MICROCREDENTIALS FOR PROBLEM SOVING COMPETENCE 5.1: SOLVING TECHNICAL PROBLEMS

DSW
DIGITAL SKILLS WALLET

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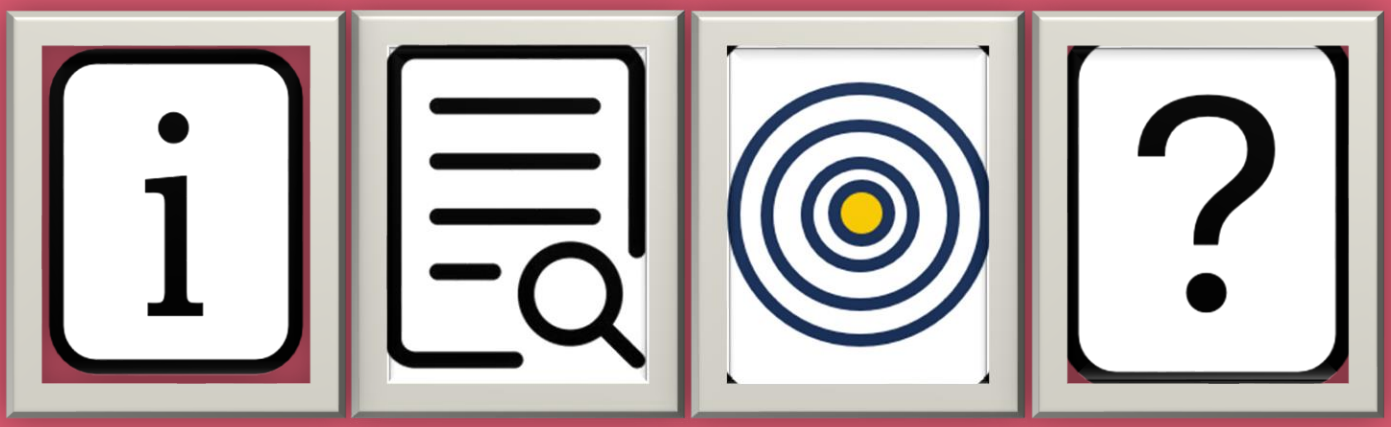
Problem solving
Information and data literacy
Communication and collaboration
Digital content creation
Safety
DigComp

Contents

FOUNDATION LEVEL

(Level 1 and Level 2)



Essentials of Computer Systems (MC 5.1.A.1)

Basic Information

Identification of the learner	Any Citizen
Title and code of the micro-credential	Essentials of Computer Systems **Code: MC 5.1.A.1**
Country(ies)/Region(s) of the issuer	IRELAND, ITALY, CYPRUS, GREECE, ROMANIA http://dsw.projectsgallery.eu
Awarding body(ies)	DSW Consortium Project Number: **101087628**
Date of issuing	Nov 2023
Notional workload needed to achieve the learning outcomes	1-3 Hours
Level of the learning experience leading to the micro-credential	FOUNDATION
Type of assessment	Automatically marked Questions Number of Questions: 16 – 20 Passing Score: 75%
Form of participation in the learning activity	Online Asynchronous
Type of quality assurance used to underpin the micro-credential	Peer Review

Learning Outcomes

Learning Outcomes (ref. LOs 5.1.1 and 5.1.2)

Computer System Identification

- Distinguish between hardware and software
- Identify various electronic devices, their functions and benefits

Description

"**Essentials of Computer Systems**" Micro Credential, learners will achieve primary knowledge and practical education for individuals seeking to improve their capabilities when addressing digital challenges through firstly being able to identify the essential elements of computer systems.

Upon achievement of this Micro credential learners will be able to demonstrate the necessary and basic knowledge to recognise computer systems. This is essential in providing the learner with the knowledge, confidence and ability to effectively communicate and solve simple technical problems related to devices.

The curriculum covers essential aspects, including the difference between hardware and software and how both serve as a foundation for technologies that are essential for computer system functionality, and the advantages and disadvantages of different computer systems and how they work at a basic level through active learning.

Learners will improve their ability to identify digital basics within their digital environments, apply the correct terminology at a primary level, communicate simple issues, identify the computer systems they may need in order to work effectively, be aware of the potential to reduce downtime while working towards proposing more complex and effective solutions with greater autonomy.

On successful completion of the micro credential participants will earn "Essentials of Computer Systems" demonstrating their competency in identifying and classifying computer systems and the wider implications for use.

Questions

Hardware

1. What is a computer system?
2. Describe the advantages and disadvantages of the various electronic devices (laptop, tablet, PC, phone)
3. List the key hardware components that make up a typical computer.
4. What is RAM (Random Access Memory), and why is it essential in a computer?
5. Define and explain the function of the CPU (Central Processing Unit)

Software

6. Provide a basic definition of an operating system and its purpose.
7. Differentiate between system software and application software.
8. Why is it important to perform regular software updates on a computer?
9. Discuss the importance of device drivers in a computer system.

Electronic Devices

10. Discuss the benefits of using a device that works only with applications.
11. What are the advantages of using a laptop over a tablet?
12. What are the advantages of using a phone over a laptop?
13. What tasks are typically involved in system maintenance?

Basic Device Performance (MC 5.1.A.2)

Basic Information

Identification of the learner	Any Citizen
Title and code of the micro-credential	Basic Device Performance **Code: MC 5.1.A.2**
Country(ies)/Region(s) of the issuer	IRELAND, ITALY, CYPRUS, GREECE, ROMANIA http://dsw.projectsgallery.eu
Awarding body(ies)	DSW Consortium Project Number: **101087628**
Date of issuing	Nov 2023
Notional workload needed to achieve the learning outcomes	1-3 Hours
Level of the learning experience leading to the micro-credential	FOUNDATION
Type of assessment	Automatically marked Questions Number of Questions: 16 – 20 Passing Score: 75%
Form of participation in the learning activity	Online Asynchronous
Type of quality assurance used to underpin the micro-credential	Peer Review

Learning Outcomes

Learning Outcomes (ref. LOs 5.1.3, 5.1.4 and 5.1.5)

Device Behaviour

- Recognise undesired behaviour or a lack of expected functionality or responsiveness in device hardware and software

Functional Performance

- Identify possible technical problems that effect or inhibit performance and be aware that steps exist to fix such problems

Technical Impact

- Explain in simple terms what, where and how the technical issue is impacting the device

Description

"Device Performance" Micro credential is designed to empower participants with the knowledge and practical skills to recognise undesired behaviour in both hardware and software, identify technical problems affecting performance, and understand steps to resolve these issues.

Upon achievement of this Micro credential learners will be able to employ a combination of theory, hands-on exercises, case studies, and practical demonstrations. Participants will engage in real-world scenarios to develop their skills and gain confidence in addressing technical issues.

This Micro credential allows the learner to gain knowledge in evaluating the expected functionality of devices and learning to recognise signs of undesired behaviour in the device hardware and software. The learner will be able to confidently gather information on the problem and can effectively communicate how it is impacting the device in basic terms through understanding the importance of clear communication when seeking assistance on technical issues.

Additionally, learners will understand the importance of proactive monitoring for early issue detection and explore tools and techniques for identifying irregularities in device performance. Valuable insights into common technical issues will be gained as well as the ability to diagnose problems related to performance, responsiveness, and expected functionality. An understanding of the impact of technical issues on user experience and overall device performance will be explored.

Throughout the learning participants will develop a basic understanding of the approaches to troubleshoot and resolve simple technical problems with autonomy. They will be encouraged to explore problem-solving techniques for both hardware and software issues and the resources and tools available for technical issue resolution.

On successful completion of the micro credential participants will earn "Device Performance" demonstrating their competency in identifying what constitutes undesired behaviour in both hardware and software. Identify common technical problems affecting device performance. Understand systematic approaches to troubleshoot and resolve simple technical issues and articulate technical problems in simple terms for effective communication.

Questions

Undesired behaviour

1. Describe three signs of undesired behaviour in device hardware?
2. Describe three signs of undesired behaviour in experienced as a result of device software?
3. How might undesired device behaviour impact the overall user experience?
4. List the types of undesired behaviour a PC might display.

Identifying Technical Problems

5. What are common technical problems that can affect the performance of software on a computer?
6. Consider a situation where a smartphone is experiencing slow performance. List three possible technical problems that could be causing this issue and suggest appropriate steps for diagnosis.
7. Why is it important not to not delay in addressing technical issues?

Steps for Resolution

8. There is no sound coming from your laptop. Suggest the approaches to take to resolve this technical issue.
9. Applications on your tablet or smartphone keep crashing. Suggest the systematic approaches to take to resolve this technical issue.
10. Choose a common technical problem that affects smartphones (e.g., battery drain, overheating) and describe, step by step, how you would communicate this issue and its impact to a friend or family member with limited technical knowledge.
11. You notice that your laptop is taking an unusually long time to start up. What steps would you take to identify and resolve this performance issue?

