

**Internship Final Paper**

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## Introduction

For this course, I completed my one hundred and fifty hours of internship work with the Monarch Internship & Co-Op Office at Old Dominion University. This office serves as a centralized hub for work-based learning across the university. They work to promote innovation, collaboration, and a platform to build connections between the in-office team, students, and faculty on campus along with community stakeholders. Some core functions include connecting students to internships, co-ops, and other work-based learning opportunities, supporting employers in recruiting and engaging student talent, managing internship-related grants and student funding support, and providing career readiness support such as resume development and interview preparation.

For my internship, I set four specific learning objectives with my supervisor and director of the Monarch Internship & Co-Op Office, Dr. Barbara Blake, that I wished to accomplish.

These objectives were as follows:

1. Conduct a cybersecurity landscape and market analysis of higher education institutions to identify best practices for protecting student data and digital platforms used in internship and career services offices.
2. Assess the current digital workflows and data management practices within the Monarch Internship & Co-Op Office to identify potential cybersecurity risks related to student information, employer data, and internal systems.
3. Develop a cybersecurity best practices manual for the Monarch Internship & Co-Op Office that outlines recommended policies, procedures, and safeguards for protecting sensitive data and maintaining secure digital operations.

4. Design and deliver a cybersecurity awareness training session for Monarch Internship & Co-Op Office staff that introduces best practices for secure data handling, phishing awareness, password security, and responsible use of university technology systems.

I was very pleased with these learning objectives, as I felt they were very similar to the types of tasks and objectives I could potentially be expected to perform in a full-time, permanent career within the cyber security field. I was able to meet with my supervisor and discuss these learning objectives in my initial, onboarding type, meeting. We were able to establish what we expected from each other and make sure the learning objectives were what would best suit both what I wanted from my internship and what the office wanted from me.

### **Management Environment**

This internship was a remote position, as I was a fully online student, therefore the management environment differed from what an in-person position may look like. My supervisor and I agreed upon a management structure in which I would approach the tasks given to me like a cybersecurity analyst project. There was only one hard due date since it had to be set ahead of time for convenience, the date for my cybersecurity best practices presentation. Apart from this, it was simply expected that I would complete my other deliverables within a reasonable time, consistently communicating and coordinating when I would have each one completed, and produce my highest quality work.

Every week, with the exception of weeks when my supervisor was out of the country, we would have a check-in meeting. This meeting was an hour-long block of time meant to serve as an opportunity to discuss the work I had completed, ask any questions that would be more easily

answered outside of email format, and discuss the progression of my other in-progress tasks. Outside of these meetings, my supervisor was always available for questions and guidance through email or personal phone number if the matter was especially urgent.

I have always preferred remote or hybrid work when given as an option with in-person environments, so this type of management setup worked very well for me. This position gave me the ability to confirm my work environment preferences, as it presented a realistic, professional example of what it would be like within a full-time position in the field. This kind of setup allowed me to work independently and at my own pace while also having the ability to reach out and get assistance should I have needed it.

### **Major Work Duties**

The four learning objectives that I began the internship ended up with five deliverables that I was required to create and put in the work to complete. The first was a thorough examination of the current cybersecurity landscape within higher education institutions. In my formal report, I covered the following topics: the types of information stored within the systems of higher education institutions, why that data is appealing to cybercriminals, common cybersecurity protections and strategies present in higher education, key cybersecurity risks that higher education institutions face, examples of recent cybersecurity incidents and key regulations and cybersecurity frameworks pertaining to higher education institutions. This report required thorough research and application of analytical writing skills in order to create a cohesive examination of the current cybersecurity landscape.

