windows 10 Cleaner was a project that was given to me to speed up the removal of preinstalled apps (a.k.a. “bloatware” such as candy crush, Minecraft, Xbox app, etc.) and to disable automatic updates. The bloatware ate up resources and the automatic updates had a nasty habit of downloading and installing at inconvenient times (like during a client presentation). I created a PowerShell script to automate this process.

VMsearch Tool was originally supposed to be a temporary tool to help people find the location of virtual machine’s (VM) host during a vSphere upgrade. This information was presented via an HTML page using JavaScript to search a list of VMs and their corresponding parent folder and host location. After implementing this project, it was determined that it is a useful tool to have around, so it was later updated and is still being used

My final project of the summer, “Who’s Connected” was an attempt to recreate some functionality that came with an older version of VMware to allow users to determine what VMs are currently being used. This information was presented to employees via HTML page. The page is currently being hosted on an IIS server on a virtualized Windows 7 machine. The virtual machine is also where the scripts are being run using Windows Task Scheduler to run a Visual Basic script (to run the other scripts silently in the background and then kill the process when it is done) which runs a Batch script (which points PowerShell to the PowerCLI infrastructure) which runs the PowerShell script using PowerCLI cmdlets. The PowerShell script then compiles a list of relevant information and converts it to HTML. The end result is a static page that contains a real-time list of VMs that are actively connected along with a list of the most recent people to have used it. After completing this project, I had used the skills I had gained to update the VM Search Tool project to update itself automatically as well.

**Technical Environment**

The technical environment at Versaterm is impressive. My personal workstation consisted of my desktop PC running windows 10. There are many different operating systems being used at Versaterm depending on the project being worked on as well as the preference of the employee, from Windows to Mac to Linux. The main programming languages I learned and used this summer were PowerShell, Bash, Batch and Visual Basic. These languages proved to be very useful and powerful administration automation tools. VMware provides the virtualization software used, which also proved very useful, especially when creating PowerShell scripts that alter registry keys. The servers use Windows server 2008 as an operating system. Other software I have had the opportunity to learn how to use are file transfer applications (like PuTTY and WinSCP) and web conferencing software (GoToMeeting).

**Skills Used and Acquired**

I had the opportunity to use the skills I had learned in the previous school year throughout my co-op experience. The technical skills I relied on the most were the hardware and networking skills I had gained, although my HTML and JavaScript experience played an important role in my projects. There were also plenty of times when the skills I had learned in Web Programming regarding website design and flow were very important. As for the skills gained over the summer, PowerShell scripting is at the top of the list. I also got a hands on experience of the development life-cycle by continuing to manage and update existing projects to improve their efficiency and user-friendliness as opposed to school assignments that never get touched again after being handed in. This experience of the development life-cycle was due to the fact that I received plenty of feedback on my projects, not only from my supervisor, but from employees who actually use my projects. While I used the skills gained from my time at Heritage over the last year, I feel that this experience has solidified my knowledge in these areas, and I feel more confident in demonstrating those abilities.

**Evaluation of Co-op Experience**

Overall, I feel that I was well prepared for this co-op position. Anything that was beyond my capabilities was patiently explained at length to me, and my supervisors and co-workers were always available if I had any questions. The highlight of my co-op work term was releasing my project “who’s connected” to all of the employees. I had asked a few people to test it out a week before, and had made some changes according to the feedback I received. That being said, I was still quite nervous before sending out the email to everyone in the company explaining the project and how to use it. It only took a few minutes to get replies thanking me for this project, saying that they found it useful. At that moment I felt very proud of my project knowing that people were going to use it on a regular basis. I don’t know if there is anything I could have done to prepare myself more for the work that was expected out of me, nor do I have any suggestions on how the co-op work term could be improved.

**Conclusion**

In closing, I feel very lucky to have had this experience. This opportunity has given me a new set of skills that I feel I can apply to my future career. I’d like to take this chance to thank both Versaterm and the co-op cordinators at Heritage for all of the work and effort they put into helping students gain valuable experience.