Device Settings and Troubleshooting Essentials (MC 5.1.A.3)

Basic Information

Identification of the learner	Any Citizen
Title of the micro-credential	Device Settings and Troubleshooting Essentials **Code: MC 5.1.A.3**
Country(ies)/Region(s) of the issuer	IRELAND, ITALY, CYPRUS, GREECE, ROMANIA http://dsw.projectsgallery.eu
Awarding body(ies)	DSW Consortium Project Number: **101087628**
Date of issuing	Nov 2023
Notional workload needed to achieve the learning outcomes	1-3 Hours
Level of the learning experience leading to the micro-credential	FOUNDATION
Type of assessment	Automatically marked Questions Number of Questions: 16 – 20 Passing Score: 75%
Form of participation in the learning activity	Online Asynchronous
Type of quality assurance used to underpin the micro-credential	Peer Review

Learning Outcomes

Learning Outcomes (ref. LOs 5.1.7 and 5.1.8)

Device Settings

- Identify where the device settings are located on the device and be aware that there may be potential consequences of changing settings

Troubleshooting

- Apply simple troubleshooting solutions to solve problems like, connecting to the internet, adjusting brightness and volume of the device

Description

"Device Settings and Troubleshooting Essentials" is a Micro credential designed to reward participants with the skills to identify device settings, recognise potential consequences of modifying them, and apply straightforward troubleshooting solutions for common issues. This Micro credential empowers users to confidently manage their devices while fostering a deeper understanding of the impact of settings adjustments.

The Micro credential will show the learner how to navigate through various devices (smartphones, laptops, tablets) to locate and understand device settings, acquire knowledge about the different categories of settings and their respective functionalities and understand the implications of modifying device settings and thus developing a cautious approach towards changing settings to avoid unintended outcomes.

The curriculum will lay out simple troubleshooting techniques to solve common issues such as connecting to the internet and will outline effective strategies for adjusting device brightness and volume as well as other settings and work towards the knowledge, skills and attitudes of understanding the step-by-step process for resolving other everyday problems encountered with digital devices.

On successful completion of the micro credential participants will earn "Device Settings and Troubleshooting Essentials" and are able to identify and navigate through device settings on various platforms. Recognise potential consequences of changing critical device settings. Apply simple troubleshooting solutions for common issues like internet connectivity, brightness adjustment, and volume control and others and develop their confidence in managing device settings effectively.

Questions

Device Settings

1. Where would you typically find the device settings on a smartphone or tablet? Provide a brief description of the navigation process.
2. Why is it important to be aware of potential consequences before making changes to the device settings? Give an example of a setting change that could have unintended effects.
3. Describe a straightforward method for adjusting the brightness of a computer monitor or smartphone screen. Can you name one way this may affect your device?
4. How would you troubleshoot an issue where the device's volume is unexpectedly low, and what steps would you take to resolve it?

Trouble Shooting

5. If a device is experiencing lag or slowness, provide a basic troubleshooting step that could potentially improve its performance.
6. Why might restoring default settings be a useful troubleshooting step, and what considerations should be taken before doing so?
7. How can users ensure that they are adjusting device settings safely, minimising the risk of unintended consequences?
8. If a device is having trouble connecting to the internet, name two simple troubleshooting steps you would take to address the issue.

Vigilance and Problem-Solving Essentials (MC 5.1.A.4)

Basic Information

Identification of the learner	Any Citizen
Title and code of the micro-credential	Vigilance and Problem-Solving Essentials **Code: MC 5.1.A.4**
Country(ies)/Region(s) of the issuer	IRELAND, ITALY, CYPRUS, GREECE, ROMANIA http://dsw.projectsgallery.eu
Awarding body(ies)	DSW Consortium Project Number: **101087628**
Date of issuing	Nov 2023
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Type of assessment	Automatically marked Questions Number of Questions: 16 – 20 Passing Score: 75%
Form of participation in the learning activity	Online Asynchronous
Type of quality assurance used to underpin the micro-credential	Peer Review

Learning Outcomes

Learning Outcomes (ref. LOs 5.1.6, 5.1.10 and 5.1.9)

Vigilance

- Foster an attitude of problem solving and awareness of optimal and sub optimal performance of hardware and software
- Understand that suspicious email links, websites, apps, browsers, programs and lack of proper malware and security updates might slow device performance

Problem Solving Documenting

- Consider documenting simple troubleshooting steps taken to ensures others will know what to do if the problem happens again

Description

"Vigilance and Problem Solving Essentials" is a Micro credential designed to encourage participants to foster an attitude of problem-solving and cultivate awareness of documenting troubleshooting steps for knowledge sharing and cultivating an understanding of cybersecurity threats arising from suspicious links, websites, apps, browsers, and the importance of regular malware and security updates and how this can impact the devices technical issues. The content empowers participants with the knowledge and skills to enhance the performance of their devices, document troubleshooting steps, and recognise potential security threats. This Micro credential emphasises proactive measures for sustained digital health.

This Micro credential cultivates a problem-solving attitude through developing a proactive and resilient mindset towards addressing digital challenges. Participants will learn about problem-solving techniques applicable to computer systems and embrace continuous improvement for optimal digital performance while exploring critical thinking techniques applicable to diverse computer system challenges. The Micro credential also promotes a collaborative problem-solving environment through knowledge sharing in outlining the significance of documenting troubleshooting steps for future reference.

Content will cover elements of cybersecurity due to its influence on computer systems performance. Participants will understand at a basic level to acknowledge the potential impact of suspicious email links, websites, apps, and browsers on computer system security, understand the role of cybersecurity programs and updates in maintaining a secure computing environment and will be encouraged to explore the consequences of neglecting proper malware and security updates on device performance.

On successful completion of the micro credential participants will earn "Vigilance and Problem-Solving Essentials" and are able to foster a problem-solving and collaborative approach to addressing computer system challenges. They can document simple troubleshooting steps effectively for future reference and knowledge dissemination, develop a heightened awareness of cybersecurity threats and best practices for prevention and apply simple troubleshooting techniques to optimise computer system performance.

Questions

Problem Solving

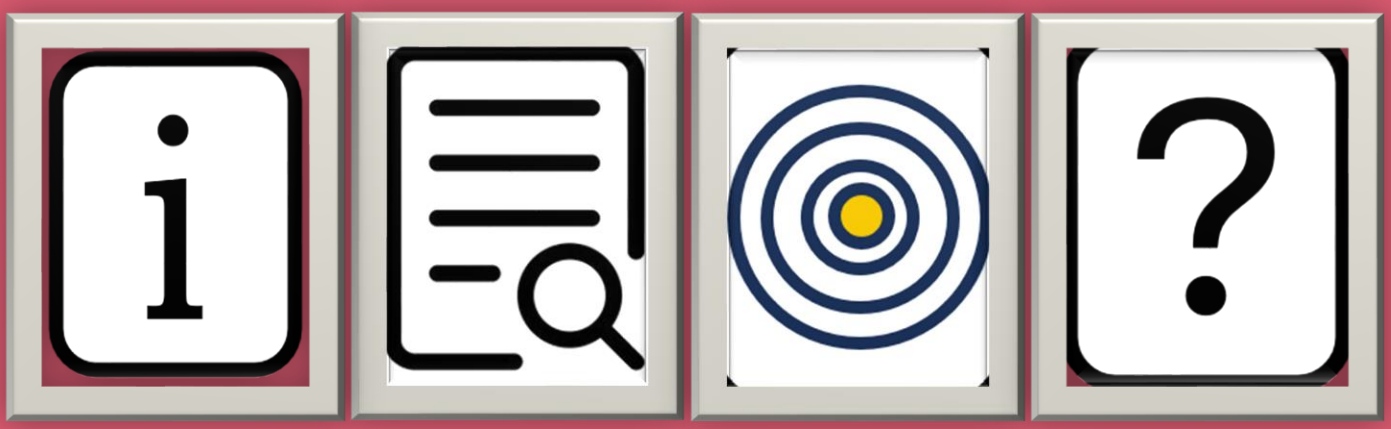
1. What does it mean to have a problem-solving attitude when it comes to computer systems, and why is it important in a digital environment?
2. Why is it important to share documented troubleshooting steps with others in your team or community, and how does it contribute to collective knowledge?
3. Provide a simple example of a computer system issue you have encountered. Describe the steps you took to troubleshoot and resolve the problem
4. How can documenting troubleshooting steps contribute to effective collaboration within a team when dealing with recurring computer system issues?

Vigilance

5. Briefly explain why being aware of suspicious email links, websites, apps, browsers, and the importance of malware and security updates is crucial for maintaining the performance and security of a computer system.
6. In basic terms, what are the potential consequences of not regularly updating malware and security software on a computer system?
7. If you receive an email with a link that seems suspicious, what immediate steps would you take to ensure the security of your computer system?
8. Name two basic practices you can follow to enhance the cybersecurity of your computer system on a daily basis.