The second objective I had been asked to meet was for me to assess the workflows present within the Monarch Internship & Co-Op Office. In order to achieve this, I create two separate questionnaire type documents. The first was comprised of questions that asked about the office and its workflows that were more non-technical in nature. Some question topics included: the types of information the office collects, which tools and systems the office utilized, and whether there were any rules and guidelines for employees to follow regarding data handling. The second was comprised of questions that were more technical and were intended to be forwarded to a member of the IT department since they would be more likely able to answer them in more detail. Some question topics for this document included: access management, remote access procedures, backup and recovery policies, and endpoint security tools. By receiving the answers to these questions, I was able to assess the workflows present within the office, which aided in determining which content I included within my best practices manual.

The next deliverable I was tasked with creating was a cybersecurity best practices manual specific to the Monarch Internship & Co-Op Office. This manual was to be both shared through the office digitally using Microsoft SharePoint and made into a hard copy for each employee. In my final manual, the following topics are discussed: an introduction, cyberattacks, cybercriminals, phishing, malware, password security, multi-factor authentication, network security, device security, and information security. Each section goes over key definitions, bad habits related to the section, followed by some best practices. Additionally, there are multiple graphics in the chart that I created myself in sections where I felt my explanations would benefit from them. It was a great opportunity to utilize creativity for a professional project.

The following are a couple of the graphics I included:

