**Reflection**

The reflection activity is completed using the "Rolfe, Freshwater, & Jasper 'What' Model." This is a consolidated reflection for the module, and a detailed reflection for each activity can be viewed online.

See Link: <https://github.com/narunanthy74/ePortfolio/tree/main/Reflection%20-%20Details>

| **Network and Information Security Management** | | |
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| **What?** | **So What?** | **What Next?** |
| Three primary activities supported the Network and Information Security Management module: Assignments, Formative and e-Portfolio Activities, and Seminars.  All three of them were integrated in a way that one activity leads to another. For example, the seminar activities helped develop the formative and e-portfolio activities, which led to assignments.  There were seven seminars starting from Introduction to finally a debate. Listed below are the seminars and associated units covered by those seminars:   * Introductory session and group allocation for Team Project (Unit 1) * STRIDE and DREAD tools (Unit 2) * TCP/IP v ISO/OSI (Unit 4) * Evaluation exercise (Unit 6) * Security Standards (Unit 8) * Data Breach case study (Unit 10) * Debate Vote (Unit 12)   There were six formative and e-portfolio activities ranging from analysing papers related to the Medical Mannequin compromise to GDPR. Listed below are the formative and e-portfolio activities and units covered by those activities:   * Collaborative discussion 1 (Units 1 – 3) * Practical and Team activity (Unit 3) * Collaborative discussion 2 (Units 4 – 6) * e-Portfolio activity (Unit 7) * Scanning exercise and Wiki (Unit 7) * Collaborative discussion 3 (Units 8 -10)   There were three assignments targeting topics from scanning the website to e-Portfolio. Listed below are the assignments and units covered by those assignments:   * Development Team Project: Design Document (Unit 6) * Development Team Project - Executive Summary (Unit 11) * Individual Module e-Portfolio (Unit 12)   In addition, students have been guided through 12 modules vis self-learning and supported by various methods, including meeting with the tutor on an as-needed basis. | The formative and e-portfolio activities and seminars helped me learn various skills and apply them effectively.  According to InnerDrive, group work has some limitations and can be highly time-consuming (InnerDrive, N.D.). Initially, I was challenged by mutually agreed time and work distribution for the group activities and engagements. However, the Team Contract helped to address those constraints and enabled us to collaborate effectively.  According to the contract, the work was effectively distributed, monitored by periodic group meetings – at least weekly; feedbacks were provided timely to address any gaps if identified.  Tools and technology were effectively used to collaborate - Google Drive for sharing documents and Discord for discussions and meetings.  Various project management technics, including time, resources and quality management, were applied to complete the deliverables. However, if help was needed, I was ready to help. In addition, understanding others perspectives helped to enhance my knowledge about emotional intelligence. Therefore, I was inspired to help others.  We had an issue with the AWS website during this module, and we couldn't create the website. Alternatively, the group used a different site to complete the activities. Resilience, critical thinking, problem-solving, teamwork and leadership were the learning from this situation.  The deliverables Design Document and Executive Summary development related to the assignments helped advance various skills and technology tools. Primary skills learned by doing these two engagements were critical thinking and analysis, communication and literacy skills, present critical arguments.  Feedback not only helps us to achieve our goals but also transforms us (Barnett, 2020). The input - formal or informal, provided by my group members, class members and tutor helped me develop and improve myself. I was inspired by the feedbacks provided and wanted to do more and accomplish more.  The final seminar related to future trends and technologies, specifically related to the Internet, moved me a lot and helped me learn about other potential Internet technologies.  The development of the e-Portfolio enabled the improvement of the skills related to critical reflection and evaluation.  Technology tools, techniques and processes were a critical internal part of the module. And they were integrated throughout various activities, including self-learning.  Related to computer networks and security, fundamental principles, historical information, various security solutions were key areas covers. In addition, from an ongoing monitoring perspective, identifying and analysing security gaps using multiple sources was also covered.  Associated with security breaches, analysing cases studies about data breaches helped to understand the real-world risks. In addition, these case studies helped to learn assessment methodologies of security breaches and issues using multiple sources. Moreover, social, ethical and professional requirements and expectations were additional learning outcomes from these data breaches.  Leal and regulatory perspective, compliance requirements, assessment methodologies, and remediation strategies – in any gaps identified, were the key learnings. Additionally, potential audit risk, privacy gaps, security issues and reputation issues were essential highlights related to regulatory standards.  **Key Standards Learned:** Essential standards learned during this module are listed below:   * Payment Card Industry Data Security Standard (PCI DSS) * General Data Protection Regulation (GDPR) * Health Insurance Portability and Accountability Act (HIPAA)   **Key Security Tools Learned:**  Shimon Brathwaite, who compared Parrot OS and Kali Linux, considered Kali Linux a "Swiss army knife" of penetration testing (Brathwaite, 2021). Among other tools, Nmap, Wireshark, Burpsuite and Metasploit are a few security tools that come with Kali Linux. Therefore, learning Kali Linux and associated security tools was the key highlight of this module.  Essential security tools learned during this module are listed below:   * Burpsuite * Dig * Dnschecker * GDPR Compliance Test * HPing * HTTP Headers Security Test * Jawfish * Kali Linux * Metasploit * Nessus * Nikto * Nmap * Nslookup * OWASP Zap * PCI DSS Compliance Test * Ping * Security risk assessment models: STRIDE and DREAD * Software Security Test * SQLMap * SSLScan * TCP/IP OSI 7 layer model * Traceroute * Web Server Security Test * Whois * Wireshark | The security tools learned for this module can be utilised for security assessment. I would use the experience gained from this module to identify the appropriate tool effectively. In addition, I will enhance my knowledge by doing additional research and experiments and share with the security community.  I would apply transferable skills such as Interpersonal, Entrepreneurial and leadership effectively. And would actively improve those skills. Among other skills indicated the following skills would be critical for the cybersecurity personnel:   * Project management * Resilience * Critical thinking and analysis * Problem-solving * Communication and literacy skills * Teamwork * Effective Presentation skills   I would actively apply those skills and will enhance them when possible. |

**References:**

InnerDrive. (N.D.) 10 ADVANTAGES AND DISADVANTAGES OF GROUP WORK IN THE CLASSROOM. Available from: <https://blog.innerdrive.co.uk/advantages-disadvantages-group-work> [Accessed 25 July 2021].

Barnett, J. (2020) Feedback Doesn't Just Help Us Perform. It Helps Us Transform. Available from: <https://www.forbes.com/sites/jimbarnett/2020/03/03/feedback-doesnt-just-help-us-perform-it-helps-us-transform/?sh=31698b5360f0> [Accessed 25 July 2021].

Brathwaite, S. (2021) Which is better Parrot OS or Kali Linux?. Available from: <https://www.securitymadesimple.org/cybersecurity-blog/which-is-better-parrot-os-or-kali-linux> [Accessed 25 July 2021].