INTERMEDIATE LEVEL

(Level 3 and Level 4)



Essential Troubleshooting for Digital Devices (MC 5.1.B.1)

Basic Information

Identification of the learner	Any Citizen
Title and code of the micro-credential	Essential Troubleshooting for Digital Devices **Code: 5.1.B.1**
Country(ies)/Region(s) of the issuer	IRELAND, ITALY, CYPRUS, GREECE, ROMANIA http://dsw.projectsgallery.eu
Awarding body(ies)	DSW Consortium Project Number: **101087628**
Date of issuing	Nov 2023
Notional workload needed to achieve the learning outcomes	2-4 Hours
Level of the learning experience leading to the micro-credential	INTERMEDIATE
Type of assessment	Automatically marked Questions Number of Questions: 16 – 20 Passing Score: 75%
Form of participation in the learning activity	Online Asynchronous
Type of quality assurance used to underpin the micro-credential	Peer Review

Learning Outcomes

Learning Outcomes (ref. LOs 5.1.11, 5.1.12 and 5.1.15)

Troubleshooting techniques

- Understand at a basic level what to check when experiencing a lack of expected functionality or responsiveness in electronics, computers and software systems
- Awareness of the places where problems occur relating to your device
- List simple checks to conduct to avoid performance, technical and functional problems

Description

"Essential Troubleshooting for Digital Devices" is a Micro credential designed to empower individuals with the foundational skills to address common issues encountered in electronics, computers, and software systems providing learners with the practical insights and simple checks to ensure your devices operate smoothly, helping to prevent technical problems and functional setbacks.

The Micro credential allows the learner to acquire the skills to prevent performance, technical, and functional problems before they arise and when they arise by performing a series of simple yet effective checks to conduct regularly. Pre-empting issues is an important skill and consideration by recognising potential pitfalls and bottlenecks that may affect the performance of your electronics, computers, and software.

Content will cover how to develop checklists and steps to take when encountering issues, provide practical scenarios that mirror common issues faced by users, providing hands-on experience in troubleshooting where learners can gain insights into optimising the performance of their devices through straightforward adjustments and preventive measures.

Additionally, they will be able to develop a theory about the possible cause, propose the source of the probable cause of the sub-optimal performance, be open to testing different solutions. Participants will familiarise themselves with the places to investigate for potential problems eg. operating systems, applications, central processing units (CPUs), firewalls, settings, hard drives, solid-state drives, servers, external connections and programs and understand some simple checks that can be initially performed to apply fixes before investigating the next step.

On successful completion of the micro credential participants will earn "Essential Troubleshooting for Digital Devices" and are able enhance their ability to troubleshoot common issues on their own and solving straight forward problems select well-defined and routine solutions to them.

Questions

Theory Development

1. How do you go about developing a theory regarding the possible cause of sub-optimal performance in a digital system?
2. Can you provide an example of a situation where you successfully developed a theory to explain sub-optimal performance?
3. When proposing the probable cause of sub-optimal performance, what factors do you consider in your analysis?

Checks to investigate

4. List the key areas within digital systems (e.g., operating systems, applications etc.) where potential problems may originate.
5. Can you explain why familiarity with these areas is crucial for effective troubleshooting and performance optimisation?
6. What are some simple checks you would conduct to investigate potential problems with hardware components like CPUs, hard drives, and solid-state drives?
7. How does understanding hardware contribute to the overall troubleshooting process?

Proactive Troubleshooting for Optimal Performance (MC 5.1.B.2)

Basic Information

Identification of the learner	Any Citizen
Title and code of the micro-credential	Proactive Troubleshooting for Optimal Performance **Code: MC 5.1.B.2**
Country(ies)/Region(s) of the issuer	IRELAND, ITALY, CYPRUS, GREECE, ROMANIA http://dsw.projectsgallery.eu
Awarding body(ies)	DSW Consortium Project Number: **101087628**
Date of issuing	Nov 2023
Notional workload needed to achieve the learning outcomes	2-4 Hours
Level of the learning experience leading to the micro-credential	INTERMEDIATE
Type of assessment	Automatically marked Questions Number of Questions: 16 – 20 Passing Score: 75%
Form of participation in the learning activity	Online Asynchronous
Type of quality assurance used to underpin the micro-credential	Peer Review

Learning Outcomes

Learning Outcomes (ref. LOs 5.1.13, 5.1.14 and 5.1.16)

Digital Consequences

- Understand how the technical issue is impacting the device and the consequences of not addressing the problem
- Proactiveness in solving and addressing sub optimal performance of hardware and software
- Understand the standard device settings and make simple adjustments to these

Description

"Proactive Troubleshooting for Optimal Performance" is a micro credential designed to allow individuals learn foundational skills to understand technical issues affecting devices, consider the implications through developing an attitude of vigilance in digital environments.

The Micro credential allows the learner to foster an attitude of attentiveness and responsiveness. This heightened awareness can contribute to less downtime, less costs, less damage and more efficiency all round. Individuals are encouraged to be proactive when first noticing technical issues and encouraged to apply the simple fixes they have learned up to this point or investigate further.

Content will cover an introduction to the potential consequences of ignoring technical issues, both in terms of the device and the effected environment eg. workplace. Cultivating a proactive mindset towards troubleshooting will be a theme embedded within the content and being vigilant in the actions taken to adjust settings for optimal performance will be highlighted.

On successful completion of the micro credential participants will earn "Proactive Troubleshooting for Optimal Performance" and become adept at foreseeing and resolving challenges in the dynamic world of digital devices. Do not wait for issues to arise—be ahead of the curve.

Questions

Proactive problem solving

1. Why is it important to be aware of the consequences of not addressing a technical problem promptly?
2. Share a scenario where if someone neglecting a technical issue what the significant consequences could be.
3. Discuss the difference between a proactive and a reactive approach to addressing technical issues.
4. How would you communicate the consequences of not addressing a technical issue to a user or a client?
5. Where would you seek information on solving technical issues?

Standard Device Settings Understanding:

6. How do you familiarise yourself with the standard settings of a device?
7. Share your experience in making simple adjustments to standard device settings.
8. Can you highlight the importance of understanding these settings in the context of optimising device performance?

9. Can you choose a simple scenario where you can advise someone on the steps to take in order to seek a resolution and outline those steps?

Technical Exploration and Troubleshooting Documentation (MC 5.1.B.3)

Basic Information

Identification of the learner	Any Citizen
Title and code of the micro-credential	Technical Exploration and Troubleshooting Documentation **Code: MC 5.1.B.3**
Country(ies)/Region(s) of the issuer	IRELAND, ITALY, CYPRUS, GREECE, ROMANIA http://dsw.projectsgallery.eu
Awarding body(ies)	DSW Consortium Project Number: **101087628**
Date of issuing	Nov 2023
Notional workload needed to achieve the learning outcomes	2-4 Hours
Level of the learning experience leading to the micro-credential	INTERMEDIATE
Type of assessment	Automatically marked Questions Number of Questions: 16 – 20 Passing Score: 75%
Form of participation in the learning activity	Online Asynchronous
Type of quality assurance used to underpin the micro-credential	Peer Review

Learning Outcomes

Learning Outcomes (ref. LOs 5.1.17 and 5.1.19)

Digital Landscape and Documenting

- Find technical information on your device
- Document simple troubleshooting steps

Description

"Technical Exploration and Troubleshooting Documentation" is a micro credential designed to allow individuals learn foundational skills find technical information about their devices and systematically document simple troubleshooting steps.

The Micro credential encourages the learner to retrieve technical information through learning effective strategies for finding information specific to the device, navigate device manuals, online resources, and system settings to access relevant technical details and appreciate the importance of understanding device specifications for optimal use.

Content will give the participant and understanding of the device architecture, the internal components and architecture of common devices, enabling a deeper understanding of how they function. Content will explore system settings and specifications to comprehend the capabilities and limitations of your device.

Additionally, the curriculum will cover the skill of documenting troubleshooting processes clearly and concisely and give an understanding the importance of maintaining a troubleshooting log for future reference and continuous improvement.

On successful completion of the micro credential participants will earn "Technical Exploration and Troubleshooting Documentation" and become skilful and confidence in navigating the technical landscape of their devices, document effective troubleshooting steps, and efficiently communicate technical issues to support channels

Questions

Finding Technical Information on Your Device

1. Where can you locate the model number and serial number of your device?
2. How would you identify the manufacturer of your device and access their official support website?
3. What online resources or forums can be helpful in finding technical specifications and user manuals for your device?
4. Can you name at least two built-in features or tools on your device that provide detailed technical information?

Documenting Simple Troubleshooting Steps

5. What is the first step you would take when encountering a device issue?
6. What role does user feedback play in refining and improving documented troubleshooting procedures?
7. Describe a situation where effective communication of troubleshooting steps would be crucial.

Essentials of Interconnected Systems (MC 5.1.B.4)

Basic Information

Identification of the learner	Any Citizen
Title and code of the micro-credential	Essentials of Interconnected Systems **Code: MC 5.1.B.4**
Country(ies)/Region(s) of the issuer	IRELAND, ITALY, CYPRUS, GREECE, ROMANIA http://dsw.projectsgallery.eu
Awarding body(ies)	DSW Consortium Project Number: **101087628**
Date of issuing	Nov 2023
Notional workload needed to achieve the learning outcomes	2-4 Hours
Level of the learning experience leading to the micro-credential	INTERMEDIATE
Type of assessment	Automatically marked Questions Number of Questions: 16 – 20 Passing Score: 75%
Form of participation in the learning activity	Online Asynchronous
Type of quality assurance used to underpin the micro-credential	Peer Review

Learning Outcomes

Learning Outcomes (ref. LOs 5.1.20)

Interconnected Systems

- Understand the elements that slow down computer systems

Description

"Interconnected Systems" is a micro credential that investigates the workings of computer systems, proving that participants can utilise the knowledge gained to identify and address the diverse elements that can slow down performance.

