

Title: Individual Reflective Piece

Introduction

Reflecting on my journey through the Network Security module of my MSc in Computer Science, I feel both challenged and enriched. This module has not only improved my technical skills but also significantly impacted my professional and personal development.

Summary of Learning Outcomes

Throughout this module, I explored various aspects of network security, including legal, social, ethical, and professional issues faced by information security and risk professionals. The module covered techniques for scanning, evaluating, and mitigating network vulnerabilities, providing a solid understanding of vulnerability assessment basics, especially in web applications. Key assignments included conducting a Vulnerability Audit and Assessment, presenting the results in an Executive Summary, and reflecting on personal development.

The assignments required a deep dive into real-world applications of network security principles. For example, the first **Baseline Analysis and Plan assignment** for the Gin & Juice Shop (G&J) project taught me how to analyze network vulnerabilities in detail and develop a comprehensive plan for assessment. The subsequent **Results and Executive Summary assignment** helped me communicate technical findings to non-technical stakeholders effectively. These tasks, though challenging, provided invaluable insights into the practicalities of network security.

The formative activities, such as the **Literature Review Activity** in Unit 2, the **Scanning Activity** in Unit 3, and the **Case Study** in Unit 5, provided a step-by-step approach to performing the vulnerability assessment for G&J. They also enhanced my technical skills for scanning and auditing and my understanding of compliance requirements, such as the General Data Protection Regulation (GDPR) and Web Content Accessibility Guidelines (WCAG). Before these activities and assignments, I was not aware of the accessibility requirements mentioned in WCAG. Now, it has become a practice for me when maintaining my e-portfolio during my MSc Computer Science journey.

This module also enhanced my awareness of ethical issues in vulnerability disclosure and the use of ethical hacking, emphasizing the importance of responsibility and accountability in all security practices.

Feedback from peers and tutors was crucial, enhancing my critical thinking and understanding of contemporary network security challenges. Collaborative discussions, such as those on the digital economy and log4j vulnerabilities, broadened my perspective. Tutor critiques on assignments refined my analytical and communication skills, improving my work quality.

Professional Skills Matrix and Action Plan (PDP)

The knowledge and skills developed during this module, such as conducting network vulnerability assessments with various tools, drafting assessment reports and executive

summaries, and understanding GDPR and WCAG, are invaluable. Specifically, GDPR compliance is directly transferable to real-world scenarios in my current role as Data Protection Officer, where I can implement the strategies and tools learned during this module. The knowledge of how to issue an assessment report makes it easier to communicate between top management and information technology teams.

Professional Skills Matrix

| Skill | Description | Level Before Module | Level After Module | Evidence |
|--------------------------------|---|------------------------------------|-----------------------------------|--|
| Time Management | Managing time to meet deadlines and balance workload | Intermediate | Advanced | Completed assignments on time despite high workload during staggered modules period. |
| Critical Thinking and Analysis | Evaluating information to make well-informed decisions and solve problems | Intermediate | Advanced | Applied critical thinking in project evaluations and literature reviews. |

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| Communication and Literacy Skills | Collaborative discussion and idea presentation | Basic | Intermediate | Participated in discussions, created baseline analysis and plan, executive summary, and maintained an e-portfolio. |
| IT and Digital | Discover various scanning tools and platforms | Basic | Intermediate | Used Burp Suite and other tools to complete the scanning activity. |
| Research | Conducting literature reviews and applying findings | Basic | Intermediate | Conducted vulnerability analysis literature review for assignments. |
| Interpersonal | Reflecting on experiences to identify strengths, weaknesses, and areas for improvement | Basic | Intermediate | Maintained an e-portfolio with reflections and learning outcomes for each unit. |

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|-------------------|--|--------------|--------------|---|
| Problem-Solving | Developing and implementing effective strategies to resolve issues | Intermediate | Advanced | Looked for alternative solutions when the existing resource could not complete the activity requirement. |
| Ethical Awareness | Reflecting on ethical implications of security practices | Basic | Intermediate | Studied GDPR and WCAG, which enhanced my awareness of data protection and the importance of accessibility for websites. |

Action Plan

Moving forward, I aim to continue enhancing my skills in network security by:

- Engaging with Advanced Topics: Exploring advanced topics in network security and data protection.
- Practical Application: Applying the knowledge gained to real-world projects, particularly in my current role.
- Continuous Learning: Staying updated with the latest tools and techniques in network security through continuous education and professional development.

- Ethical Practices: Implementing ethical considerations and best practices in all security-related projects.

Conclusion

In summary, the Network Security module has been a transformative experience. It has equipped me with essential technical skills, fostered a deeper understanding of reflective practice, and significantly impacted my professional and personal development. As I move forward, I am committed to applying the knowledge and skills gained to real-world projects, continuing my learning journey, and contributing to the field of network security.

Reflecting on this journey has been enlightening, helping me to consolidate my learnings and prepare for future challenges. The experiences and insights gained will undoubtedly serve as a strong foundation for my ongoing growth and success in the field of computer science.

References

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