Project

Faculty Name:	Information Technology
Module Code:	ITSC311
Module Name:	Social Practices and Security Semester 1
Module Leader:	Dr Timothy Adeliyi
Copy Editor:	Mr Kevin Levy
Total Marks:	120
Submission Date:	11/05/2020 – 15/05/2020

This module is presented on NQF level 7.

Mark deduction of 5% per day will be applied to late submission, up to a maximum of three days.

Projects submitted later than three days after the deadline or not submitted will get 0%. [1]

This is an individual project.

This project contributes 10% towards the final mark.

Instructions to Student

1. Remember to keep a copy of all submitted assignments.

2. All work must be typed.

3. Please note that you will be evaluated on your writing skills in all your assignments.

4. All work must be submitted through Turnitin[2] and the full Originality Report should be attached to the final assignment. Negative marking will be applied if you are found guilty of plagiarism, poor writing skills or if you have applied incorrect or insufficient referencing. (See the table at the end of this document where the application of negative marking is explained.)

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[1] Under no circumstances will assignments be accepted for marking after the assignments of other students have been marked and returned to the students.

[2] Refer to the PIHE Policy for Intellectual Property, Copyright and Plagiarism Infringement, which is available on *my*LMS.

5. Each assignment must include a cover page, table of contents and full bibliography, based on the referencing method applicable to your faculty as applied at Pearson Institute of Higher Education.

6. Use the cover sheet template[3] for the assignment; this is available from your lecturer.

7. Students are not allowed to offer their work for sale or to purchase the work of other students. This includes the use of professional assignment writers and websites, such as Essay Box. If this should happen, Pearson Institute of Higher Education reserves the right not to accept future submissions from a student.

Project Format

Students must follow the requirements when writing and submitting projects as follows:

- Use Arial, font size 10.
- Include page numbers.
- Include a title page.
- Print submissions on both sides of the page.
- Write no more than the maximum word limit.
- Ensure any diagrams, screenshots and PowerPoint presentations fit correctly on the page and are referenced.
- Include a table of contents.
- Use the accurate referencing method throughout the assignment.
- Include a bibliography based on the applicable referencing method at the end of the assignment.
- Include the completed Assessment/Project Coversheet (available on *my*LMS).
- Check spelling, grammar and punctuation.
- Run the assignment through Turnitin software.

Essential Embedded Knowledge and Skills Required of Students

- Report-writing skills
- Ability to analyse scenarios/case studies
- Understanding of subject field concepts and definitions
- Ability to apply theoretical knowledge to propose solutions to real-world problems
- Referencing skills

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[3] Available on *my*LMS.

Resource Requirements

- A device with Internet access for research
- A desktop or personal computer for typing assignments
- Access to a library or resource centre
- Prescribed reading resources

Delivery Requirements (evidence to be presented by students)

- A typed projectt[4]
- A Turnitin Originality Report

Minimum Reference Requirements

At least five references for first year, ten references for second year and fifteen references for third year.

Additional reading is required to complete this assignment successfully. You need to include the following additional information sources:

- Printed textbooks/e-books
- Printed/online journal articles
- Academic journals in electronic format accessed via PROQUEST or other databases
- Periodical articles e.g. business magazine articles
- Information or articles from relevant websites
- Other information sources e.g. geographic information (maps), census reports, interviews

Note
• It is crucial that students reference all consulted information sources, by means of in-text referencing and a bibliography, according to the applicable referencing method.
• Negative marking will be applied if a student commits plagiarism i.e. using information from information sources without acknowledgement and reference to the original source.
• In such cases, negative marking, also known as 'penalty scoring', refers to the practice of subtracting marks for insufficient/incorrect referencing.
• Consult the table at the end of this document, which outlines how negative marking will be applied as well as the way in which it will affect the project mark.

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[4] Refer to the Conditions of Enrolment for more guidance (available on *my*LMS).

Section A

Learning Objective

Evaluate the enterprise systems used within functional areas of the organisation and evaluate specialised information systems that can be applied in organisations.