The Micro credential allows the learner to explore the fundamental resources (CPU, RAM, storage) and understand how their efficient allocation contributes to optimal system performance. Learn techniques to monitor and manage resource usage to prevent bottlenecks.

Content will give the participant and understanding of the device architecture, the internal components and architecture of common devices, enabling a deeper understanding of how they function. Content will explore system settings and specifications to comprehend the capabilities and limitations of your device.

Additionally, the curriculum will cover identifying the performance implications of malware infections and security vulnerabilities and exploring best practices for malware prevention and effective security measures. Performance such as the impact of aging or inadequate hardware on system speed, network speed and connectivity issues and the importance of hardware upgrades and their impact on overall performance.

On successful completion of the micro credential participants will earn "Interconnected Systems" and will have fostered a proactive user mindset through education on best practices for system usage and promote responsible software installation, browsing habits, and data management.

Questions

Best practice

1. How can user habits positively or negatively impact computer speed?
2. Provide an example of a responsible user habit that can contribute to improved system performance.

Software Influence

3. How do background processes affect computer performance?
4. What steps can be taken to manage start-up programs for optimal speed?

Storage Insights

5. Why is storage optimisation important for a computer's performance?
6. Name two methods for optimising storage on a computer.

Malware Influences

7. In what ways can malware affect the speed of a computer?
8. What are two preventive measures against malware to maintain system performance?

Hardware Influences

9. How can aging hardware components contribute to a slowdown in computer performance?
10. What benefits might you expect from upgrading your computer's hardware?

Network and Internet Effects

11. Discuss how network speed can impact overall computer performance.
12. What can users do to optimise their network settings for a better online experience?

Essential Digital Wellness and Performance (MC 5.1.B.5)

Basic Information

Identification of the learner	Any Citizen
Title and code of the micro-credential	Essential Digital Wellness and Performance **Code: MC 5.1.A.5**
Country(ies)/Region(s) of the issuer	IRELAND, ITALY, CYPRUS, GREECE, ROMANIA http://dsw.projectsgallery.eu
Awarding body(ies)	DSW Consortium Project Number: **101087628**
Date of issuing	Nov 2023
Notional workload needed to achieve the learning outcomes	2-4 Hours
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Learning Outcomes

Learning Outcomes (ref. LOs 5.1.21 and 5.1.25)

Safe Online Practices

- Vigilant in downloading files and using unknown sites to avoid potential malware effecting device behaviour
- Know how to change device settings to improve performance, responsiveness and or device behaviour

Description

"Interconnected Systems" is a micro credential to aid participants navigate the digital landscape with confidence. Participants will learn the importance of vigilance in downloading files and visiting unknown sites to avoid potential malware, along with acquiring the skills to strategically tweak device settings.

Upon achievement of this Micro credential learners will be able to demonstrate safe online practices through understanding the risks associated with downloading files from untrusted sources as well as recognising the signs of potential malware, to adopt cautious practices to protect device integrity and gain insights into the various types of malware and their impact on device behaviour.

Content will cover digital vigilance in the form of highlighting the methods to verify the credibility of websites before accessing or downloading content and the strategies for responsible online behaviour to minimise exposure to security threats.

Additionally, the Micro credential investigates techniques to boost device speed and responsiveness without compromising security to best understand the balance between performance optimisation and maintaining a secure device environment. Learners will acquire skills in customising device settings to align with individual preferences and usage patterns.

On successful completion of the micro credential participants will earn "Essential Digital Wellness and Performance" and will develop the knowledge and skills necessary to navigate the digital world safely, protect their devices from potential threats, and optimise settings for an enhanced and responsive user experience.

Questions

Vigilant in Downloading Files and Safe Browsing

1. Why is it important to exercise caution when downloading files from unknown or untrusted sources?
2. Can you name two signs or indicators that a website might be untrustworthy or potentially harmful?
3. What are some best practices for verifying the credibility of a website before downloading any content?
4. How can users recognise potential malware threats in emails or download links, and what steps should they take to avoid them?
5. Explain the importance of keeping software and security applications up to date in the context of avoiding malware.

Changing Device Settings for Performance Optimisation

6. Name at least three device settings that can be adjusted to improve overall performance and responsiveness.
7. How does adjusting power settings impact a device's performance and battery life?
8. Explain the relationship between background processes and device responsiveness. How can users manage them?
9. What are the potential consequences of overly aggressive performance optimisation settings, and how can users strike a balance between speed and stability?

Digital Hygiene and Optimisation Essentials (MC 5.1.B.6)

Basic Information

Identification of the learner	Any Citizen
Title and code of the micro-credential	Digital Hygiene and Optimisation Essentials **Code: MC 5.1.B.6**
Country(ies)/Region(s) of the issuer	IRELAND, ITALY, CYPRUS, GREECE, ROMANIA http://dsw.projectsgallery.eu
Awarding body(ies)	DSW Consortium Project Number: **101087628**
Date of issuing	Nov 2023
Notional workload needed to achieve the learning outcomes	2-4 Hours
Level of the learning experience leading to the micro-credential	INTERMEDIATE
Type of assessment	Automatically marked Questions Number of Questions: 16 – 20 Passing Score: 75%
Form of participation in the learning activity	Online Asynchronous
Type of quality assurance used to underpin the micro-credential	Peer Review

Learning Outcomes

Learning Outcomes (ref. LOs 5.1.22 and 5.1.26)

Digital Care

- Indicate the importance of regular checks, maintenance and updates
- Understand the importance of deleting unused programs, internet cache, downloads, files and apps

Description

“Digital Hygiene and Optimisation Essentials" is a micro credential highlighting the importance of regular checks, maintenance routines, and updates to keep your digital life running smoothly. Participants will also gain a deep understanding of the significance of decluttering through the deletion of unused programs, internet cache, downloads, files, and apps for optimal device performance.

Upon achievement of this Micro credential learners will be able to conduct maintenance checks in identifying potential issues before they escalate and to develop an attitude and skills to routinely for proactively maintain device to ensure the continuous health and performance of your devices.

Content will cover the importance of updates as the significance of software and system updates in maintaining security and improving functionality is explored while managing and scheduling updates effectively to avoid disruptions while keeping the system up to date.

Additionally, the Micro credential investigates the importance of deleting unused programs and applications to free up storage space and streamline system resources and how to identify and uninstall unnecessary software efficiently and how clearing the internet cache, downloads and files contribute to a more organised and responsive system that is also easier to navigate. Understanding the role of regular backups in safeguarding important data during maintenance and updates will be outlined and learning how to implement reliable backup strategies for various types of devices.

On successful completion of the micro credential participants will earn "Essential Digital Wellness and Performance" and will possess the knowledge and skills necessary to implement effective digital hygiene practices, ensuring their devices operate at peak efficiency and remain secure.

Questions

Importance of Regular Checks, Maintenance, and Updates

1. Why is it crucial to perform regular checks on your devices?
2. What are the potential risks of neglecting routine maintenance tasks on a computer or mobile device?
3. Explain the importance of staying up to date with software and system updates.
4. How can scheduled updates contribute to the overall security and performance of a device?
5. Provide an example of a situation where a lack of regular checks and updates could lead to a security vulnerability.

Understanding the Importance of Deleting Unused Programs, Internet Cache, Downloads, Files, and Apps

6. Why is it essential to delete unused programs and applications from a device?
7. How can deleting unnecessary programs contribute to improved system performance?

8. Explain the benefits of clearing internet cache and the impact it has on browser performance.
9. What risks or issues might arise from accumulating large amounts of downloaded files over time?
10. Why is it important to regularly declutter and organise files on a device?
11. Describe the impact of having a large number of unused apps on a mobile device or computer.
12. What strategies can be employed to efficiently manage and delete unused files and applications?

Device Troubleshooting and Performance Optimisation (MC 5.1.B.7)

Basic Information

Identification of the learner	Any Citizen
Title and code of the micro-credential	Device Troubleshooting and Performance Optimisation **Code: MC 5.1.B.7**
Country(ies)/Region(s) of the issuer	IRELAND, ITALY, CYPRUS, GREECE, ROMANIA http://dsw.projectsgallery.eu
Awarding body(ies)	DSW Consortium Project Number: **101087628**
Date of issuing	Nov 2023
Notional workload needed to achieve the learning outcomes	2-4 Hours
Level of the learning experience leading to the micro-credential	INTERMEDIATE
Type of assessment	Automatically marked Questions Number of Questions: 16 – 20 Passing Score: 75%
Form of participation in the learning activity	Online Asynchronous
Type of quality assurance used to underpin the micro-credential	Peer Review

Learning Outcomes

Learning Outcomes (ref. LOs 5.1.23, 5.1.24 and 5.1.28)

Troubleshooting

- Know that troubleshooting options are available and program performance statistics are available on a device
- Use troubleshooting features to protect and preserve the optimal performance for the device
- Detect the places where troubleshooting can be applied and where problems occur

Description

“Device Troubleshooting and Performance Optimisation" is a micro credential providing individuals with the skills and knowledge needed to efficiently identify, analyse, and resolve issues affecting device performance. In an era where technology plays a pivotal role in our daily lives, the ability to troubleshoot effectively is a valuable skill set.

