11 Enterprise Computing

Task 3: Network Development Project

Due Date: 28 Aug 2025

Task Distributed: 20 Jun 2025

Unit: Networking systems and social computing

Task Type: Report and Practical Project

Task Weighting: 30 %

Outcomes:
EC-11-01: Describes how systems are used in a range of enterprises
EC-11-03: Describes how data is safely and securely collected, stored and manipulated when developing enterprise computing systems
EC-11-04: Describes how data is used in enterprise computing systems
EC-11-06: Explains how innovative technologies have influenced enterprise computing systems
EC-11-07: Explore the social, ethical and legal implications of the application of enterprise computing systems on the individual, society and the environment
EC-11-09: Documents the management and evaluates the development of an enterprise solution

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Task Description - Scenario - IT Startup

An IT startup has a two storey building in southern Sydney and is planning to open a new office within the next three months. You have been hired by the startup to design and implement a new network that meets the following requirements:

- printers and computers need to be connected via Ethernet cable (Cat 6)
- wireless connectivity is required to connect laptops, smart light bulbs, smart power points and iPads across both levels of the building
- Internet access is needed so employees can securely access cloud storage

Task

Inspired by the Internet of Things (IoT), you are required to design, model and set up a network of interconnected devices that meet the requirements of the IT startup company and create a video to showcase the network. The video should include screen recording of components being configured and networked and include a visual diagram and virtual simulator (using CISCO Packet Tracer) to showcase the network that has been designed.

Part A: Documentation

You are required to complete project documentation which addresses the following:

- define the purpose of the network being constructed
- explain what Internet of Things (IoT) are used in the network
- produce a network diagram of your proposed network design which should include connection type, device name, and ip address.
- explain how data is transmitted within the network with reference to unsecured data, encrypted data and the actual infrastructure (virtual or physical). Include reference to specific hardware and software used within the network.

Part B: Video (Screen recording)

The video component (screen recording) of the task needs to include:

- appropriate titles, voice narration, relevant graphics, diagrams to help describe how systems are set up and connected,
- explain the purpose of packet sniffing software and ethical consideration when using these type of applications,
- explain how and why cybersecurity policies and procedures should be implemented on the interconnected network devices.
- demonstrate how you have configured your device within the network including:
    - naming the device
    - ip address
    - updating the device (drivers and firmware)
    - configuring security protocols
    - connecting to the internet
- explain the purpose of Quality Of Service (QOS) on a router to optimise bandwidth and prioritise connected clients (eg CEO get's top priority).

NESA Glossary of Key Words

Understand the verb associated with the task. The verb will provide an understanding of the detail needed to successfully answer the question.

- **Define** - State meaning and identify essential qualities
- **Describe** - Provide characteristics and features
- **Evaluate** - Make a judgement based on criteria determine the value of
- **Identify** - Recognise and name.

Check the NESA Glossary of Key Words for further guidance
https://educationstandards.nsw.edu.au/wps/portal/nesa/11-12/hsc/hsc-student-guide/glossary-keywords

Details of Submission

Part A: Documentation

The report addressing the questions identified above needs to be submitted on Moodle by the due date as a .PDF

Part B: Practical

The video (screen recording) should be exported as an .MP4 file and submitted on Moodle by the due date.

Teacher Feedback and Student Self-Reflection

The task will typically be returned to students within **14 days** of the due date.

Information on how to improve will be provided through written teacher feedback and the marking criteria. Students can clarify or seek further feedback by speaking with their teacher.

Upon return of the task and teacher feedback, students will also be expected to complete the following self-reflection form, to provide them with the opportunity to reflect on the strength of their performance, as well as areas that have been identified to strengthen in future tasks - https://forms.gle/oBnPJ8EsGLTQZm7Z8

How does this link to my learning?

This task will allow students to demonstrate their understanding of theoretical concepts, providing students with the opportunity to showcase their knowledge, understanding and skills in

- Effective use of project management techniques including documentation and communication
- Demonstrates the ability to uses appropriate resources and tools to effectively develop, document and manage their project

Assessment Procedures

All students should be fully aware of the School Assessment Procedures for their year group. These were provided at the beginning of the school year and are available off the school website under the Learning Tab for each year group.

