By:

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7-1 Self-Assessment

What makes me different? Curiosity, one of my most valued traits is just how curious I am. Curiosity creates passion, passion breeds ingenuity, and ingenuity brings success. One of my favorite quotes comes from a young Elbert Einstein, “I’m no smarter than anyone else, just more curious.”

With all of that being said, I want to take a little dive into the time and skills developed throughout my education at Southern New Hampshire University. From data structures to cyber security I have experience a wide array of computer science topics. Starting with the fundamentals of coding in Python, moving quickly to object oriented programming with Java, followed by advanced data structures in C++, and putting it all together with graphics and visualizations in an advanced API. I learned multiple programming languages and IDEs giving me the capability to work on a variety of projects, but most importantly I learned how to think like a machine. How to create objects, methods, classes, and data structures. How to use these objects in advanced algorithms to solve complex problems, then take these functions and put them into a larger program. How to statically and dynamically test a program before giving it to the masses to exploit. I also learned about networking and cyber security, to keep these programs and information safe in transit.

Beyond the technical knowledge and skills I also learned software development life cycles and collaboration for team projects. The power of multiple branches and the importance of running unit tests prior to any commits to a main branch. I learned network concepts and structures, each with their own pros and cons. After networking concepts I moved to network security and the importance of closing legacy ports. Understanding different protocols associated with each port and all the different encryptions used in modern cyber security.

The last major learning objective of this degree I want to point out is the use of databases. From small data being stored into a SQL database to thousands of emails being saved into MongoDB I learned the value of data basing software. I also learned how to implement these into coding programs such as Java to create a dashboard for user interactivity.

With the capstone of this degree I took little pieces of each class and put them together into a full stack application. Beginning with coding a dashboard in Java with NetBeans as the IDE, I implemented security practices with an invalid counter and a hashing function. I used general best practices with self-defining variables and well commented code. Multiple data structures were created with two classes, multiple methods and loops. Unfortunately with no pointer node systems being used I didn’t create any very advanced data structures. From here we transition to the backend of this stack, in which we use an SQL server to create tables. These tables store user information and hashes, which are used to validate a user’s access to pre-determined files.

One last thing that I want to add before I wrap this thing up is a little bit to my strengths and weaknesses. Personally my biggest strength, aside from curiosity, is the ability to think in code. More or less a coding mindset can carry you through most problems, which is extremely important in software development. Unfortunately one of my biggest flaws is the exact syntax require to take a data structure in my head and put it into practice.