Upon achievement of this Micro credential participants will be able to recognise the signs of potential IT problems, understand the array of troubleshooting options available, and leverage program performance statistics to maintain optimal device functionality.

Content will cover understanding and using troubleshooting options for example gaining insights into the various troubleshooting options available on modern devices, exploring system diagnostics, error logs, and other tools that provide valuable information about device health. Participants will learn how to use built-in troubleshooting features to protect and preserve the optimal performance of your device and understand the significance of regular maintenance and how it contributes to prolonged device lifespan.

Additionally, the Micro credential investigates detecting troubleshooting opportunities through developing the ability to identify areas where troubleshooting can be applied proactively and exploring common issues and challenges that may arise in different types of devices and operating systems. Learners will acquire the skills to interpret program performance statistics effectively and as a result will learn how to leverage performance metrics to pinpoint bottlenecks and areas for improvement.

On successful completion of the micro credential participants will earn "Device Troubleshooting and Performance Optimisation" and will have the knowledge and confidence to troubleshoot a variety of issues affecting device performance, providing valuable insights and practical skills to ensure the devices operate at their best.

Questions

Troubleshooting Options Awareness and Feature Utilisation

1. Explain the importance of knowing where to find system diagnostics and error logs for troubleshooting purposes.
2. How would you use built-in troubleshooting features to address a sudden drop in your device's performance?
3. Describe a scenario where proactive troubleshooting can be applied to protect and preserve optimal device performance.

4. What are some signs or symptoms that might indicate a need for troubleshooting on a device?

Understanding Program Performance Statistics

5. How do find performance statistics on your device?
6. How do you interpret program performance statistics to identify performance bottlenecks?
7. Give an example of a specific performance metric you might monitor and the actions you would take based on the data.
8. Why is it important to proactively use troubleshooting features for maintaining optimal device performance?

Proactive Troubleshooting and Documentation (MC 5.1.B.8)

Basic Information

Identification of the learner	Any Citizen
Title and code of the micro-credential	Proactive Troubleshooting and Documentation **Code: MC 5.1.B.8**
Country(ies)/Region(s) of the issuer	IRELAND, ITALY, CYPRUS, GREECE, ROMANIA http://dsw.projectsgallery.eu
Awarding body(ies)	DSW Consortium Project Number: **101087628**
Date of issuing	Nov 2023
Notional workload needed to achieve the learning outcomes	2-4 Hours
Level of the learning experience leading to the micro-credential	INTERMEDIATE
Type of assessment	Automatically marked Questions Number of Questions: 16 – 20 Passing Score: 75%
Form of participation in the learning activity	Online Asynchronous
Type of quality assurance used to underpin the micro-credential	Peer Review

Learning Outcomes

Learning Outcomes (ref. LOs 5.1.27 and 5.1.29)

Digital proactivity

- Document troubleshooting steps
- Take and active approach in avoiding performance, responsiveness and technical problems

Description

“Proactive Troubleshooting and Documentation" is a micro credential providing participants with the skills and mindset needed to take an active approach in preventing and mitigating technical issues. In today's fast-paced digital landscape, the ability to anticipate and address problems before they escalate is a valuable asset.

Upon achievement of this Micro credential learners will be able to use effective methods for documenting troubleshooting steps through creating clear and concise troubleshooting documentation that serves as a valuable resource for yourself and others.

Content will cover the importance of taking a proactive stance in preventing performance, responsiveness, and technical problems and acquiring strategies for identifying potential issues before they impact overall system functionality and developing a toolkit of troubleshooting techniques tailored to different types of devices and systems.

Additionally, the Micro credential will bring about awareness about collaborative troubleshooting approaches within teams and across disciplines and effective communication strategies about technical issues and for sharing troubleshooting insights with colleagues. It will highlight the strategies for continuous improvement in troubleshooting processes and the role of feedback and iteration in refining troubleshooting documentation and techniques.

On successful completion of the micro credential participants will earn "Proactive Troubleshooting and Documentation" and participants will have the knowledge and practical skills to document troubleshooting steps effectively and take a proactive approach to prevent and address performance, responsiveness, and technical problems.

Questions

Clarity and Precision in Documentation

1. What practices do you follow to ensure your troubleshooting documentation is clear and precise?
2. How do you organise troubleshooting steps to make them easily understandable for someone who may not be familiar with the issue?
3. How do you approach documenting troubleshooting steps for a technical issue?
4. Can you provide an example of a situation where detailed documentation of troubleshooting steps was crucial in resolving a problem?

Communication of Preventive Measures

5. How do you effectively communicate preventive measures to stakeholders or team members?

6. Provide an example where clear communication about proactive measures contributed to the avoidance of technical problems.
7. Describe your strategy for taking an active approach to avoid performance, responsiveness, and technical problems.
8. Provide an example of a situation where you identified and mitigated a potential problem before it impacted system performance.

ADVANCED LEVEL

(Level 5 and Level 6)

Advanced Troubleshooting and System Configuration (MC 5.1.C.1)

Basic Information

Identification of the learner	Any Citizen
Title and code of the micro-credential	Advanced Troubleshooting and System Configuration **Code: MC 5.1.C.1**
Country(ies)/Region(s) of the issuer	IRELAND, ITALY, CYPRUS, GREECE, ROMANIA http://dsw.projectsgallery.eu
Awarding body(ies)	DSW Consortium Project Number: **101087628**
Date of issuing	Nov 2023
Notional workload needed to achieve the learning outcomes	3-5 Hours
Level of the learning experience leading to the micro-credential	ADVANCED
Type of assessment	Automatically marked Questions Number of Questions: 16 – 20 Passing Score: 75%
Form of participation in the learning activity	Online Asynchronous
Type of quality assurance used to underpin the micro-credential	Peer Review

Learning Outcomes

Learning Outcomes (ref. LOs 5.1.31, 5.1.32 and 5.1.38)

System Configuration

- Isolate causes of technical problems in hardware, software, settings, browsers and storage
- Confidently apply technical solutions that affect or inhibit performance
- Configure the appearance or actions in an application, operating system or hardware

Description

"Advanced Troubleshooting and System Configuration" is a micro credential to aid participants resolve technical problems across hardware, software, settings, browsers, and storage.

Upon achievement of this Micro credential learners will be able to isolate the causes of technical problems by developing a systematic approach to isolate and identify the root causes of technical issues in hardware, software, settings, browsers, and storage. Participants will be able to analyse error messages, logs, and diagnostic tools to streamline the troubleshooting process.

Content will cover how techniques for customising the user interface and experience in both software applications and operating systems can be achieved. Content will look at the ways to personalise settings to meet individual and organisational needs and to configure settings to tailor systems according to specific user preferences and organisational requirements.

Additionally, the Micro credential investigates techniques to master the art of isolating and resolving technical problems related to web browsers, managing and troubleshooting storage-related issues and exploring browser settings and extensions to optimise performance, security, and user experience.

On successful completion of the micro credential participants will earn "Advanced Troubleshooting and System Configuration" and will possess the knowledge and practical skills to isolate technical problems effectively, confidently apply solutions, and configure systems for optimal performance.

Questions

Isolation of Technical Problems

1. Can you describe your process for isolating the causes of technical problems in hardware, software, settings, browsers, or storage?
2. Provide an example of a situation where you successfully identified and isolated the root cause of a complex technical issue.
3. List three common and three uncommon technical problems that affect or inhibit performance?
4. What is the difference between settings and advanced settings?

Customisation and Personalisation

5. Why is personalising and customising settings important for an organisation?
6. Why does the appearance of interfaces matter?
7. What are the considerations to take into account when personalising settings and/or interfaces?

8. How do you customise user interfaces and settings to meet specific user or organisational requirements?

Software and Hardware Optimisation Strategies (MC 5.1.C.2)

Basic Information

Identification of the learner	Any Citizen
Title and code of the micro-credential	Software and Hardware Optimisation Strategies **Code: MC 5.1.C.2**
Country(ies)/Region(s) of the issuer	IRELAND, ITALY, CYPRUS, GREECE, ROMANIA http://dsw.projectsgallery.eu
Awarding body(ies)	DSW Consortium Project Number: **101087628**
Date of issuing	Nov 2023
Notional workload needed to achieve the learning outcomes	3-5 Hours
Level of the learning experience leading to the micro-credential	ADVANCED
Type of assessment	Automatically marked Questions Number of Questions: 16 – 20 Passing Score: 75%
Form of participation in the learning activity	Online Asynchronous
Type of quality assurance used to underpin the micro-credential	Peer Review

Learning Outcomes

Learning Outcomes (ref. LOs 5.1.33, 5.1.36 and 5.1.39)

System Strategies

- Understand the risks of outdated or unsupported software on your devices and the importance of updating or replacing such software to avoid technical problems
- Evaluate and compare different hardware and software solutions to select the most effective ones for your specific device and needs
- Understand the importance of avoiding free software tools that claim to solve performance issues and zip files to improve storage

Description

"Software and Hardware Optimisation Strategies" is a micro credential to aid participants gain invaluable insights into software and hardware management. Understanding the risks associated with outdated software, selecting optimal hardware and software solutions, and making informed decisions about free tools are critical skills for individuals seeking to maximise the performance and security of their devices.

