Secure Software Development - Reflection

https://pahuja83.github.io/E-Portfolio/module4.html

During the course of this module, which was titled "Secure Software Development," I became familiar with the many methods of developing secure software, including the waterfall method, the agile method, and the use of Unified Modelling Language to assist and depict software development. I've become familiar with the idea of Secure Scrum, which, in addition to the standard Scrum phases, includes the steps of Identification, Implementation, Verification, and Definition of Done.

Participated in the preparation of the design document for the development of a secure repository application for the Internet Forensics Department of the Dutch Police (Government of the Netherlands). Privacy and security regulations, such as those outlined by the General Data Protection Regulation, were among those that were taken into consideration (GDPR). Users will be able to report instances of cybercrime directly through the application, which will subsequently provide the information to the relevant authorities and store it in a secure location. Reports that have been submitted to a centralized database will be investigated by law enforcement officers.

During the discussions about the design document, we scheduled meetings as a group to brainstorm on the security structure of the application. This included everything from protecting the personal details of the complainant by encrypting the information while it was being saved to the database to requiring multifactor authentication whenever an external user or member of the police staff logged in to the application. We also made sure that user data and police staff information were kept separate in separate tables or databases. Before beginning this module, I was not familiar with any tool that does code check or validation; as a result of my participation in this module, I now know of one such tool: Exercise in unit 4 titled "Linters" that I worked on.

Additionally, the future trends in Secure Software Development such as fog computing, the Internet of Things (IOT), Blockchains, Cyber Physical Systems (CPSs), etc. were explored and comprehended. Developed an understanding of the distinctions between a number of contemporary languages, such as Rust, GO, and Swift, among others. Although there are a lot of features that are incorporated into today's modern programming languages that simplify secure programming and bring developers one step closer to designing apps that are truly secure, there is not yet a single solution that has been developed.

Despite the fact that I had no prior experience with programming, I found it challenging but enjoyable to discuss new things, look for and learn Python along with various

Python libraries, and present a functional code in order to accomplish what I had set out to do.

Each of the seminars offered a fresh point of view on a variety of topics, in addition to being quite engaging and educational. Due to the different time zones, I was not able to actually attend all of the seminars that were held during the module; however, I did listen to all of the recordings. My knowledge was expanded in a broader way because to the many formative activities that were spread out over the course of the module. Some of these activities included constructing a REST API, having a team discussion on secure programming languages to buffer flow, and many others. After reading through this module, I learned the "under-the-hood" things for the API construction, and now I can create an API just like everyone else! APIs have always been a buzz term for me, but now I can do it too! During the collaborative discussion-1, I decided to focus on one of the OWASP's top ten vulnerabilities (Cross-Site Scripting, or XSS), which I then discussed and illustrated using a flowchart and a UML diagram.

Throughout the course of this module, I had the opportunity to gain a better understanding of how critical it is to maintain a high level of application and software development speed while also maintaining a high level of security.

When I first started the class, I had very little background information on the subject. Having said that, by the time I reached the end of the class, I had a solid comprehension of the significance of developing secure software. As a direct result of being exposed to this module, I have experienced a shift in my mindset, which will have a beneficial effect on the work that I do on a daily basis.