Project Topic

Enterprise Systems

Scope

The scope of this project is centred on weeks 6 – 12. Resources needed to accomplish this are the prescribed textbook and relevant materials that are available on the web.

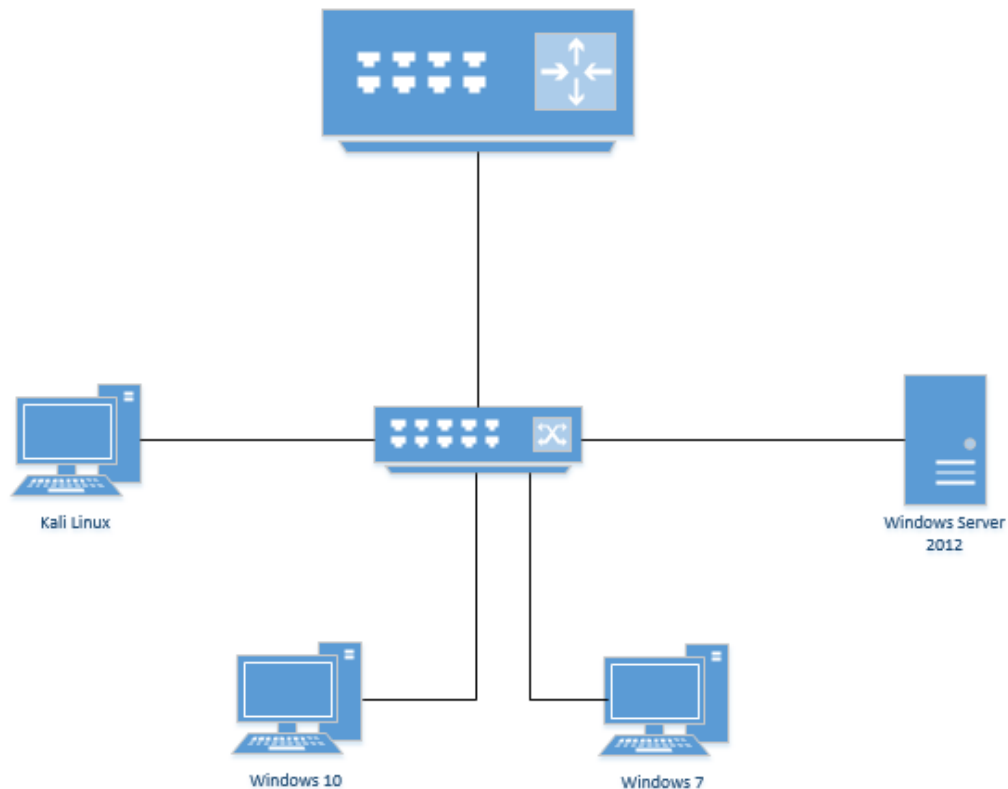Study the scenario and complete the question(s) that follow:

Lab Setup

Figure 1.1

Source: Adeliyi (2020)

Recommended Requirements

The following are the optimal requirements for a Windows GNS3 environment:

Item	Requirement
Operating System	Windows 7 (64 bit) or later
Processor	Core i3 CPU or later
Virtualisation	Virtualisation extensions required. You may need to enable this via your computer's BIOS.
Memory	4 GB RAM or more
Storage	1 GB available space (Windows Installation is < 200 MB).
Additional Notes	You may need additional storage for your operating system and device images.

To setup the virtual lab, the following has to be done:

- Download and install the GNS3 Software.
  https://docs.gns3.com/11YYG4NQlPSl31YwvVvBS9RAsOLSYv0Ocy-uG2K8ytIY/index.html

- Download and install the GNS3 VM Software.
  https://docs.gns3.com/1wdfvS-OlFfOf7HWZoSXMbG58C4pMSy7vKJFiKKVResc/index.html

- Download and install the IOS image for Kali Linux 2018.
  https://www.osboxes.org/kali-linux/
  Note: Username/Password – root/toor or kali/kali

- Download and install the IOS image for Cisco Routers.
  https://docs.gns3.com/1-kBrTplBltp9P3P-AigoMzlDO-ISyL1h3bYpOl5Q8mQ/