Upon achievement of this Micro credential participants will be able to identify the risks posed by outdated or unsupported software on your devices and the importance of regular updates bearing in mind the potential consequences of neglecting software maintenance. Learning how to assess the status of software on your devices and identify when updates or replacements are necessary is a key element of this Micro credential while acquiring the practical skills and knowledge for updating software to ensure enhanced security, performance, and compatibility.

Content will cover decision making in evaluating and comparing different hardware and software solutions and the methodologies for selecting the most effective solutions tailored to your specific device and operational needs while considering factors such as compatibility, scalability, and long-term viability in decision-making.

Additionally, the Micro credential investigates the risks associated with relying on free software tools that claim to solve performance issues and to identify potential security and reliability concerns associated with the use of free tools. Best practices examples for storage management, including efficient file organisation and space optimisation will be explored in order to recognise the importance of avoiding the indiscriminate use of zip files to improve storage.

On successful completion of the micro credential participants will earn "Software and Hardware Optimisation Strategies" and will possess the knowledge and practical skills to navigate the challenges of software and hardware optimisation providing essential tools for enhancing the performance, security, and longevity of your devices.

Questions

Understanding Risks of Outdated Software:

1. Why is it crucial to be aware of the risks associated with outdated or unsupported software on your devices?

2. Can you explain the potential consequences of neglecting software updates in terms of security and performance?
3. Share examples of situations where updating or replacing software was essential to avoid technical problems.
4. How do you determine when it is time to update or replace software on your device?
5. How can analysing case studies help individuals understand the consequences of neglecting software updates or making uninformed hardware/software choices?

Hardware and Software Evaluation:

6. What factors do you consider when evaluating and comparing different hardware solutions for a specific device?
7. In the context of software, how do you assess and compare different solutions to ensure they meet your specific needs?
8. Describe your decision-making process when selecting hardware solutions for a new device.
9. When evaluating software options, what criteria do you prioritise to ensure the most effective choice for your needs?
10. What are the potential pitfalls of relying on zip files as a method to improve storage on a device?
11. Share best practices for storage management, emphasising alternatives to using zip files for storage optimisation.

System Maintenance and Performance Optimisation Essentials (MC 5.1.C.3)

Basic Information

Identification of the learner	Any Citizen
Title and code of the micro-credential	System Maintenance and Performance Optimisation Essentials **Code: MC 5.1.C.3**
Country(ies)/Region(s) of the issuer	IRELAND, ITALY, CYPRUS, GREECE, ROMANIA http://dsw.projectsgallery.eu
Awarding body(ies)	DSW Consortium Project Number: **101087628**
Date of issuing	Nov 2023
Notional workload needed to achieve the learning outcomes	3-5 Hours
Level of the learning experience leading to the micro-credential	ADVANCED
Type of assessment	Automatically marked Questions Number of Questions: 16 – 20 Passing Score: 75%
Form of participation in the learning activity	Online Asynchronous
Type of quality assurance used to underpin the micro-credential	Peer Review

Learning Outcomes

Learning Outcomes (ref. LOs 5.1.34 and 5.1.35)

Optimisation in Practice

- Adopt an attitude of good practice to clean device, run diagnostics, back up data on external or cloud drives
- Understand the importance of periodically updating hardware eg. RAM, graphics cards and SSD for better speed and performance

Description

"System Maintenance and Performance Optimisation Essentials" is a micro credential to aid participants develop good Practice in devices. Participants will develop a comprehensive understanding of the best practices for maintaining a clean and healthy device environment. This includes regular cleaning routines, effective dust management, and proper handling techniques to ensure the longevity of electronic components.

Upon achievement of this Micro credential learners will be able to understand the importance of data backup as crucial step in this digital age. Participants will learn how to implement robust backup strategies using external drives and cloud services. Emphasis will be placed on creating automated backup routines and safeguarding critical data against unforeseen events.

Content will cover decision making in evaluating and comparing different hardware and software solutions and the methodologies for selecting the most effective solutions tailored to your specific device and operational needs while considering factors such as compatibility, scalability, and long-term viability in decision-making.

Additionally, the Micro credential addresses security considerations related to system maintenance. Participants will learn about the role of updates in patching vulnerabilities and explore strategies to maintain a secure and resilient digital environment.

On successful completion of the micro credential participants will earn "System Maintenance and Performance Optimisation Essentials" and will possess the knowledge and skills to implement a holistic approach to system maintenance, ensuring their devices operate at peak performance while safeguarding valuable data.

Questions

Understanding RAM, Graphics Cards, and SSDs

1. Briefly explain the role of RAM in a computer system and its impact on overall performance.
2. How does upgrading a graphics card contribute to enhanced system performance, especially in tasks like gaming or graphic design?
3. What advantages does an SSD offer over traditional HDD in terms of speed and performance?
4. Why is it important to periodically update hardware components such as RAM, graphics cards, and SSDs?
5. What specific improvements in speed and performance can be expected from updating hardware?
6. Can you outline the steps involved in upgrading RAM in a typical computer system?

Updates and Back Up

7. What factors influence the decision to update hardware components more frequently or less frequently?
8. How can users stay informed about the latest hardware updates and advancements in technology?
9. In what ways do software updates contribute to the overall health and performance of a device?
10. What are the benefits of backing up data on external or cloud drives?
11. Can you describe a scenario where a robust data backup strategy would be crucial?
12. How often should data backups be performed to ensure data security and availability?

Technical Troubleshooting and Problem-Solving Mastery (MC 5.1.C.4)

Basic Information

Identification of the learner	Any Citizen
Title and code of the micro-credential	Technical Troubleshooting and Problem-Solving Mastery **Code: MC 5.1.C.4**
Country(ies)/Region(s) of the issuer	IRELAND, ITALY, CYPRUS, GREECE, ROMANIA http://dsw.projectsgallery.eu
Awarding body(ies)	DSW Consortium Project Number: **101087628**
Date of issuing	Nov 2023
Notional workload needed to achieve the learning outcomes	3-5 Hours
Level of the learning experience leading to the micro-credential	ADVANCED
Type of assessment	Automatically marked Questions Number of Questions: 16 – 20 Passing Score: 75%
Form of participation in the learning activity	Online Asynchronous
Type of quality assurance used to underpin the micro-credential	Peer Review

Learning Outcomes

Learning Outcomes (ref. LOs 5.1.37 and 5.1.40)

Deciphering a Guiding in Problem Solving

- Decipher technical information related to technical problems relating to your device
- Guide others in problem solving and in identifying technical problems

Description

"Technical Troubleshooting and Problem-Solving Mastery" is a Micro credential allowing participants to demonstrate the knowledge and techniques necessary to unravel complex technical issues, empowering them to become adept problem solvers and guides within their technical domains.

The Micro credential will delve into proven problem-solving methodologies, and a structured approach to addressing technical issues. Through case studies and real-world scenarios, participants will hone their critical thinking skills to efficiently troubleshoot a variety of problems. The Micro credential will explore the role of a technical guide, providing participants with strategies to mentor and assist others in identifying and resolving technical problems. Practical exercises will simulate real-world scenarios, allowing participants to refine their guidance skills.

Content will place emphasis will be placed on translating complex technical jargon into clear, understandable language, fostering collaboration and mutual understanding in diverse teams. The Micro credential will instil a mindset of adaptability, encouraging participants to stay informed about emerging technologies and evolving troubleshooting methodologies.

On successful completion of the micro credential participants will earn "Technical Troubleshooting and Problem-Solving Mastery" and will emerge as proficient technical trouble-shooters with the ability to decipher intricate technical information, apply systematic problem-solving strategies, and guide others effectively in resolving technical issues.

Questions

Technical Problems, Communication and Guiding Others

1. How do you prioritise and categorise technical issues to address them efficiently?
2. Share an example of a situation where your continuous learning efforts positively impacted your ability to solve technical problems.
3. How do you encourage a culture of continuous learning and adaptation within your professional or team environment?
4. How do you adapt your communication style when guiding someone with varying levels of technical expertise?
5. In a team setting, how do you foster collaboration and encourage collective problem-solving efforts?
6. Share an experience where you played a guiding role in assisting a colleague or team member in identifying and resolving a technical problem.
7. What strategies do you employ to ensure clear and concise communication during collaborative problem-solving sessions?

