Throughout this course, we have touched on different topics in the programming world around how to properly implement security. With the past generation of computer scientists beginning to retire, we are now taking their place and have to improve on their past accomplishments. As we move into the industry’s top companies, we will adopt a secure coding standard, recognize to never trust the client, and never leave security until the end. By doing so, we will be able to effectively mitigate any future risks of a cyberattack.

As I have mentioned a few times throughout this course, the attack on the Colonial Pipeline is a prime example on a basic security risk that could have been prevented if proper security policies had been put in place and strictly followed. The attackers gained access through an unused account that did not have multi-factor authentication. At this point in time, with all of the available multi-factor options such as text, email, or auth app, there is no excuse to not properly secure an account. Approximately 90% of data breaches are caused by human error and attackers taking advantage of that. Seeing as humans are your systems’ worst nightmare, why not block the main vector of attack: obtaining a password. People are prone to reusing passwords, whether it is one or even five different passwords, they have likely used it elsewhere. Ensure a person is who they say they are by adding another factor in there. More layers can create better security.

This course has also focused on “zero trust”, which is to never trust the client. We focused on different attack vectors ranging from SQL injection to buffer overflowing. The main principle is to assume the client is the worst threat possible and to verify anything they are passing to the server.

I have enjoyed this course as it encouraged me to step out of my comfort zone by learning a new language, C++. On top of learning the language, I quickly gained the knowledge on how to code securely while maintain functionality.

References

https://www.cybsafe.com/press-releases/phishing-dominates-uk-cyber-threat-landscape-shows-analysis-of-latest-ico-figures/