NATIONAL SKILLS QUALIFICATION

LEVEL 3

TITLE:

HOME AUTOMATION AND IoT TECHNOLOGIES

YEAR:

2024

NATIONAL SKILLS QUALIFICATION

NSQ LEVEL 3- HOME AUTOMATION AND IoT TECHNOLOGIES

GENERAL INFORMATION

QUALIFICATION PURPOSE

This qualification is designed is to equip individuals with the specialized knowledge and practical skills needed to install, configure, maintain, and troubleshoot home automation and IoT systems, enabling them to work independently in residential and commercial environments without supervision.

QUALIFICATION OBJECTIVES

The learner should be able to: -

i. Understand home automation and IoT technologies, including smart devices, sensors, controllers, and networking protocols.

ii. Install and configure home automation systems, integrating various IoT devices for seamless functionality.

iii. Troubleshoot issues related to connectivity, device interoperability, and system malfunctions.

iv. Comply with industry standards, safety regulations, and best practices in home automation and IoT installations.

v. Enhance their problem-solving skills in relation to system optimization, scalability, and future-proofing smart homes and IoT infrastructures.

vi. Manage projects, deliver high-quality services, and meet client expectations effectively.

Mandatory Units

Unit No	Reference Number	NOS Title	Credit Value	Guided Learning Hours	Remark
Unit 001	ICT/HAIT/001/L3	Health and Safety Standards and Regulatory Compliance.	1	10	Mandatory
Unit 002	ICT/HAIT/002/L3	Teamwork in Home Automation Projects	1	10	Mandatory
Unit 003	ICT/HAIT/003/L3	Communication in Home Automation and IoT	1	10	Mandatory
Unit 004	ICT/HAIT/004/L3	Introduction to Home Automation and IoT	2	20	Mandatory
Unit 005	ICT/HAIT/005/L3	Networking Fundamentals for Home Automation	2	20	Mandatory
Unit 006	ICT/HAIT/006/L3	Installation and Configuration of Home Automation Systems	3	30	Mandatory
Unit 007	ICT/HAIT/007/L3	Troubleshooting Home Automation and IoT Devices	2	20	Mandatory
Unit 008	ICT/HAIT/008/L3	System Integration and Interoperability	2	20	Mandatory
		TOTAL	**12**	**140**	

Mandatory Units

Learners must complete all mandatory units to gain a solid foundation in home automation and IoT technologies. These units are designed to provide essential knowledge and skills that are critical for independent work in this field. The credit hours for mandatory units are non-negotiable and must be fulfilled to obtain the qualification.
Total Credit Learning Hours from Mandatory Units: ***140***

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LEVEL 3: *HOME AUTOMATION AND IoT TECHNOLOGIES*

UNIT 1: HEALTH AND SAFETY STANDARDS AND REGULATORY COMPLIANCE.

Unit Reference Number: ICT/HAIT/001/L3

NSQ Level: 3

Credit Value: 1

Guided Learning Hours: 10

Unit Purpose:

The purpose of this unit is to equip learners with the knowledge and skills necessary to ensure adherence to safety standards, regulatory requirements, and best practices in the installation, operation, and maintenance of home automation and IoT systems, safeguarding both users and property.

Unit assessment requirements/ evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

Assessment methods to be used include:

1. Direct Observation/oral questions (DO)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Assignment (ASS), etc.

UNIT 01: HEALTH AND SAFETY STANDARDS AND REGULATORY COMPLIANCE.

LEARNING OBJECTIVE (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type					Evidence Ref. Page No.			
LO 1: **Understand Occupational Health and Safety Regulations**	1.1	Describe the key OHS principles governing home automation and IoT installations.									
	1.2	Identify specific national and international OHS regulations applicable to electrical and smart device installations.									
	1.3	Explain the legal responsibilities of employers and workers under occupational safety laws in the home automation industry.									
LO 2: **Apply Safety Practices in the Workplace**	2.1	Demonstrate the proper use of personal protective equipment (PPE) such as gloves, goggles, and insulated tools during installations.									
	2.2	Implement safe working procedures for handling and installing electrical components in home automation systems.									
	2.3	Inspect the work area for potential hazards, ensuring compliance with safety protocols before starting any installation.									
LO 3: **Identify and Assess Workplace Hazards**	3.1	Conduct a risk assessment for a home automation installation site, identifying potential electrical, fire, and ergonomic hazards.									
	3.2	Evaluate the severity and likelihood of hazards identified during risk assessments to prioritize corrective actions.									
	3.3	Apply control measures such as grounding, insulation, and safety barriers to mitigate risks identified in the work environment.									
LO 4:	4.1	Follow safety guidelines when									

