Dorielis Padron

Internship Experience Report

Overview

In January 2015, I was offered a great opportunity to participate in the Florida Department of Transportation (FDOT) in their IT Department. The internship consisted of 300 working hours that started on February 9th, 2015.

Ever since I was young I had a passion for technology and thought that pursuing a career in technology would be my calling. I wasn't so sure until I participated in the internship at FDOT, where I experienced firsthand what working in the Technology field was like. In this internship I acquired a lot of knowledge, as well as put my previous knowledge to the test.

I was able to work, and learn alongside a group of intelligent individuals. The IT team I got to be a part of consisted of the helpdesk administrator, Alberto Perez, the system analyst Luis Morales (Microsoft expert), the network administrators Denelia Edwards, Kuanming Li (Cisco expert), and Jose Bouza, as well as three other interns: Andrew Appel, David Andrade and Daniel Roman.
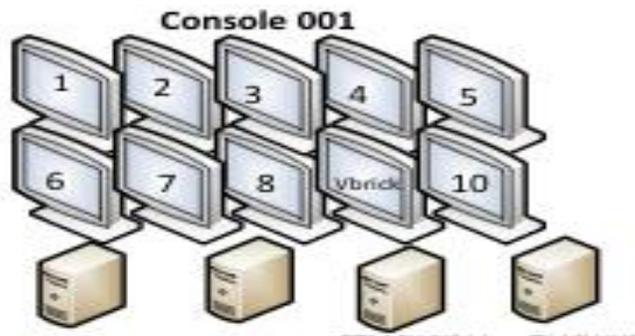
David Gali the IT manager at District four, communicated from the start that I would get a feel of what a day as an IT Technician at a company was like. I was told I would be setting up, fixing, and uninstalling computers as well as making and managing cable connections. To my benefit, I did even more than the mentioned tasks.

A Day as an IT Intern

The day at the DOT started off with motivation from the moment one walks in through the door. I felt important, because I knew I was making a difference with whom I helped or what I fixed. The first thing I would do was check the help desk for any tickets. The helpdesk was a website where the company employees would go to submit a ticket if something wasn't working as it should be. The employees that mostly needed help were the operators.

    I.   Operators

        a. The operators sat in a control room full of screens and computers. They had video cameras projected on screen in which they monitored traffic for highways and major roads. If they saw an accident occur or pedestrians in dangerous situations it was their job to report it. This way, drivers got the help they needed right away. Solving the operator tickets therefore, was top priority.

b. Operators had a large quantity of computer screens and workstations. Each operator had about ten screens; which I learned, were operated through a KVM Switch (a device that allows switching the mouse and keyboard from computer to computer).

c. In the control room: I removed viruses from the computers, fixed KVM switch connections, solved printer problems, and helped re-connect the connections to the cameras through the computers (workstations).

II.   <u>Office Employees and Managers</u>

    a. The office employees and managers took care of everything else that went on at the company: inventory, schedules, training, plans, meetings etc.

    b. Helping office employees and managers consisted of: Setting up computers for new employees, resetting employee computer passwords, helping employees use all computer programs, fixing Internet connections, and installing new hardware and software.

    c. I learned how to reset passwords for users through Active Directory. Active Directory was a library of all the employees, as well as all the computers in the company. I learned that in Active Directory it is extremely important to identify each employee has adequate rights. I was able to give and take employee rights'. Including, the power to view the information (Computer activities and documents) of another employee.

After all the tickets were taken care of, I checked that all the equipment was working properly in the room. Among many devices, I got to learn how to troubleshoot a Smart board. Troubleshooting consisted of ensuring that the stylus used for the board was working properly; connecting the pen, calibrating it, testing it out and making sure it was placed neatly back in it's box for the employees to easily find and use.

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Although the help desk tickets were taken care of in the morning, it was necessary to constantly check the helpdesk website to see if any user was still having problems. If they were, I made sure to be in their presence as soon as the ticket was sent. If I couldn't fix the issue, I would research the problem online and try to get back to the ticket client right away, with a solution. Other than the morning duties and help desk tickets, there were many stimulating projects that I got to take on.