8. How do you communicate technical information and solutions to individuals who may not have a technical background?

Device Optimisation and Information Management (MC 5.1.C.5)

Basic Information

Identification of the learner	Any Citizen
Title and code of the micro-credential	Device Optimisation and Information Management **Code: MC 5.1.C.5**
Country(ies)/Region(s) of the issuer	IRELAND, ITALY, CYPRUS, GREECE, ROMANIA http://dsw.projectsgallery.eu
Awarding body(ies)	DSW Consortium Project Number: **101087628**
Date of issuing	Nov 2023
Notional workload needed to achieve the learning outcomes	3-5 Hours
Level of the learning experience leading to the micro-credential	ADVANCED
Type of assessment	Automatically marked Questions Number of Questions: 16 – 20 Passing Score: 75%
Form of participation in the learning activity	Online Asynchronous
Type of quality assurance used to underpin the micro-credential	Peer Review

Learning Outcomes

Learning Outcomes (ref. LOs 5.1.41 and 5.1.42)

System management

- Recognise the importance of removing hardware and software that are not in use of your device
- Describe how to access software and hardware information and content, and navigate between them in multi-step actions

Description

"Device Optimisation and Information Management" is a micro credential to aid participants resolve technical problems across hardware, software, settings, browsers, and storage.

The Micro credential ensures that participants will gain insights into the impact of dormant hardware and software on device performance. The Micro credential delves into the reasons behind removing unused components, ensuring that resources are allocated efficiently, and potential security risks are mitigated.

Content will cover guidance on identifying and safely removing hardware and software that are no longer in use, redundant or no longer serves a purpose. Participants will learn the significance of decluttering the physical elements of their devices for improved functionality and reduced maintenance overhead. The Micro credential covers methods to assess software usage, distinguish essential applications, and streamline the software ecosystem for optimal performance.

Additionally, participants will learn to navigate system settings, use built-in tools, and employ third-party applications to gather comprehensive data about their devices.

On successful completion of the micro credential participants will earn "Device Optimisation and Information Management" and will possess the skills to recognise and address the importance of removing unused hardware and software, access comprehensive information about their devices, and execute multi-step actions for efficient navigation.

Questions

Understanding the Importance of Removing Unused Hardware and Software

1. Why is it important to regularly remove hardware components that are not in use on your device?
2. Can you discuss potential consequences of keeping unused software on a device and how it might impact performance and security?
3. How do you assess the necessity of a hardware component or software application to determine if it should be removed?
4. Outline the steps you would take to identify and safely remove a hardware component that is no longer in use.
5. What considerations should be taken into account before removing hardware to ensure a smooth and error-free process?
6. Can you provide an example of a situation where removing unused hardware positively impacted device performance?
7. Understanding the Importance of Removing Unused Hardware and Software:

8. Why is it important to regularly remove hardware components that are not in use on your device?
9. Can you discuss potential consequences of keeping unused software on a device and how it might impact performance and security?
10. How do you assess the necessity of a hardware component or software application to determine if it should be removed?

Software and Hardware Management for Organisational Efficiency (MC 5.1.C.6)

Basic Information

Identification of the learner	Any Citizen
Title and code of the micro-credential	Software and Hardware Management for Organisational Efficiency **Code: MC 5.1.C.6**
Country(ies)/Region(s) of the issuer	IRELAND, ITALY, CYPRUS, GREECE, ROMANIA http://dsw.projectsgallery.eu
Awarding body(ies)	DSW Consortium Project Number: **101087628**
Date of issuing	Nov 2023
Notional workload needed to achieve the learning outcomes	3-5 Hours
Level of the learning experience leading to the micro-credential	ADVANCED
Type of assessment	Automatically marked Questions Number of Questions: 16 – 20 Passing Score: 75%
Form of participation in the learning activity	Online Asynchronous
Type of quality assurance used to underpin the micro-credential	Peer Review

Learning Outcomes

Learning Outcomes (ref. LOs 5.1.43 and 5.1.44)

Software and Hardware Management

- Configure settings to optimise performance in an advanced manner
- Evaluating, purchasing and installing most appropriate and efficient software or hardware

Description

"Software and Hardware Management for Organisational Efficiency" is a micro credential to provide participants with the knowledge and skills to conduct seamless updates, configure automated update settings, and analyse organisational needs to make informed decisions about hardware and software solutions while exploring hardware updates, guiding participants through considerations for upgrading components such as RAM, storage, and processors.

The Micro credential ensures that participants will gain practical skills in configuring automated update settings for both software and hardware, establishing and managing update schedules to minimise disruptions while maximising security and performance.

Content will cover how to conduct thorough analyses to determine the most suitable hardware and software solutions. This includes evaluating performance requirements, scalability, and compatibility with existing systems.

Additionally, participants will learn the intricacies of conducting online purchases for hardware and software solutions. The Micro credential covers the procurement process, including considerations for licensing, vendor reputation, and cost-effectiveness. Practical sessions will guide participants through the installation of purchased software on diverse hardware platforms.

On successful completion of the micro credential participants will earn "Software and Hardware Management for Organisational Efficiency" and will be adept at conducting software and hardware updates, configuring automated update settings, analysing organisational requirements for hardware and software solutions, and effectively managing online purchases and installations.

Questions

Software Update Proficiency

1. How do you determine when it is necessary to update software, and what factors would you consider when deciding to run updates?
2. Can you explain the importance of configuring settings for automatic software updates? What are the potential benefits and challenges associated with automated updates?

Hardware Update Best Practices

3. What are the key considerations when assessing the need for hardware updates within an organisation?
4. Describe a scenario where upgrading hardware components led to noticeable improvements in system performance.

5. How do you minimise disruptions when implementing hardware updates, especially in a business or organisational setting?

Automated Update Configurations

6. Explain the steps involved in configuring automatic updates for both software and hardware.
7. How would you tailor automated update settings to meet the specific needs and preferences of an organisation?
8. What strategies do you employ to ensure that automated updates do not interfere with critical business operations?

Online Purchases and Installation

9. What are the essential considerations when making online purchases for software solutions for an organisation?
10. How do you ensure the legitimacy and security of software purchases made online?
11. Walk through the steps involved in installing purchased software on diverse hardware platforms within an organisational context.

Strategic Problem Solving and Asset Protection (MC 5.1.C.7)

Basic Information

Identification of the learner	Any Citizen
Title and code of the micro-credential	Strategic Problem Solving and Asset Protection **Code: MC 5.1.C.7**
Country(ies)/Region(s) of the issuer	IRELAND, ITALY, CYPRUS, GREECE, ROMANIA http://dsw.projectsgallery.eu
Awarding body(ies)	DSW Consortium Project Number: **101087628**
Date of issuing	Nov 2023
Notional workload needed to achieve the learning outcomes	3-5 Hours
Level of the learning experience leading to the micro-credential	ADVANCED
Type of assessment	Automatically marked Questions Number of Questions: 16 – 20 Passing Score: 75%
Form of participation in the learning activity	Online Asynchronous
Type of quality assurance used to underpin the micro-credential	Peer Review

Learning Outcomes

Learning Outcomes (ref. LOs 5.1.45, 5.1.46 and 5.1.47)

Asset Protection Problem Solving

- Propose problem solving and decision-making strategies to others
- Develop comprehensive measures to protect organisational asset performance
- Encourages best practice measured to be rolled put across all devices or departments

Description

"Strategic Problem Solving and Asset Protection" is a micro credential to provide participants with the ability to propose effective problem-solving strategies, develop comprehensive measures to safeguard organisational assets, and champion best practices across all devices and departments.

The Micro credential ensures that participants can identify, propose and implement problem-solving and decision-making strategies in organisational contexts. Through case studies and real-world scenarios, participants will develop the skills to analyse complex issues, propose strategic solutions, and make informed decisions that align with organisational goals.

Content will cover asset protection, guiding participants in the development of comprehensive measures to safeguard organisational assets. This includes data protection, cybersecurity protocols, and strategies to mitigate risks associated with both hardware and software assets.

Additionally, participants will champion best practices and ensure their effective implementation across all devices and departments within an organisation. The Micro credential covers strategies for communication, training, and monitoring to foster a culture of excellence and adherence to established best practices.

On successful completion of the micro credential participants will earn "Strategic Problem Solving and Asset Protection" and will have the skills to propose and implement problem-solving strategies, develop robust measures for asset protection, and promote best practices across diverse devices and departments.

Questions

Comprehensive Asset Protection Measures

1. What are the key components of a comprehensive strategy for protecting organisational assets, both in terms of data and physical resources?
2. How do you approach identifying and mitigating risks to organisational assets, including potential vulnerabilities in cybersecurity?
3. Can you share an experience where your measures for asset protection had a significant impact on organisational resilience and performance?

Promoting Best Practices Across Devices or Departments

4. Describe a scenario where you successfully encouraged the adoption of best practices across different devices or departments within an organisation.
5. What strategies do you employ to ensure that best practices are effectively communicated and embraced throughout the organisation?

6. How do you address resistance to change when implementing new best practices, and what techniques do you use to foster a culture of continuous improvement?