Marking Rubric

PART A - Documentation					
CRITERIA	**1**	**2**	**3**	**4**	**5**
Purpose of network	Student attempts to define the purpose of the network or no understanding of the network purpose	Student provides a basic understanding of the purpose of the network or identifies the purpose of the network	Student provides an outline of the purpose of the network	Student describes the purpose of the network.	Student clearly describes the purpose of the network.
CRITERIA	**1 - 2**	**3 - 4**	**5 - 6**	**7 - 8**	**9 - 10**
Explanation of IoT	Student provides limited or no understanding of the Internet of Things (IoT) devices used on the network	Student provides a basic understanding of the IoTs devices used on the network	Student provides a sound knowledge and description of the IoTs devices used on the network	Student provides a high level and thorough description of the IoTs devices used on the network	Student provides an extensive and detailed explanation of the IoTs devices used on the network
Network Diagram	Student attempts to produce a network diagram or no understanding of network diagrams	Student creates a network diagram which may or may not relate to the scenario. Attempts to label some of the nodes of the network with basic information. Uses not standardised diagrams to represent nodes and connection types. Uses inappropriate connection types between nodes.	Student creates an appropriate network diagram which includes somewhat appropriate connection types, labeling of some nodes on the network showing some information (connection type, device name, ip address)	Student creates an highly appropriate network diagram which includes mostly appropriate connection types, labeling of most nodes on the network showing most information (connection type, device name, ip address)	Student creates a comprehensive and highly appropriate network diagram which includes labeling of all nodes on the network showing all relevant information (connection type, device name, ip address).
Data Transmission	Student provides limited or no understanding of the role hardware and software hss within the network in relation to the transmission of data	Student provides a basic understanding of or outlines the role of the hardware and software used in the transmission of data. Attempts to addresses unsecured data or encrypted data or infrastructure.	Student provides a sound knowledge and description of the role of the hardware and software used in the transmission of data. Addresses unsecured data and/or encrypted data and/or infrastructure.	Student provides a high level and thorough evaluation of the role of the hardware and software used in the transmission of data. Addresses unsecured data, encrypted data and infrastructure.	Student provides an extensive and detailed evaluation of the role of the hardware and software used in the transmission of data. Addresses unsecured data, encrypted data and infrastructure in relation to the network created.
					Part A TOTAL / 35

PART B - Video					
CRITERIA	**1 - 2**	**3 - 4**	**5 - 6**	**7 - 8**	**9 - 10**
Use of film to document the management and development of an enterprise solution	The student attempts to create a limited video (screen recording). The student attempts to capture relevant and original screen recordings related to the task.	The student creates an informative, video (screen recording). The video (screen recording) demonstrates use of some pre and post-production effects. The end product is a video (screen recording) of an elementary standard. The student provides original screen recordings that they have captured.	The student creates a substantial and informative video (screen recording). The video (screen recording) demonstrates reasonable quality in some aspects of its production including pre and post-production effects. The end product is a video (screen recording) of substantial standard. The student provides a range of original screen recordings that they have captured.	The student creates a well-developed, informative, and entertaining video (screen recording). The video (screen recording) demonstrates reasonable quality in every aspect of its production including a range of pre and post-production effects. The end product is a video (screen recording) completed to a high standard. The student provides a wide range of screen recordings that they have captured.	The student creates an outstanding, informative, and entertaining video (screen recording). The video (screen recording) demonstrates quality in every aspect of its production including a range of pre and post-production effects. The end product is a video (screen recording)of professional standard. The student provides an outstanding range of original screen recordings that they have captured.
Explains purpose of packet sniffing	The student's video briefly mentions packet sniffing software or was not provided.	The student's video identifies use of packet sniffing software within a network.	The student's video outlines use of packet sniffing software that could be used within the interconnected network. The student outlines some ethical considerations if using packet sniffing software.	The student's video describes the use of packet sniffing software in the interconnected network device. The student describes ethical considerations if using packet sniffing software.	The student's video explains the use of packet sniffing software in the interconnected network device. The student explains a wide range of ethical considerations if using packet sniffing software.
Explain cybersecurity policies and procedures	The student's video briefly mentions cybersecurity or was not provided.	The student identifies ways to implement procedures and/or security protocols considering cybersecurity in the interconnected network device.	The student outlines ways to implement procedures and security protocols considering cybersecurity in the interconnected network device.	The student describes how the interconnected network device will implement procedures and security protocols considering cybersecurity.	The student clearly explains how the interconnected network device will implement procedures and security protocols considering cybersecurity.

Device configuration	The student's video attempts to mention device configuration or no understanding of device configuration.	The student provides a limited narration on the configuration of devices on the network. Limited reference to device name or ip address or security protocols.	The student's video outlines the configuration of the devices used on the network including reference to device name or ip address or security protocols. Outlines the updating of device hardware.	The student's video describes the configuration of the devices used on the network including reference to relevant device names, ip addresses and security protocols. Describes the process of updating device hardware.	The student's video clearly describes the configuration of the devices used on the network including reference to highly relevant device names, ip addresses and security protocols. Clearly describes the process and purpose of updating device hardware.
Quality of Service (QOS)	The student attempts to mention quality of service or no understanding of router configuration shown.	The student provides a limited narration on the configuration of the router with limited reference to bandwidth and device priority.	The student's video outlines the configuration of the router with some reference to bandwidth and device priority. Attempts to showcase the effects on network performance.	The student's video describes the configuration of the router with reference to bandwidth and device priority. Demonstrates the effects of applying the settings on the performance of the network.	The student's video clearly describes the configuration of the router with reference to bandwidth and device priority. Clearly explains the why and the effects of applying the settings on the performance of the network.
Students narrated voice to document the development of an enterprise system	The student attempts to provide a narration using their own voice or uses AI for the narration.	The student provides a limited narration or spoken words are hard to understand and are unclear.	The student provides a clear voice which is easy to understand and is delivered with an appropriate pace and volume using their own voice.	The student provides a detailed narration which is clear and easy to understand throughout the video and the student uses their own voice. Audio clarity is of a high standard.	The student provides an extensive and detailed narration using their own voice. The student's voice is easily understood, delivered at a highly appropriate pace and volume. Audio clarity is of a professional standard.
				Part B TOTAL	**/ 50**
				OVERALL TOTAL	**/ 85**