LEARNING OBJECTIVE (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type					Evidence Ref. Page No.			
Ensure Safe Installation of Home Automation and IoT Devices		installing IoT devices to ensure proper insulation and protection against electrical surges.									
	4.2	Mount home automation equipment, such as hubs and smart sensors, in safe, non-hazardous locations.									
	4.3	Test the installed equipment to ensure that all safety mechanisms (e.g., circuit breakers, surge protectors) are functional and compliant with OHS standards.									
LO 5: **Comply with Legal and Ethical Obligations**	5.1	Verify that all installed devices and systems comply with local and international health and safety regulations.									
	5.2	Ensure adherence to electrical codes, such as wiring standards and safe installation practices.									
	5.3	Demonstrate ethical responsibility by maintaining a safe working environment that protects the health and safety of all individuals on-site.									
LO 6: **Maintain Documentation and Records**	6.1	Document safety checks for all home automation and IoT installations.									
	6.2	Prepare a report detailing the risk assessments conducted.									
	6.3	Record incidents or near-miss events in the workplace, ensuring they are logged for future safety audits and improvements.									
Learner's Signature			Date:								
Assessor's Signature			Date:								
IQA's Signature			Date:								
EQA's Signature			Date:								

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LEVEL 3: *HOME AUTOMATION AND IoT TECHNOLOGIES*

UNIT 2: TEAMWORK IN HOME AUTOMATION PROJECTS

Unit Reference Number: ICT/HAIT/002/L3

NSQ Level: 3

Credit Value: 1

Guided Learning Hours: 10

Unit Purpose:

The purpose of this unit is to equip learners with the skills and strategies needed to collaborate effectively in team environments, ensuring the successful execution of home automation projects by leveraging the strengths of diverse team members and optimizing project outcomes.

Unit assessment requirements/ evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

Assessment methods to be used include:

1. Direct Observation/oral questions (DO)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Assignment (ASS), etc.

UNIT 02: TEAMWORK IN HOME AUTOMATION PROJECTS

LEARNING OBJECTIVE (LO) The learner will:	5		PERFORMANCE CRITERIA The learner can:	Evidence Type					Evidence Ref. Page No.			
LO 1: **Know the Importance of Teamwork in Home Automation Projects**	1.1		Explain the role of teamwork in successfully completing home automation installations									
	1.2		Identify the benefits of collaborative work, such as efficiency, innovation, and problem-solving.									
	1.3		Describe how different team members' roles contribute to the overall success of a project.									
LO 2: **Contribute Effectively to a Team**	2.1		Participate actively in team meetings									
	2.2		Offer support and assistance to team members when needed.									
	2.3		Complete assigned tasks within the agreed-upon timeframe.									
LO 3: **Solve Problems Collaboratively**	3.1		Discuss potential challenges encountered during a home automation project with the team.									
	3.2		Work together with team members to troubleshoot issues.									
	3.3		Identify innovative solutions for optimizing the installation of home automation systems.									
LO 4: **Manage Conflict and Resolve Disagreements in a Team**	4.1		Recognize the causes of conflict in team environments and their potential impact on home automation project outcomes.									
	4.2		Address conflicts directly and professionally.									
	4.3		Apply conflict resolution strategies.									

Learner's Signature	Date:
Assessor's Signature	Date:
IQA's Signature	Date:
EQA's Signature	Date:

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LEVEL 3: *HOME AUTOMATION AND IoT TECHNOLOGIES*

UNIT 3: COMMUNICATION IN HOME AUTOMATION AND IOT

Unit Reference Number: ICT/HAIT/003/L3

NSQ Level: 3

Credit Value: 1

Guided Learning Hours: 10

Unit Purpose:

The purpose of this unit is to equip learners with effective communication skills for conveying technical information, collaborating with team members, and interacting with clients in home automation and IoT projects.

