Secure Software Development – Reflection

My e-portfolio: https://kalaitzakisant.github.io/ePortfolio/ssd.html

So, you are developing an application! Have you thought about its security?

During the Secure Software Development module, we were introduced to the security risks and vulnerabilities related to programming languages, developed software, applications, and operating systems. We developed an understanding of secure development methodologies and explored how to design secured and compliant software.

Throughout the first week in the SSD module, we were divided into groups as we would complete our assignments in teams.

In Unit 1 I went through all units to note the requirements and start doing my own reading and research to better keep up with the module. Additionally, I refreshed my knowledge of creating UML diagrams by creating one to show the steps that lead to a weakness recognised by OWASP. Furthermore, I had a call with my team to introduce ourselves and start knowing each other. It was exciting to start a new module!

In Unit 2 I read about the steps of the SDLC, and I wrote a blog post as a preparation for our first seminar regarding software risk and how people are to be blamed. It was interesting and terrifying to find out how most data breaches were caused by simple mistakes.

In Unit 3 I read about programming languages and how secured (or safe) they are. Additionally, I worked with my team to prepare a document determining what factors define whether a programming language is safe and how secured Python really is. I believe that programming languages are as secured as the person coding the software.

In Unit 4 I explored the usage of regular expressions (Regex) and its problem, Evil Regex. It was difficult to grasp its full functionality because of its non-logical structure, however, I believe the document I prepared includes the fundamentals.

In Unit 5 I studied the ways to perform testing to software and applications and prepared a document regarding the Cyclomatic Complexity and if it is still relevant today to developers. This unit was very familiar for me as the topics I was reading were the same as the ones in the Network and Information Security Management module I was studying at the same time. In addition to my studying, I was working with my team to complete our Design Document for Unit 6. In general, it was a very good week with intriguing reading.

In Unit 6 my team and I were very busy preparing our assignment. However, it was very nice to work together with people from different professions and backgrounds. I believe that diversity is the key to every successful team.

Unit 7 was a relaxing week, allowing me to catch my breath after our assignment submission and reconcile the information I received throughout the previous weeks. During this week I studied the fundamentals of operating systems and how secured their development is.

In Unit 8 I studied cryptography in connection with the operating systems and why it is important to encrypt all data. I also posted my second collaborative discussion regarding a disconnected encryption software called TrueCrypt. I enjoyed the 8th week very much as I am very cautious of protecting my data either stored in my hard drive, or during transfer using VPN software.

In Unit 9 I learnt how to develop a RESTful API for a distributed computing environment (e.g., web application, database, domain, etc.) as it was required for my team's final submission in Unit 11. Unit 9 left me with a longing to study Python Flask further, in order to create personalised web applications for my own usage.

In Unit 10 I studied the term Ontology, however, it was hard to grasp. Nevertheless, I tried to complete the e-portfolio component trying an attempt to define it. Furthermore, my team and I started coordinating ourselves to complete the second assignment fully and on time.

Unit 11 was one of the busiest units of the module. I was collaborating with my team to complete our assignment. We had split the tasks into Python coding, CSS coding and Readme file. First, we completed all Python code, then we completed the CSS code for our web API and finally we wrote the Readme file with instructions on how to run the application, what is its functionality and which limitations were discovered.

In Unit 12, I was working to get my e-portfolio ready for its final submission, but unfortunately, I miscalculated the effort and time required and got stressed to complete it on time.

Following the completion of the Secure Software Development, I am moving to the next module with refreshed UML skills and knowledge in SDLC, some common risks and vulnerabilities of software, ReDos and Regex, some testing methods, a basic knowledge of Python Flask and Fernet. More importantly, I am leaving the SSD module with awareness of

how important it is to create safe and secured software, not only for the system's integrity but for keeping all personal data safe. In addition, I am planning of attending some further courses to improve my knowledge of Python Flask, and Fernet.

Finally, I cannot help myself but feel proud for my team and myself for completing our assignments successfully with a professional approach.