- Download and install the IOS image for Windows Server 2016.
  https://docs.gns3.com/appliances/windows_server.html

- Download and install the IOS image for Windows 10 or 7.
  https://docs.gns3.com/appliances/windows.html

1.1   Set up a functional virtual lab as in Figure 1.1.   (60 Marks)

1.2   Configure a DHCP Pool, the IP address of the default-router and the Fa0/0 on R1. (5 Marks)

1.3   Verify the IP address assigned to Windows Server, Windows host and Kali Linux. (5 Marks)

1.4   Configure Telnet on the router.   (5 Marks)

[Sub Total 75 Marks]

End of Question 1

Study the scenario and complete the question(s) that follow:

Footprinting

Footprinting is the technique to collect as much information as possible about the targeted network/victim/system. It helps hackers in various ways to intrude on an organization's system. This technique also determines the security postures of the target. Footprinting can be active as well as passive. Passive footprinting/pseudonymous footprinting involves the collection of data without the owner knowing that hackers gather his/her data. In contrast, active footprints are created when personal data gets released consciously and intentionally or by direct contact of the owner.

There are some branches of footprinting which a learner should know before gathering information.

- Open-Source Footprinting.
- Network-based Footprinting.
- DNS Interrogation.

Objective of Footprinting

- Collect Network Information
- Collect System Information
- Collect Organizations' Information

Source: [Online] https://www.w3schools.in/ethical-hacking/footprinting/ [Accessed: 9 March 2020]

Note: Take a screenshot of the commands and results.

2.1 **Footprinting**

    a.   Using Nmap, provide the operating system running on all the hosts/servers in the network. What is the MAC address of the hosts/servers?   (10 Marks)

    b.   Using Nmap, scan for open ports on all the machines on your network.   (10 Marks)

    c.   List several services running on each host.   (5 Marks)

                                                             [Sub Total 25 Marks]

2.2 **Password Sniffing**

Using Wireshark, capture the Telnet username and password of the router in the network.

(10 Marks)

2.3 **Vulnerability Scanning**

Using Cisco-Torch, analyse the vulnerability that may be found on the router device.

(10 Marks)

End of Question 2

Section B

Plagiarism and Referencing

Pearson Institute of Higher Education places high importance on honesty in academic work submitted by students, and adopts a policy of zero tolerance on cheating and plagiarism. In academic writing, any source material e.g. journal articles, books, magazines, newspapers, reference material (dictionaries), online resources (websites, electronic journals or online newspaper articles), must be properly acknowledged. Failure to acknowledge such material is considered plagiarism; this is deemed an attempt to mislead and deceive the reader, and is unacceptable.

Pearson Institute of Higher Education adopts a zero tolerance policy on plagiarism, therefore, any submitted assessment that has been plagiarised will be subject to severe penalties. Students who are found guilty of plagiarism may be subject to disciplinary procedures and outcomes may include suspension from the institution or even expulsion. Therefore, students are strongly encouraged to familiarise themselves with referencing techniques for academic work. Students can access the PIHE Guide to Referencing on *my*LMS.

Negative Marking

Third-year Students

- A minimum of 15 additional information sources must be consulted and correctly cited.
- If no additional information sources have been used, a full 15% must be deducted.
- Deduct 1% per missing resource of the required 15. For example:
- If only five resources cited, deduct 10%.
- If only three resources cited, deduct 12%.
- Markers to apply the penalties for Category A for insufficient sources and incorrect referencing style.
- To determine the actual overall similarity percentage and plagiarism, markers must interpret the Turnitin Originality Report with reference to credible sources used and then apply the penalties as per the scale in the PIHE Policy for Intellectual Property, Copyright and Plagiarism Infringement.
- The similarity report alone is not an assessment of whether work has or has not been plagiarised. Careful examination of both the submitted paper/assignment/project and the suspect sources must be done.

Category A

Minimum reference requirements	Deduction of final mark
No additional information sources have been used or referenced.	15%