Unit assessment requirements/ evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

Assessment methods to be used include:

1. Direct Observation/oral questions (DO)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Assignment (ASS), etc.

UNIT 03: COMMUNICATION IN HOME AUTOMATION AND IoT

LEARNING OBJECTIVE (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type					Evidence Ref. Page No.			
LO 1: Communicate Technical Information Effectively	1.1	Explain the functionality of home automation devices and IoT systems to clients in non-technical language to ensure clear understanding.									
	1.2	Prepare technical documentation, such as installation guides and system specifications, which is concise and easy to follow for both technical and non-technical users.									
	1.3	Demonstrate how to troubleshoot common technical issues using clear, step-by-step verbal or written instructions to guide clients or colleagues.									
LO 2: Collaborate Effectively with Team Members	2.1	Use appropriate communication platforms (e.g., email, project management tools) to share updates, instructions, and progress reports with team members in real-time.									
	2.2	Listen actively during team discussions to fully understand and address the concerns or input of other team members.									
	2.3	Clarify technical instructions given by colleagues, asking follow-up questions.									
LO 3: Interact Professionally with Clients and Stakeholders	3.1	Conduct client consultations to gather project requirements and communicate possible solutions.									
	3.2	Present project updates, timelines, and system performance reports to clients									
	3.3	Respond to client inquiries promptly.									
Learner's Signature			Date:								
Assessor's Signature			Date:								
IQA's Signature			Date:								
EQA's Signature			Date:								

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LEVEL 3: *HOME AUTOMATION AND IoT TECHNOLOGIES*

UNIT 4: INTRODUCTION TO HOME AUTOMATION AND IoT

Unit Reference Number: ICT/HAIT/004/L3

NSQ Level: 3

Credit Value: 2

Guided Learning Hours: 20

Unit Purpose:

The purpose of this unit is to provide learners with a foundational understanding of home automation and IoT technologies, covering the principles, components, and applications that enable smart homes and connected systems.

Unit assessment requirements/ evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

Assessment methods to be used include:

1. Direct Observation/oral questions (DO)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Assignment (ASS), etc.

UNIT 04: INTRODUCTION TO HOME AUTOMATION AND IoT

LEARNING OBJECTIVE (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type					Evidence Ref. Page No.			
LO 1: **Know the Fundamentals of Home Automation and IoT**	1.1	Describe the key concepts of home automation and IoT.									
	1.2	Identify the core components of a typical home automation system, such as sensors, controllers, and network devices.									
	1.3	Explain how IoT devices communicate and interact with each other									
LO 2: **Recognize the Applications and Benefits of Home Automation and IoT**	2.1	List common applications of home automation systems, such as lighting control, security systems, and energy management.									
	2.2	Illustrate how home automation can enhance energy efficiency, convenience, and security in residential environments.									
	2.3	Discuss the potential benefits and challenges of IoT integration in modern homes, including privacy and data security concerns.									
LO 3: **Explore Emerging Trends and Technologies in Home Automation and IoT**	3.1	Research the latest advancements in IoT technologies, such as smart speakers, voice assistants, and AI integration.									
	3.2	Identify upcoming trends in home automation, including interoperability standards, smart energy solutions, and automation in everyday appliances.									
	3.3	Analyse how new technologies, like 5G and edge computing, are impacting the development and expansion of home automation systems.									
LO 4: **Understand the Networking Requirements for Home Automation Systems**	4.1	Identify the types of networks commonly used in home automation systems.									
	4.2	Describe the role of gateways in facilitating communication between IoT devices.									
	4.3	Explain the importance of reliable and									

LEARNING OBJECTIVE (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type					Evidence Ref. Page No.				
		secure networking of IoT devices in smart homes.										
Learner's Signature			Date:									
Assessor's Signature			Date:									
IQA's Signature			Date:									
EQA's Signature			Date:									

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UNIT 5: NETWORKING FUNDAMENTALS FOR HOME AUTOMATION

Unit Reference Number: ICT/HAIT/005/L3

NSQ Level: 3

Credit Value: 2

Guided Learning Hours: 20

Unit Purpose:

The purpose of this unit is to provide learners with a foundational understanding of networking concepts, protocols, and architectures essential for designing, installing, and maintaining reliable and secure networks that support home automation systems and IoT devices.