Inventory

Being a part of the IT department meant taking care of inventory every three months and sometimes, every week due to audits. FDOT is full of technology; most of the devices and equipment in the facility belong to the IT Department. Therefore, I had to check that all the devices were in the locations reported and if not find them, which wasn't so easy at times. Once, I checked every office in the facility for one monitor! However, I learned that it's very important to have all inventory in the right place for easy tracking. If a device isn't tagged with an inventory tracking number any person can take it, no one will ever notice its gone missing. The best experience I had doing inventory was on field day.

Field day consisted of taking inventory of all the ITS devices along I-95, North bound and South bound from Commercial to Palm Beach. I got to learn about all the devices used when monitoring traffic and how they were connected. I learned that there were switches connected alongside highways sending out camera feeds. I learned that a Wavetronix is a device that sends out waves. When one of the waves hits a car it gets bounced back, depending on the frequency of how many waves get bounced back, communicates if there is heavy traffic or not.
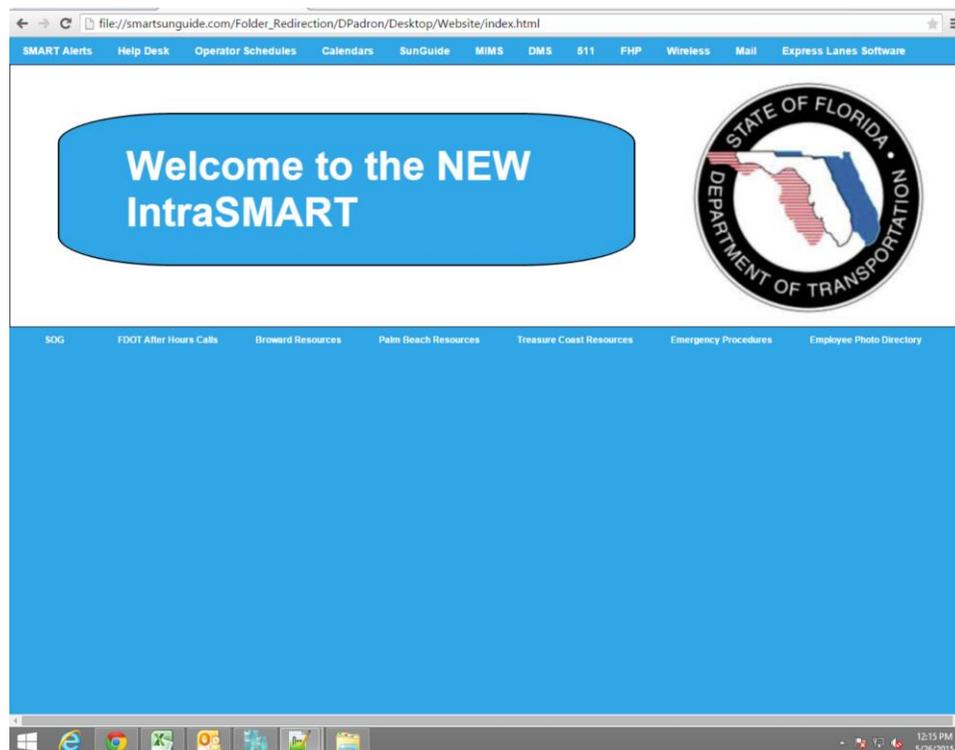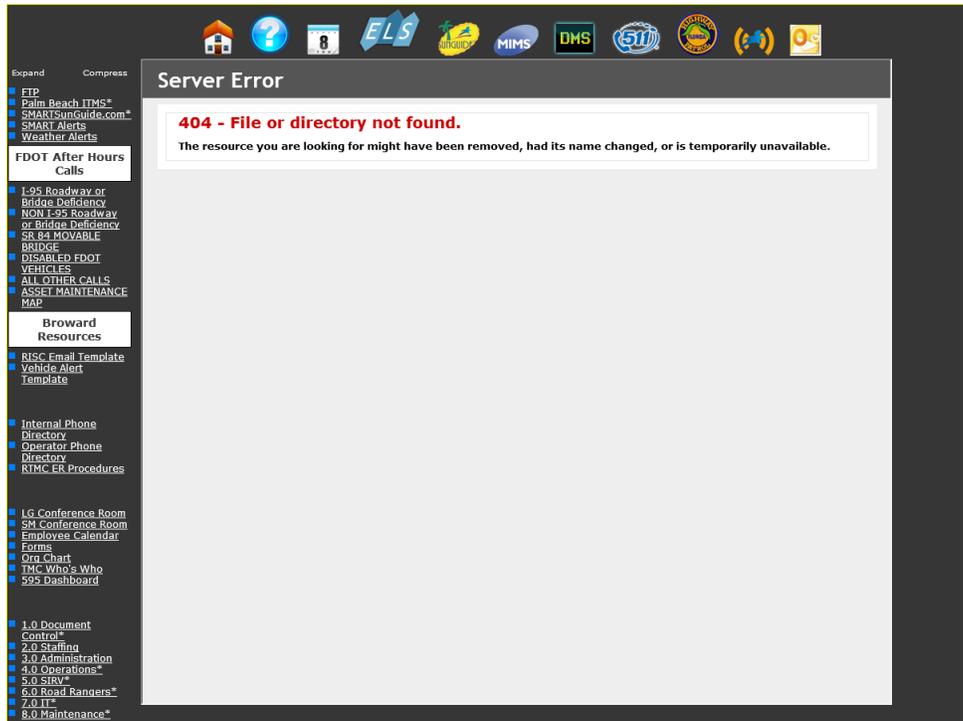
From doing inventory I was able to explore the DOT building and learn more about the company. I also got to meet more of the employees that I hadn't seen or known about. To be more specific, FDOT has more than one location with devices belonging to IT. From doing inventory I was able to go to all these places, such as a facility in Palm Beach, Fort Pierce and the Florida Highway Patrol center in Davie to name a few.
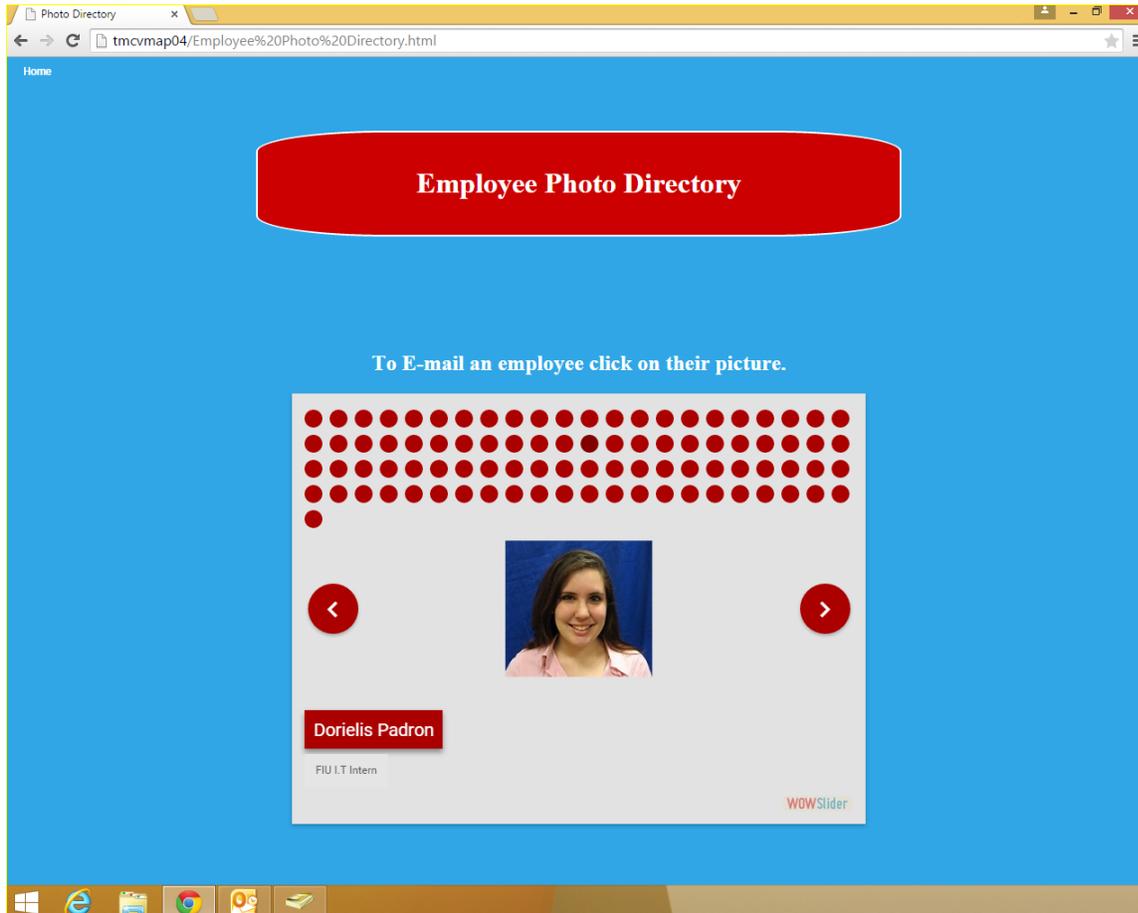
Website

