



Faculty Name: IT
Qualification Name: FET
Certificate: Information
Technology: System
Development
Programme Name:
Programming Foundation
Formative Assessment
2 Paper

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Formative Assessment 2 Paper

Faculty Name:	Information Technology
Qualification Name:	FET Certificate: Information Technology: System Development
Programme Name:	Programming Foundation
Module Name:	Ethics and Network Architecture Semester 2
Module Code:	ENA412
Hand Out:	30 – 08 – 2024
Hand In:	20 - 09 - 2024
Total Marks:	100
Examiner:	Thabang Mashile
Resources Required:	None

Scenario Question(s)	100 Marks
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This Formative Assessment 2 (FA2) contributes 33% towards the final mark.

Instruction(s) to Students

1. All assessments are due at 23:30 (local time) on the specified date.
2. Copying from any source, including other student's work, is strictly prohibited. Plagiarism will result in disciplinary action.
3. Before submitting your assessment, download the "Declaration of Authenticity" form provided by Campus Online. Sign the form and include it as part of your submission.
4. Late submissions will be accepted within a three-day grace period after the closing date. However, there will be a deduction in marks:
5. On the first day, a 5% deduction will be applied, From the second day onwards, the deduction will be 1% per day, up to a maximum deduction of 15%.
6. If you need to submit your assessment during the grace period, you must inform your facilitator.

It is your responsibility to ensure that you have access to a reliable internet connection and the necessary resources to complete and submit your assessment on time.

Fictional Story: "Ethical Odyssey: Navigating the Digital Frontier"

In a world where technology seamlessly intertwined with reality, Alex, a brilliant computer science student, embarked on a journey that would lead them through a labyrinth of ethical challenges within the vast realm of cyberspace.

The journey began when Alex stumbled upon a virtual debate platform, where passionate voices clashed over the principles of free speech and content controls. As they delved deeper, Alex discovered the intricate balance platforms must strike to curb harmful content while safeguarding freedom of expression.

Venturing further, Alex wandered into a digital art gallery where innovative creations dazzled the eye. The artists' struggle to protect their intellectual property sparked a fascination within Alex. Open-source ideals collided with copyright concerns, prompting Alex to ponder how the digital age reshaped creativity and ownership.

Guided by curiosity, Alex entered a digital city powered by interconnected networks. Here, they confronted the real-world implications of implementing TCP/IP protocols through command lines. The ethical stakes became clear as Alex joined a group of activists fighting a controlling regime. This experience illuminated the ethical tightrope Alex would need to tread when wielding technology as a force for change.

As Alex's journey continued, they engaged with a diverse array of networking services, each with its ethical dilemmas. Online marketplaces wrestled with data privacy versus targeted advertising. Alex's expertise was sought to reimagine these services, harmonizing profitability with user trust.

The odyssey led Alex to a crossroads where global connectivity met data sovereignty. The debates swirling around net neutrality and the ethics of cross-border data flow resonated deeply. Alex contemplated the challenging task of designing a network policy that would foster inclusivity while respecting the unique interests of each nation.

In the climax of the journey, Alex uncovered vulnerabilities within a critical network infrastructure. With ethical hackers and cybersecurity experts by their side, Alex crafted an ingenious security framework. It struck the delicate balance between guarding against breaches and preserving the privacy of network users.

Through each twist and turn, Alex's path was illuminated by the guiding light of ethical consideration. Their odyssey showcased the interplay of free speech and content controls, the conundrums of intellectual property, the intricacies

of networking services, the ethics of global connectivity, and the paramount importance of network security and privacy.

Questions:

Reflect on how Alex's journey encapsulated the dynamic interplay between free speech and content controls. What lessons can we draw from their experiences in the virtual debate platform?

1. Reflect on the Interplay Between Free Speech and Content Controls: (20 marks)

- A clear understanding of the free speech and content control dichotomy and its relevance in cyberspace (6 marks)
- In-depth analysis of Alex's experiences on the virtual debate platform (7 marks)
- Thoughtful discussion of the lessons and ethical insights derived from the experiences (7 marks)

Analyze the pivotal moments in Alex's encounters with the digital art gallery and the implications for intellectual property ethics. How did their exploration of open-source culture contribute to their understanding?

2. Analyze Intellectual Property Ethics: (20 marks)

- Comprehensive analysis of the ethical implications of open-source culture and intellectual property rights (8 marks)
- Detailed examination of Alex's interactions in the digital art gallery and their impact on their understanding (7 marks)
- An insightful reflection on the changing landscape of creativity and ownership in the digital age (5 marks)

Examine the ethical considerations presented during Alex's participation in the cyber-activist group. How did their application of TCP/IP protocols extend beyond technical aspects?

3. Examine Ethical Considerations in Applying TCP/IP Protocols: (15 marks)

- A thorough examination of ethical implications beyond technical aspects in Alex's involvement with the cyber-activist group (6 marks)
- Reflection on how ethical considerations influenced Alex's decisions and actions (6 marks)
- Discussion of the broader ethical significance of TCP/IP implementations in command lines (3 marks)

Discuss the ethical dilemmas surrounding data privacy and targeted advertising as exemplified by the online marketplaces in Alex's journey. How can these challenges be addressed ethically?

4. Discuss Data Privacy and Targeted Advertising Ethics: (20 marks)

- A comprehensive discussion of the ethical dilemmas posed by data privacy and targeted advertising (7 marks)
- In-depth analysis of how these challenges were manifested in the online marketplaces Alex encountered (8 marks)
- Proposal of effective and ethical strategies to address data privacy concerns in such platforms (5 marks)

Explore the significance of net neutrality and data sovereignty through the lens of Alex's experiences with global connectivity. How can nations work together to foster ethical communication while respecting sovereignty?

5. Explore Net Neutrality and Data Sovereignty Ethics: (15 marks)

- A clear understanding of net neutrality and data sovereignty and their significance (5 marks)
- Detailed analysis of the global connectivity debates and their relevance to Alex's experiences (6 marks)
- Critical reflection on the complexities of fostering ethical communication while respecting national interests (4 marks)

Reflect on the collaborative creation of the network security framework during the climax of Alex's journey. How did this reflect the overarching ethical theme of preserving security while ensuring user privacy?

6. Reflect on Collaborative Network Security Framework: (10 marks)

- An insightful reflection on the collaborative creation of the security framework (4 marks)
- Discussion of how the security framework balanced breach prevention and user privacy (4 marks)
- Consideration of the ethical implications and ethical practices embedded within the framework (2 marks)

[Total = 100 Marks]

End of Formative Assessment 2