Unit assessment requirements/ evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

Assessment methods to be used include:

1. Direct Observation/oral questions (DO)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Assignment (ASS), etc.

UNIT 05: NETWORKING FUNDAMENTALS FOR HOME AUTOMATION

LEARNING OBJECTIVE (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type					Evidence Ref. Page No.			
LO 1: Know the Basic Networking Concepts and Terminology	1.1	Define key networking terms, such as IP address, router, gateway, LAN, WAN, and subnet.									
	1.2	Explain the role of network components in home automation networks.									
	1.3	Identify the differences between wired and wireless networks and their application in home automation systems.									
LO 2: Know Network Protocols Relevant to Home Automation	2.1	Describe commonly used communication protocols in home automation, including Wi-Fi, Zigbee, Z-Wave, and Bluetooth.									
	2.2	Compare the advantages and disadvantages of different network protocols for specific smart home devices (e.g., security cameras, thermostats, lighting).									
	2.3	Explain the importance of the Transmission Control Protocol/Internet Protocol (TCP/IP) in facilitating data transmission between IoT devices.									
LO 3: Set Up and Configure a Home Automation Network	3.1	Configure a wireless router to serve as the central hub for a home automation network.									
	3.2	Connect multiple IoT devices to the network									
	3.3	Configure device settings and network parameters, such as SSID, encryption, and IP addressing, to optimize performance and security.									
LO 4: Optimize Network Performance for Home Automation	4.1	Measure network performance metrics, such as bandwidth, latency, and signal strength, using appropriate diagnostic tools.									
	4.2	Adjust network settings, including channel selection, device prioritization (QoS), and bandwidth allocation, to									

LEARNING OBJECTIVE (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type					Evidence Ref. Page No.			
Systems		improve overall system performance.									
	4.3	Implement network management tools to monitor network stability and performance over time.									
LO 5: Know the Role of Cloud Services in Home Automation Networks	5.1	Explain how cloud services are integrated into home automation networks									
	5.2	Connect IoT devices to cloud-based platforms, enabling remote access and control through mobile apps or web interfaces.									
	5.3	Analyse the benefits and potential risks of using cloud services, including data privacy, reliability, and service costs.									
Learner's Signature			Date:								
Assessor's Signature			Date:								
IQA's Signature			Date:								
EQA's Signature			Date:								

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UNIT 6: INSTALLATION AND CONFIGURATION OF HOME AUTOMATION SYSTEMS

Unit Reference Number: ICT/HAIT/006/L3

NSQ Level: 3

Credit Value: 2

Guided Learning Hours: 20

Unit Purpose:

The purpose of this unit is to equip learners with the practical skills and knowledge required to install, configure, and integrate home automation devices and systems, ensuring proper functionality, user customization, and seamless operation in smart home environments.

Unit assessment requirements/ evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

Assessment methods to be used include:

1. Direct Observation/oral questions (DO)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Assignment (ASS), etc.

UNIT 06: INSTALLATION AND CONFIGURATION OF HOME AUTOMATION SYSTEMS

LEARNING OBJECTIVE (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type					Evidence Ref. Page No.			
LO 1: **Explain the Components and Architecture of Home Automation Systems**	1.1	**Explain** the key components of a home automation system, such as controllers, sensors, actuators, and hubs.									
	1.2	Explain the role of communication protocols (e.g., Zigbee, Z-Wave, Wi-Fi) in connecting and controlling home automation devices.									
	1.3	Describe how various subsystems, such as lighting, HVAC, and security, interact within a smart home environment.									
LO 2: **Install Home Automation Devices and Components**	2.1	Install basic home automation devices, such as smart thermostats, lights, or cameras, following manufacturer guidelines.									
	2.2	Position sensors and smart devices in optimal locations to ensure maximum efficiency and coverage in the home.									
	2.3	Connect devices to the central hub or controller and verify that they are powered and communicating with the network.									
LO 3: **Configure Home Automation Systems**	3.1	Configure device settings (e.g., schedules, preferences, triggers) using a smartphone app, desktop software, or control panel.									
	3.2	Integrate devices into a unified system, enabling communication between different subsystems, such as lighting and security.									
	3.3	Test the configuration by activating devices and verifying that they respond correctly to commands and automation rules.									
LO 4: **Ensure System**	4.1	Implement security measures, such as encryption and strong passwords, to protect home automation devices and									

LEARNING OBJECTIVE (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type					Evidence Ref. Page No.			
Security and Privacy		networks from unauthorized access.									
	4.2	Enable security features such as two-factor authentication (2FA) and device monitoring to enhance system protection.									
	4.3	Monitor system logs for suspicious activity and take steps to secure vulnerable devices or settings.									
LO 5: Perform System Testing and Quality Assurance	5.1	Test all installed devices to ensure they respond properly to user commands and automation rules and are integrated with other systems.									
	5.2	Conduct functional tests for automation scenarios, such as turning lights on when motion is detected or adjusting temperature based on time.									
	5.3	Verify that the system is operating within performance specifications, ensuring all devices work without delay or errors.									
LO 6: Provide User Training and Support	6.1	Explain system functionality and user controls to clients, demonstrating how to operate and customize their home automation system.									
	6.2	Provide documentation or user manuals that outline system features, troubleshooting steps, and maintenance tips.									
	6.3	Respond to client inquiries or issues post-installation, offering support and guidance on system use and optimization.									
Learner's Signature			Date:								
Assessor's Signature			Date:								
IQA's Signature			Date:								
EQA's Signature			Date:								

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LEVEL 3: *HOME AUTOMATION AND IoT TECHNOLOGIES*

UNIT 7: TROUBLESHOOTING HOME AUTOMATION AND IOT DEVICES

Unit Reference Number: ICT/HAIT/007/L3

NSQ Level: 3

Credit Value: 2

Guided Learning Hours: 20

Unit Purpose:

The purpose of this unit is to equip learners with the skills and knowledge to systematically diagnose, resolve, and prevent technical issues in home automation and IoT devices, ensuring optimal system performance, reliability, and user satisfaction.

Unit assessment requirements/ evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

Assessment methods to be used include:

1. Direct Observation/oral questions (DO)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Assignment (ASS), etc.

UNIT 07: TROUBLESHOOTING HOME AUTOMATION AND IOT DEVICES

LEARNING OBJECTIVE (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type					Evidence Ref. Page No.			
LO 1: **Identify Common Issues in Home Automation and IoT Devices**	1.1	List the common technical issues encountered in home automation devices, such as connectivity problems, sensor malfunctions, and power failures.									
	1.2	Recognize common symptoms of device malfunction, such as unresponsiveness, delays, or incorrect system behavior.									
	1.3	Categorize issues based on their origin, such as hardware faults, software glitches, or network connectivity issues.									
LO 2: **Diagnose Connectivity Problems in IoT Devices**	2.1	Analyse network-related issues by checking Wi-Fi signal strength, interference, and router configuration settings.									
	2.2	Test the communication between IoT devices and the central hub or cloud service, ensuring they are properly connected.									
	2.3	Verify that device firmware and software versions are up to date to ensure compatibility with the home network and other devices.									
LO 3: **Resolve Device Configuration and Integration Issues**	3.1	Reset devices to factory settings when necessary to resolve configuration conflicts and reconnect them to the home network.									
	3.2	Reconfigure device settings, such as IP addresses, network credentials, and automation rules, to resolve integration problems.									
	3.3	Update devices with the latest firmware and ensure that they are correctly paired with compatible hubs or controllers.									