When I got to the DOT I noticed that the company's only weakness was their private site. The website included training guides for the operators, the employee photo directory, links to important websites such as the helpdesk ticketing system, etc. The reason why I found the site to be a flaw was the fact that it was so poorly designed, most pages didn't even have a background, and some of the links didn't link anywhere. The employee photo directory for example, if one were to click on a person's email it didn't like to e-mail. Therefore, one would have to copy and paste the email and open outlook and then paste it there, very time consuming. Many of the website features didn't have feedback; the main links instead of being worded out had picture icons, which weren't very straightforward. I remember once, having to find the ticketing website and having to go through every icon to figure out which one linked me to the helpdesk system.

I would have to say I learned the most while helping create the new site. David Gali instructed one of the other interns and I to do a new site that would replace the poorly designed site.

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I learned a lot about coding a website using HTML5 and JAVA. The task I had the most fun doing for the site was the Employee Photo Directory. I made a directory that was interactive, it had beautiful transitions and one can easily find any employee by hovering the mouse over the bullets. This time I made sure that the emails linked to Outlook. I made it so that if one were to

click on someone's picture, email would open up with a new message addressed to the employee selected.

Setting up and fixing computer hardware and software

Throughout the course of my internship new office employees were hired and some left therefore we had to set up new machines for some employees as well as kill others. By killing I mean the process of wiping a computer's hard drive clean. When wanting to dispose of information on a computer the best way to ensure that the hard drive is wiped is by killing it, this leaves no trace behind of any of the information once stored. Thanks to this job I learned how to do kill disk efficiently.

When setting up new computers I learned how to implement created Virtual machine images. A virtual machine image is basically how your new computer is going to look such as the background and what programs are going to be installed on it. For example, everyone in the IT Department starts off with the same virtual image; all the maintenance department workers have the same virtual image, and so on. This way it's faster to set up a new computer and this way everyone gets the programs needed for their job right away.

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Apart from the image, new updates have to be installed since the images could have been created a while back. This way everybody's machine is up to date, updates also meant updating firmware and drivers to ensure everything was working how it should be. Every once in a while a person's software would crash or stop working properly. It would be up to the IT department to remove the program and re-install it. Many times we would have to perform Malware scanning to ensure that no viruses were present and if so remove them. Sometimes it even meant saving a person's files and re-imaging the whole computer.