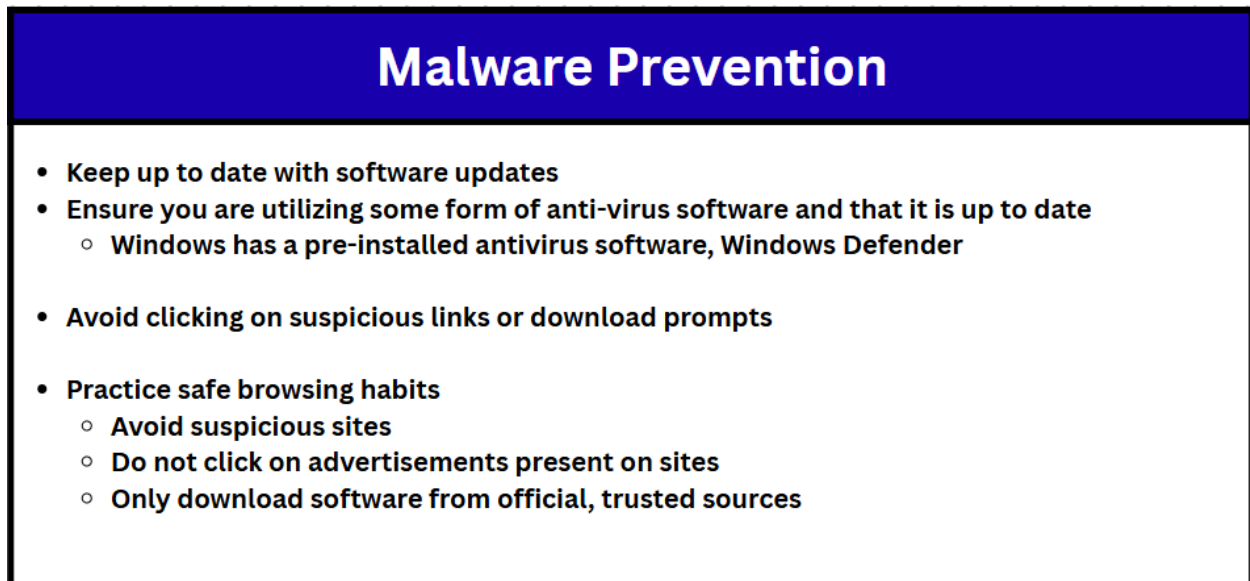


Fig. 1: A graphic detailing best practices for malware prevention

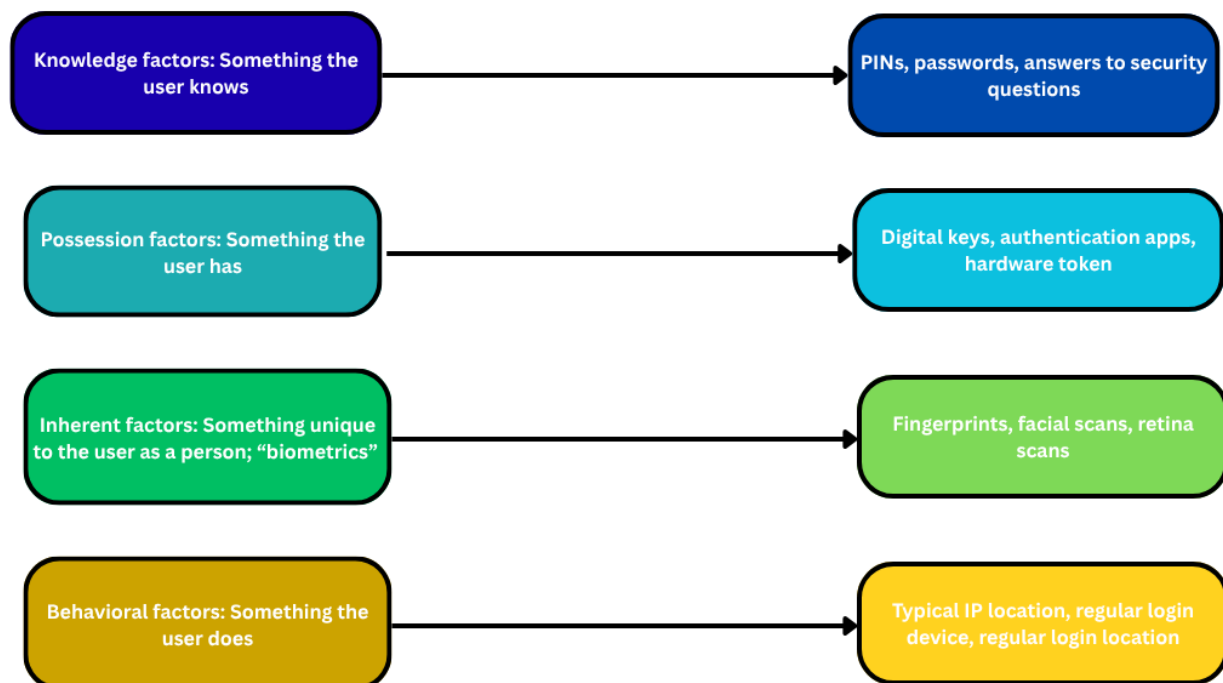


Fig. 2: A graphic details the different types of factors present with Multi-Factor Authentication and examples of each one.

Finally, for my last deliverable and learning objective, I was required to prepare a presentation detailing different cybersecurity best practices. I created it alongside the best practices manual, taking the information I had in the manual and formatting it to fit into the presentation. This presentation was given to the staff at the Monarch Internship & Co-Op Office and was roughly thirty minutes long. During this hour-long meeting over Zoom, I gave my presentation and then was able to take questions and discuss what I had presented.

### **Use of Cybersecurity Skills and Knowledge and How the Curriculum at ODU Prepared Me**

My prior knowledge of cybersecurity was integral for completing my tasks for my internship. For the majority of my tasks, I was required to utilize the knowledge I had gained over my time in my undergrad program and combine it with my research skills in order to create well-rounded and thorough deliverables to provide to my supervisor for the office.

When looking back and reflecting on how the curriculum at Old Dominion University helped prepare me for this role, a prominent connection that I find is how much it assisted when I was writing the best practices manual. I found that the experience I had received completing assignments for my Cybersecurity Strategy and Policy course had helped me greatly. In that course, I had assignments in which I was required to examine and analyze cybersecurity policies and framework guides. Already having the experience of viewing and deeply analyzing these guides gave me insight and knowledge on how I should go about creating my own.

In a more general sense, I have found that all of my courses in the cybersecurity degree program have provided me with the foundational knowledge needed in order to go on and inform others of that same knowledge. For some of my tasks for this internship, I was asked to create

informative material such as the best practices manual and presentation. I feel as though without the knowledge that the coursework at Old Dominion University provided me, it would have been much more difficult to effectively communicate the content contained in those two pieces of informative material.