LEARNING OBJECTIVE (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type					Evidence Ref. Page No.			
LO 4: **Troubleshoot Power and Hardware Issues**	4.1	Inspect power supplies and batteries to identify issues such as depleted batteries, loose connections, or faulty power adapters.									
	4.2	Replace defective hardware components like sensors, actuators, or cables to restore device functionality.									
	4.3	Test device circuits and power outputs to ensure all components are receiving adequate power for optimal operation.									
LO 5: **Monitor and Analyse System Logs and Diagnostics**	5.1	Access system logs on devices or cloud platforms to monitor errors, warnings, and abnormal activities that indicate system issues.									
	5.2	Interpret diagnostic reports generated by smart devices or network management tools to identify potential causes of malfunctions.									
	5.3	Document the steps and findings from the troubleshooting process to ensure a clear record for future reference or further analysis.									
Learner's Signature			Date:								
Assessor's Signature			Date:								
IQA's Signature			Date:								
EQA's Signature			Date:								

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UNIT 8: SYSTEM INTEGRATION AND INTEROPERABILITY

Unit Reference Number: ICT/HAIT/008/L3

NSQ Level: 3

Credit Value: 2

Guided Learning Hours: 20

Unit Purpose:

The purpose of this unit is to provide learners with the skills and knowledge to integrate various home automation and IoT devices, ensuring seamless interoperability between systems, platforms, and protocols for efficient and unified smart home operation.

Unit assessment requirements/ evidence requirements:

Assessment must be carried out in real workplace environment in which learning and human development is carried out.

Assessment methods to be used include:

1. Direct Observation/oral questions (DO)
2. Question and Answer (QA)
3. Witness Testimony (WT)
4. Assignment (ASS), etc.

UNIT 08: SYSTEM INTEGRATION AND INTEROPERABILITY

LEARNING OBJECTIVE (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type					Evidence Ref. Page No.			
LO 1: **Know the Principles of System Integration and Interoperability**	1.1	Define key concepts related to system integration and interoperability, including protocols, APIs, and standards.									
	1.2	Explain the importance of integration in home automation, highlighting benefits such as enhanced functionality and user experience.									
	1.3	Identify common integration challenges and compatibility issues between different devices and systems.									
LO 2: **Evaluate Device and System Compatibility**	2.1	Review device specifications and documentation to determine compatibility with existing home automation systems and protocols.									
	2.2	Compare integration options for devices that use different communication protocols, such as Zigbee, Z-Wave, and Wi-Fi.									
	2.3	Test interoperability between devices from different manufacturers to ensure they function together as intended.									
LO 3: **Configure and Implement Integration Solutions**	3.1	Set up and configure a central hub or gateway to manage and control multiple home automation devices from different protocols.									
	3.2	Integrate devices into a unified system using available APIs or third-party platforms, ensuring that they can communicate and interact effectively.									
	3.3	Configure automation rules and scenarios that involve multiple devices, ensuring that actions and triggers work seamlessly across the system.									
	3.4	Verify integration by conducting tests to ensure that devices respond correctly to commands and automation rules.									

LEARNING OBJECTIVE (LO) The learner will:		PERFORMANCE CRITERIA The learner can:	Evidence Type					Evidence Ref. Page No.			
LO 4: **Troubleshoot Integration and Interoperability Issues**	4.1	Identify integration issues, such as devices not responding or conflicting automation rules, by analysing system behaviour and logs.									
	4.2	Resolve interoperability problems by adjusting device settings, reconfiguring the central hub, or updating firmware/software as needed.									
	4.3	Document the troubleshooting process and solutions applied to address integration issues, creating a reference for future problems.									
	4.4	Test the system after troubleshooting to ensure that integration issues have been resolved and that the devices function correctly.									
LO 5: **Ensure Data Consistency and Synchronization Across Systems**	5.1	Monitor data exchange between integrated systems to ensure that information, such as device status and user settings, is synchronized accurately.									
	5.2	Implement data consistency checks and error handling procedures to address discrepancies or conflicts between systems.									
	5.3	Configure data synchronization settings to ensure that changes in one system are reflected across all integrated devices and platforms.									
Learner's Signature			Date:								
Assessor's Signature			Date:								
IQA's Signature			Date:								
EQA's Signature			Date:								

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