Cable Management

When I first started the internship, the first task I was instructed to perform was to perform cable management in their Fort Pierce location. Mr. Gali informed that this location was being set up to serve as a backup incase the Broward location ever failed. When I first arrived to the Fort Pierce location I noticed that all the devices used at the Broward control center resembled the ones at the Fort Pierce location but none of them were connected. This meant that the interns and the rest of the IT department would be performing the installations. I learned how making cables look neatly connected ensured better connectivity reliability. If cables were all thrown on the floor it would be very hard to locate a cable, not only that but it's a safety hazard as anybody can trip on a cable. I was able to make many of the consoles at the Fort Pierce center look neat by simply tying them up with Velcro wrap.
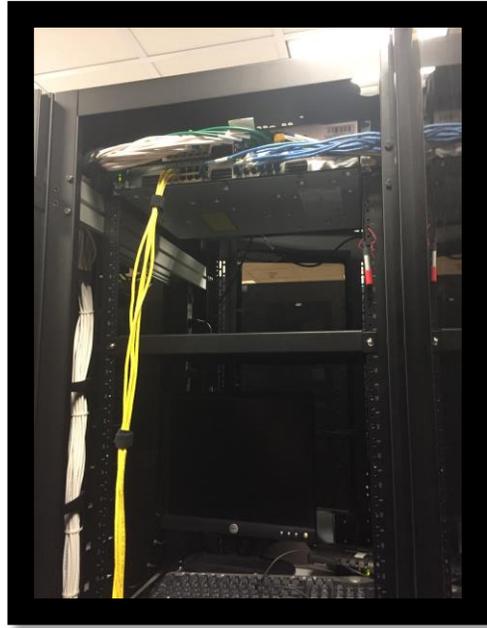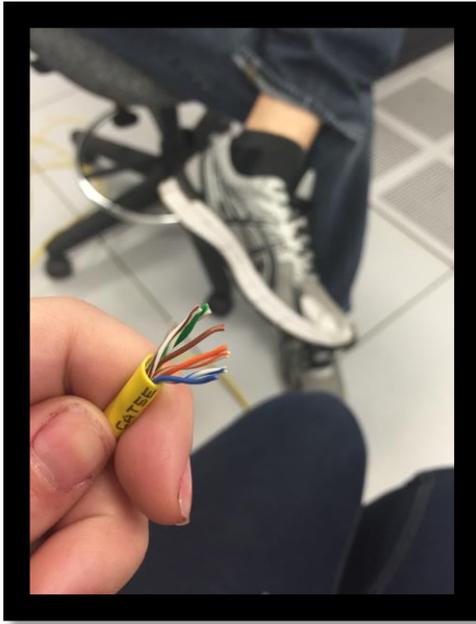

I also had to create a chart on how all these console were connected to their many devices and what ports these devices were on. I created this chart manually and then recreated it on Excel.

	Console	Port	Connected :
	Console 1		
Field		13	Moxa Server
		14	PC 7800
		15	PC 4600
		16	Vbrick
		17	VOIP
		18	Empty
SmartSunGuide		5	DC 7800
		6	Laptop
	Console 2		
Field		19	DC 7800
		20	DC 4600
		21	VBrick
		22	Moxa Server
		23	Laptop
		24	VOIP
SmartSunGuide		7	DC 7800
		8	Empty
	Console 3		
Field		25	DC 4600
		26	DC 7800
		27	VBrick
		28	Network Printer
		29	Moxa Server
		30	Laptop
SmartSunGuide		9	DC 7800
		10	Laptop
	Console 4		
Field		1	Empty
		2	DC 7900
		3	DC 7800
		4	VBrick
		5	Moxa Server
		6	VOIP
Smart SunGuide		29	DC 7800
		30	Empty
	Console 5		
Field		7	DC 4600
		8	DC 7800
		9	VOIP
		10	Moxa Server
		11	VBrick
		12	Laptop
SmartSunGuide		4	DC 7800

Cable Creation and Installation

Where I mostly had to put my knowledge to the test was when Andrew and I had to make five Ethernet cables from scratch. To do this, we had to measure the distance it would take for a cable to run through the ground from one switch to the other. Afterwards, we would have to create the five cables in that length, run them through the ground up to the racks and ensure they worked properly.

Creating cables was something I had knowledge in before; I breezed through the cable making. I learned a very important lesson that day, when it was time to connect the cables; they didn't reach the destination switch. I learned that after measuring to make a cable to make sure to give the cable enough slack. It's better to have more cable that one can easily tie with Velcro than having a shorter cable that won't reach it's designated location. We ended up having to make five longer cables afterwards; to my surprise all the cables worked properly.

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Conclusion

Last but not least, I have to say that working at the DOT was a great experience for me in the field. I learned a lot, from something as small as a memory card installation, to something as complex as virtual machine creations. The connections I made with the people I met on the job, as well as all the knowledge I acquired will benefit me in my career. I can now say I know what to tell a person when they ask what I want to do for a living. I hope that I get more opportunities like this one in life. I feel prepared for any future obstacles I'd face in a technology career.