### **Objective Outcomes**

When examining the learning objectives that I established with my supervisor and the outcomes from my internship, I find myself highly pleased with those results. I feel that I was able to fully meet each one of those objectives with the level of quality of the work I ended up producing. Going into this semester, knowing that I would be undertaking an internship role, it was my hope that I could gain experience that could be carried over realistically to my future career as a cybersecurity professional. This internship allowed me to gain useful and meaningful experience. Additionally, I now also have multiple examples of my professional work detailing my ability to perform consultant type tasks.

### **Motivating and Challenging Aspects**

Perhaps the most motivating aspect of my internship was the feeling that my work was substantial and useful for the Monarch Internship & Co-Op Office. I was truly able to act as a cybersecurity consultant and provide the office with materials they did not have as an office previously such as the best practices manual and cybersecurity training with my presentation. It did not feel like simple “busy work” or work that did not have any real impact on the office.

One challenge that I faced with this internship was related to the remote management setup. I found that in order to complete my tasks and stay on track, I needed to set up some form of my own schedule. The independence of the management schedule I had in this role was highly beneficial to me as I felt that I did not have someone constantly watching over my shoulder and it was also adaptive to its remote nature. However, it required me to hold myself accountable for getting the required number of hours complete and completing quality work in a timely manner. To address this, I set up a spreadsheet of the tasks along with either an agreed upon or estimated date for completion. Additionally, I set up a second sheet that was where I maintained a daily log. Each day that I worked on any internship work, I logged the day, what kind of work was done, and how long I worked on the task.

### **Recommendations for Future Interns**

A main recommendation that I have for any future intern in my position with this office is to develop and work on honing their time management skills. As I described in a previous section with how I had to maintain my own schedule and due dates, having the required self-awareness and self-accountability to do so was integral to my success in my role. If a future intern is not quite comfortable to their ability to complete work without set due dates, I would recommend coordinating and communicating this to their supervisor in order to establish these due dates and more frequent check-in meetings.

Another recommendation I would have would be for a future intern would be for someone who was not confident in their professional communication skills. This role, especially with the fact that it is completely online, requires the ability to have consistent communication

with your supervisor. This does not exactly mean that you have to check in and have email exchanges all the time but does mean that an intern in this position cannot be afraid to reach out first and ask for assistance when they need it or send drafts of their work for their supervisor to look over. Additionally, this role required me to present a thirty-minute-long presentation and be able to have a knowledge back and forth discussion with the team about the topics put into the presentation. These communication and interpersonal skills are needed for success in this role, and I would recommend that any future intern for any position develop those skills, but especially for an intern in this role.

A third recommendation I would give would be for any future intern in this role would be to be adaptable. My tasks had the ability to be vague without any clarification or discussion of expectations. These kinds of tasks can be fun since they can allow for creative or professional freedom when completing them, but an intern in this role needs to have the ability to shape their vision for completing the task and make edits to the expectations of the employer without feeling overwhelmed. Again, communication plays a large role in the discussion of expectations and requirements as well.

## **Conclusion**

Overall, this internship was enjoyable and highly informative for me. It provided me with both the experience of performing these tasks in a professional setting and the confidence needed to perform them well. I truly felt that my work was useful and informative for the Monarch Internship & Co-Op Office. This internship also reinforced the value of adaptability,

communication, and time management. I was able to become more confident in my knowledge and abilities while also being able to contribute to a team setting.

Going forward past this semester, I plan to enter into the professional cybersecurity field as well as continue my studies in graduate school. I plan to use the invaluable experience gained from it outside of the classroom in my future endeavors and as evidence on my resume of my skills and abilities. This experience has clarified my goals and strengthened my motivation to pursue them. Over the course of this experience, I was able to move beyond abstract concepts and classroom assignments and into the realities of professional practice. While this internship may be complete, the lessons I have gained will continue to influence my academic choices, career path, and approach to future opportunities.