

Reflection Essay

Christian Ellsworth

Old Dominion University

Dr. Tucker Steffen

## Introduction

This eportfolio I have created will showcase the skills I have obtained since coming to Old Dominion University. I have grasped many concepts, but I have narrowed it down to three skills that will highlight some of the most important things I have learned. I have gathered artifacts from classes to help me show my strong foundation that has been built one class at a time. I have included writing assignments, coding assignments, as well as some programming assignments all of which I think are important in the cybercrime field. The skills that have helped me the most have been programming, technical writing, and my ability to apply real world applications to what I have learned. "E-portfolio can build learners' personal and academic identities as they complete complex projects, facilitate the integration of learning, and be focused on developing self-assessment abilities in which students judge the quality of work" (Miller 2009)

## SKILL: Programming

Programming is essential because it serves as a different language that you have to know to be able to understand it. It can be the difference between a secure network and a network that is prone to attacks. It is the foundation for almost anything software and technology related. It works as the command for your computer or device that when you press a certain combination of keys then a certain thing should happen. You must develop code to input into your database and make sure your code is consistent throughout so it can be understood by your teammates since a lot of times someone will have to review your code to make sure it works. "One may conclude that learning to code *was associated* with improvements in other skills measures." (Grover & Pea, 2003)

## IT:205 fundamentals of programming

As a sophomore taking this class was a little challenging because it was really my first exposure to anything IT related. This class was about familiarizing yourself with Java and becoming confident in your ability to identify concepts. I learned about data types, control structures, algorithms, and much more. All of which are important when learning the Java language. To me it felt like being in a foreign country and having to study to learn the native language of where you are. Object oriented programming was a great experience and challenge for one of my first technical based classes. For this assignment I was instructed to display three messages. I had to write a program that displayed "Welcome to Java", "Welcome to Computer Science", and "Programming is fun". I then had to use a table and compute my personal income tax for the previous calendar year. After that I had to write a program in java that printed a payroll statement with the given information. For my first assignment in this class, it was very fun and also time consuming. When I finished the assignment, I had a sense of accomplishment because I saw it through to the very end and it was fulfilling to see it completed although at some points it was challenging and frustrating. Being able to program properly and to be proficient in a language like java is huge and can help me land a job because I will be able to program, and if I don't know the language I will surely adapt and learn.

## IT 201: Chapters 6-9

For this assignment I was ordered to write a method that finds the number of occurrences of a specified character in a string using the given header. A string is when you have a group of letters that you would use to represent text while programming. It can include symbols, numbers, or letters. Strings are usually attached with quotation marks so they can be differentiated from other texts and the quotation marks can be single or double quotes. We use strings to manipulate or store data and they are essential for communication between user and the system. We then had to write a method that returns the sum of all the elements in a specified column in a matrix using a given header. We had to write a test program that read a 3-by-4 matrix and displayed the sum of each column. I also had to design a class named “rectangle” that represented a rectangle and the class had to contain two double data fields named width and height and had to specify the width and height of the rectangle. It also had to contain a constructor that creates a rectangle with the specified width and height, a method named “getArea” that returned the area of the rectangle and a method named “getPerimeter” that returned the perimeter. This is all relevant because it showed the attention to detail that is required for me to get the right output. With something like this even the smallest mistake can make the whole output wrong. If you put a space where it shouldn't be or maybe forget a quotation mark it can ruin everything.

#### IT: 201 Proof of Knowledge

In this assignment we were instructed to compare and contrast Java and Python. These are two beginner programs that can be introduced early on in the tech field. It was an intellectually enlightening experience to write a paper that contrasted and compared Java and Python, requiring a thorough examination of the features, syntax, and use cases of each language. It pushed me to investigate the advantages and disadvantages of both languages, especially with regard to execution speed, adaptability, and library availability. In the end, the approach expanded my respect for how many languages can be adapted to certain applications and developer demands, and also improved my grasp of programming principles. I had to write about where I saw each programming language heading in the future and what users are currently using the language. “One benefit of real-world learning is that you can apply your new skills and knowledge immediately—even before you’ve finished your course. According to a [2022 City Square Associates survey \(pdf\)](#), 87 percent of HBS Online learners said they acquired immediately applicable skills.”(Cote,2023)

#### Skill: Real World Application

I think real world applications are an amazing skill to have and one that I have definitely obtained and mastered. Learning by the book is one thing and being able to apply it to things in a work setting is completely different. I am a great candidate for a job in this field because I have grasped the concepts and am able and ready to apply them to real life situations. With much practice in vulnerability assessment and network security I am confident that I can apply what I have learned to any situation that will arise and a company can trust me to identify and eliminate the threat to their network.

#### IT: 315 Hands on #9

In this assignment I was tasked with designing a network for a temporary office that must support 8 desktop computers. All of the equipment must fit into a 24x40 room. I had to use 5 port switches in this environment. I needed to allow enough cable to plug into a desktop/printer/server, run along the wall or down to the floor, and again to plug into the switch. I then had to total up my expenses for my materials and submit my budget for the patch cables and network switches I needed. Effective resource allocation is a huge part of running a business as you don't want to overspend. I have demonstrated the ability to use strategic planning and resources when making a diagram which I could present to my team or boss.

