Imagine the whirring sounds of computer produce from sending data from another in a fraction of a second across the globe. The fans calmly spinning air exchanging the melting air with a cold refreshing breeze as the computer hums happy tunes. The people looking down on a screen with various projects and tasks being completed or started from talking to 1’s and 0’s through programming to enjoying some drawing on paint. These incredible actions preformed however mundane are possible through a complicated series of connected pieces of technology that has changed the world. The way computer has shifted people lives including my own really encapsulates the power through giving opportunities in various field and the ability for expressing various aspects and details that can be fundamentally in society. Dreams of creating distinct types of information which the computers and the internet has facilitated including creating websites to delivering media such as: books, videos and more has changed the how we collaborate and interact with others. The possibilities that have enabled through the computer have become limitless and I will be introducing aspects of both surface level and beneath the iceberg of how I have change through the literacy of computers. I will provide the experiences that have shaped my literacy of computers discussing programming and cybersecurity specifically.

The first experiences that led me through programming was in middle school when the teacher in computer class did a lesson about programming this inspired my interests in creating programs by seeking out more information. Thus, propelling me to learn through using the internet everything I could about programming from how to make websites to simple games such as tic-tac-toe and pong. The rabbit hole of coding had led for me discovering how computers communicate different information from displaying text, visual, and audio elements. A program that I created during this period was a store program that simulated the experience of going through a store or grocery store using text I provided different assorted items for purchases from food to electronic this took a considerable amount of time constantly finding bugs and issues that took time to iron out for the final version of the store program. This taught me various lessons about projects and programming that has transferred beyond the scope of programming. These include setting realistic goals, effective timelines, and more. Brandt details the different types of literacy here “Raymond Branch in computer programming and Dore Lopez in biliteracy” (172). Brandt discuss that literacy often come in numerous ways from English literacy to programming literacy as each has specific terms and avenues of depth from having a beginner to expert level understanding and many differing levels in between. The literary sponsors that I have accumulated from programming are teachers and mentors that I have had in various years of school the most significant ones have been my teachers for cybersecurity and two mentors for robotics during high school has they gave me tools that impacted the knowledge that I currently have. For example, both my teachers for cybersecurity enabled to explore this avenue that I was unaware of until I was introduced heavily to the Creekside Cyber Patriots Club this with both having classes related from learning about: Operating systems such as Linux, Computer Networking, and more Cybersecurity related topics and tools that expanded my knowledge of the inner and outer workings of computers. These would be how the literacy sponsors enabled for my growth in a domain of computer literacy that I never considered before leading to further learning and exploration through doing competitions and activities related to Cybersecurity such as Cyber Patriots, CTFs (capture the flag), and HackTheBox which are various way that honed this aspect of computer literacy for me through which my literacy sponsors helped achieve this outcome for me. While Cyber Patriots and CTFs are competitions which are collaborative. Whereas HackTheBox is more getting into an operating system such as Windows or Linux and trying to find different clues that leads to the discovery of vulnerabilities that then must be used to find information that supposed to be secure being a flag (a string of letters, numbers, and special characters). In comparison to CTFs which are basically challenges either jeopardy based or attack and defense giving from getting encrypted passwords and cracking them to find the password to finding vulnerabilities in a site to expose administrator access.

For further illustration of the components in programming I will discuss the key aspects of what most programming languages have such as: variables, operators, functions, and more. Beginning with variables which are one of the most internal parts of programming allowing the storage of values to be used for calculating, comparing, and collecting data. This also depends on the type of variable whether one is an integer, float (anything with decimals), or string, and more these different types of variables are used by different functions as stated above. Operators enable interaction between variables these such as: addition, subtraction, multiplication, division, etc. This enable programmers to modify variables to be something different based on what a user might for example with a variable named paperclips, the user might want to add more toe the paperclips variable which would be initially 0 but through operators the variable can be changed through using operators. The last key point I would discuss for provide a backdrop into the further experiences that shaped my computer literacy are functions which provide the ability to develop projects on a massive scale as functions enables a program to be split in digestible and reusable chunks of code.

The experience of robotics was a one about building something unique with programming combing multiple disciplines of stem to create a robot that performed tasks from shooting basketball sized golf ball into either a high or low hoop, autonomously navigating, and climbing up bars. This starts in 2022 at the beginning of senior year when the Creekside FRC club was starting after being on break for the previous 2 years. The team needed a programmer that could manage others as at that time we lacked a mentor and preciously experienced people in this specific area of robotics programming, so I decided to take on this challenge. First this was difficult as we never got the robot working in the previous year’s however, we were able in only two weeks to make the robot move even though it was basic and turned in circle due to a motor being faulty this made everyone proud and ecstatic on what we could do. This optimism was short lived as this robot, we had made two years ago and finally got working was taken back as the people that loaned us the robot parts for the team, we were competing under were making another team. So after a decision making process through the engineering program and a grant for FRC(First Robotics Competition) the funds to create a Creekside Team was finalized but we had to start from square which took several weeks starting from the mid-January to completely build a new robot with a design that would work for this competition this would several weeks of iteration and troubleshooting through constant obstacles we were able to complete this journey with me helping through leading the programming effort. At the completion we able to receive the highest ranked rookie award which was a huge accomplishment to entire Creekside Robotics Club. This taught me valuable lessons that I had yet to encounter such as the different ways that the electronics had to work in tandem with programming to create even the simplest of movements. This with additionally needing a mechanically sound design on the engineering aspect so all the components could produce a well-oiled machine.

Through the processes of literacy sponsors and a desire for learning about programming I learn valuable skills both applicable inside and outside of the computer discipline. The computer literacy that I have gained through these experiences have been valuable as method of expressing creative and unique aspects of what I find interesting and compelling to work at that time. From the various aspects of programming to cybersecurity I have learned knowledge has both effected how I look at everyday life from the various aspects that are hidden beneath the surface of those 1’s and 0’s. As I learned about language and literacy for which a whole host of details can be listed literacy opens a gate of possibilities unlimited potential in expressing what we all find important from writing to programming literacy can shape how we interact and why we interact with others including the world wide web of people.

MLA Works Cited Page:

Brandt, Deborah. “Sponsors of Literacy” College Composition and Communication, Vol. 49, No. 2 (May, 1998), pp. 165-185.