#### IT: 315 Hands on #10

This assignment was a lot of fun for me, it really required some thought and discipline. I was instructed to invent a coding scheme. This coding scheme was going to be passed onto 7th graders. The two stipulations were the code had to be easily memorizable and calculations had to be able to be done in their head. It still had to be strong enough so their peers and teachers couldn't decipher it. This activity allowed me to take some of the more challenging things I learned and deconstruct them to a smaller scale. It also helped my communication skills because I had to be able to clearly demonstrate what needed to be done to achieve the correct output.

#### IT 315: Case Analysis

This assignment was very challenging and also very encouraging. By the time I was done with this project it felt like I just completed a marathon. The main challenge here was to make a networking design for Maury High School. The extensive undertaking of designing a wired network for Maury High School forced me to use my theoretical skills in a real-world setting. It required carefully weighing technical requirements and cost-effectiveness while developing comprehensive plans and budgets for cabling, equipment, and security measures. Because it mimics the planning and implementation procedures involved in network design for educational institutions, this experience has a direct bearing on real-world applications. My ability to work productively and within certain means was showcased by finishing this project successfully, which sharpened my technical abilities and made me a solid contender for employment in an IT field. "As networks become mission-critical for business functions, design decisions made by IT professionals can have far-reaching implications. A network with a well-planned design will perform better. It will be more secure and resilient and easier to troubleshoot, and it will scale easily and adapt to future technologies." (Cisco,2021)

#### SKILL: Technical Writing

One skill I did develop in high school was my ability to write, even if it wasn't always the most perfect in an academic sense. I was not the best writer, but it was something that I felt if I worked hard enough, I could be a decent writer. My elementary school teachers always used to complement my comprehension levels and would tell my parents that I was way above average in terms of reading and writing. When I took my first writing intensive course in College, I rapidly understood that there was a lot of work to be done. That is exactly what I did, I continued

to work and develop my skills in academic writing. This skill is great to have because we usually have to write some type of report to document our findings or the end results in cyber settings. Technical writing allows me to communicate ideas fluidly with teammates and be able to write incident reports and notes for our whole team to look over. Being able to put facts in a report that everyone can understand is essential in a tech setting.

### Engl 110: IMRAD essay

This paper was research on how college affects students' lives and persistence. This was my first time ever hearing of an IMRAD framework. It is made up of an introduction, method, results, and discussion. Following this framework makes it easy for the reader to follow along and understand what they are reading. By organizing my findings into sections, it allowed me to dive deeper into subjects without mixing topics too much. I felt this paper was very strong, as did my professor, she even commented that I should be an English minor or switch my major. If it was for work my co-workers would be able to easily follow along and share their thoughts with me. "The result also showed that there is a significant difference in the grades of students in research courses during the implementation of the IMRAD structure approach. (Tabuena,2020). This shows that the IMRAD essay is a positive writing structure and can be implemented into all work settings.

### Engl 211: Death Penalty Abolition

In this paper we had to pick a side either in favor of the death penalty or to abolish it. I felt more inclination to abolish it because of how many resources we allocate to the death penalty before they actually get put to death. I also felt like if there is any doubt that the person is innocent, they shouldn't be executed. There have been countless cases where DNA or evidence proves their innocence many years later and they might already be gone. Studies have shown that the death penalty does not actually deter crime and rehabilitative approaches would be more beneficial in stopping repeat offenders. In this assignment I had to pick a side of a polarizing topic and show that I can make claims and have evidence to back it up. This shows that I am able to project my feelings in an educated way and even if I don't persuade the person to think like me they will at least know where I am coming from.

### Conclusion

Programming, technical writing, and real-world application are skills that are invaluable. These skills will take me far in my career because they are essential when you are a part of a team as I will be when working for a company. This ePortfolio successfully highlights the abilities I have acquired while attending Old Dominion University, emphasizing my development in technical writing, programming, and real-world application. Through many different assignments, I have established a sturdy foundation that enables me to confront obstacles in the cybersecurity domain, exhibiting my aptitude for implementing theoretical understanding in real-world scenarios. My coding and network design experiences have improved my technical skills and equipped me to explain complicated concepts in an understandable and efficient manner. I am certain that I will be prepared to contribute professionally and knowledgeably to the IT industry as I continue to hone these talents. I am well equipped with the tools needed to have a successful career and I will never stop learning.

## References

Miller, R., & Morgaine, W. (2009). The Benefits of E-Portfolios for Students and Faculty in Their Own Words. *Peer Review*, 11(1), 8–12. <https://www.aacu.org/publications-research/periodicals/benefits-e-portfolios-students-and-faculty-their-own-words>

Grover S., Pea R. (2018). Computational thinking: a competency whose time has come, in *Computer Science Education: Perspectives on Teaching and Learning in School*, eds Sentence S., Carsten S., Barendsen E. (London: Bloomsbury Academic; ),

Cote, C. (2023, December 14). *5 ways real-world learning can boost your career: HBS Online*. Business Insights Blog. <https://online.hbs.edu/blog/post/real-world-learning>

Tabuena , A. C. (n.d.). Students' perception in the implementation of the imrad ... <https://files.eric.ed.gov/fulltext/ED617104.pdf>

Cisco. (2021, September 9). *What is network design?*. Cisco. <https://www.cisco.com/c/en/us/solutions/enterprise-networks/what-is-network-design.html>