Strategic Administration and Decision-Making in IT Management (MC 5.1.C.8)

Basic Information

Identification of the learner	Any Citizen
Title and code of the micro-credential	Strategic Administration and Decision-Making in IT Management **Code: MC 5.1.C.8**
Country(ies)/Region(s) of the issuer	IRELAND, ITALY, CYPRUS, GREECE, ROMANIA http://dsw.projectsgallery.eu
Awarding body(ies)	DSW Consortium Project Number: **101087628**
Date of issuing	Nov 2023
Notional workload needed to achieve the learning outcomes	3-5 Hours
Level of the learning experience leading to the micro-credential	ADVANCED
Type of assessment	Automatically marked Questions Number of Questions: 16 – 20 Passing Score: 75%
Form of participation in the learning activity	Online Asynchronous
Type of quality assurance used to underpin the micro-credential	Peer Review

Learning Outcomes

Learning Outcomes (ref. LOs 5.1.48, 5.1.49 and 5.1.50)

Attitudes towards IT Management

- Suggest a designated administrator for the control of software, updates, permissions, hardware, security and privacy
- Suggest the use of an agreed department/ companywide software and hardware
- Confident in being a point of contact for problem solving and decision-making queries

Description

"Strategic Administration and Decision-Making in IT Management" is a micro credential to enable participants to designate administrators for software control, updates, permissions, hardware management, and security protocols. Participants will learn the importance of standardised software and hardware usage across departments or companies, as well as develop the confidence to serve as points of contact for problem-solving and decision-making queries.

The Micro credential ensures that participants will gain insights into the crucial role of a designated administrator in overseeing software, updates, permissions, hardware configurations, and security and privacy protocols. The Micro credential covers the skills required to manage these aspects effectively and ensure the seamless functioning of IT systems.

Content will cover the benefits of adopting a standardised approach to software and hardware usage across departments or companies. Participants will learn strategies for selecting, implementing, and maintaining uniform IT solutions to enhance compatibility, efficiency, and security.

Additionally, participants will develop the confidence to serve as points of contact for problem-solving and decision-making queries within the organisation. The Micro credential covers effective communication, collaborative problem-solving strategies, and decision-making frameworks to address IT-related challenges.

On successful completion of the micro credential participants will earn "Strategic Administration and Decision-Making in IT Management" and will have the skills and knowledge to designate administrators for IT management, advocate for the standardisation of software and hardware, and confidently serve as points of contact for problem-solving and decision-making queries.

Questions

Designated Administrator Responsibilities

1. How would you identify and select a suitable candidate for the role of a designated administrator responsible for software control, updates, permissions, hardware, security, and privacy?
2. Can you outline the key responsibilities and tasks that a designated administrator should undertake to ensure effective IT management within an organisation?
3. In what ways does having a designated administrator contribute to the overall efficiency and security of IT systems?

Advocating for Standardised Software and Hardware

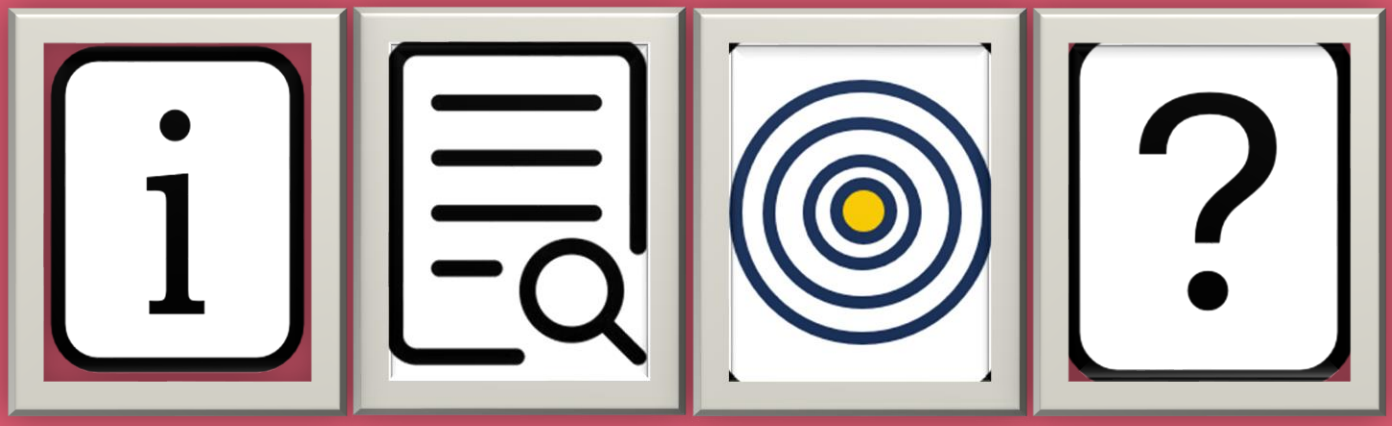
4. How would you propose and promote the adoption of agreed department/company-wide software and hardware solutions within an organisation?
5. What are the potential benefits of standardising software and hardware across departments or the entire company, and how do you address potential challenges in the implementation process?
6. Can you share a scenario where the use of standardised software and hardware positively impacted organisational efficiency?

Confidence as a Point of Contact

7. Describe a situation where you had to serve as a point of contact for problem-solving and decision-making queries in an IT-related context. How did you handle it, and what was the outcome?
8. How do you build and maintain confidence in your role as a point of contact, especially when addressing complex technical issues or making critical decisions?
9. Provide an example of a decision-making scenario where your confident involvement positively influenced the resolution of an IT-related challenge.

EXPERT LEVEL

(Level 7 and Level 8)



Strategic Asset Management and Policy Review in IT Governance (MC 5.1.D.1)

Basic Information

Identification of the learner	Any Citizen
Title and code of the micro-credential	Strategic Asset Management and Policy Review in IT Governance **Code: MC 5.1.D.1**
Country(ies)/Region(s) of the issuer	IRELAND, ITALY, CYPRUS, GREECE, ROMANIA http://dsw.projectsgallery.eu
Awarding body(ies)	DSW Consortium Project Number: **101087628**
Date of issuing	Nov 2023
Notional workload needed to achieve the learning outcomes	3-5 Hours
Level of the learning experience leading to the micro-credential	EXPERT
Type of assessment	Automatically marked Questions Number of Questions: 16 – 20 Passing Score: 75%
Form of participation in the learning activity	Online Asynchronous
Type of quality assurance used to underpin the micro-credential	Peer Review

Learning Outcomes

Learning Outcomes (ref. LOs 5.1.51, 5.1.55 and 5.1.60)

Strategic Asset Management and Policy Review

- Explain the importance of conducting annual asset reviews
- Regularly review and update policies and procedures related to hardware and software
- Manage the update of procedures, instructions and guides

Description

"Strategic Asset Management and Policy Review in IT Governance" is a micro credential to arm participants with the knowledge and skills necessary to ensure the efficiency, security, and compliance of organisational IT assets.

The Micro credential emphasises the need for continuous improvement in IT governance through the regular review and update of policies and procedures. Participants will explore best practices for policy maintenance, ensuring that guidelines related to hardware and software remain current, effective, and compliant with industry standards.

Content will cover guidance on identifying and safely removing hardware and software that are no longer in use, redundant or no longer serves a purpose. Participants will learn the significance of decluttering the physical elements of their devices for improved functionality and reduced maintenance overhead. The Micro credential covers methods to assess software usage, distinguish essential applications, and streamline the software ecosystem for optimal performance.

Additionally, participants will understand the critical role of annual asset reviews in maintaining the health and performance of organisational IT infrastructure and how regular policy and procedure updates contribute to risk mitigation and compliance assurance. The Micro credential covers effective change management, version control, and communication strategies to ensure seamless transitions and user adoption of updated documentation.

On successful completion of the micro credential participants will earn "Strategic Asset Management and Policy Review in IT Governance" and will know the importance of conducting annual asset reviews, conducting regular policy and procedure updates, and effectively managing the evolution of procedures, instructions, and guides.

Questions

Importance of Conducting Annual Asset Reviews

1. Why is it crucial to conduct annual asset reviews in an organisational IT context? What benefits does this practice bring to the overall health of IT infrastructure?
2. Can you provide examples of potential risks or challenges that may arise if an organisation neglects to conduct regular asset reviews?
3. How do annual asset reviews contribute to aligning IT resources with organisational goals and objectives?

Regular Review and Update of Policies and Procedures

4. Explain the importance of regularly reviewing and updating policies and procedures related to hardware and software in IT governance.
5. What factors or events might trigger the need for a policy or procedure update, and how do you prioritise these updates within an organisation?
6. How can regular reviews of policies and procedures contribute to maintaining compliance with industry standards and regulations?

Managing Updates of Procedures, Instructions, and Guides

7. What strategies do you employ to effectively manage the update process for procedures, instructions, and guides within an organisation?
8. How do you ensure a smooth transition and user adoption when introducing updates to existing procedures or guides?
9. Can you share an example of a situation where the management of updated documentation positively impacted the efficiency or security of IT operations?

Strategic IT Training and Resource Allocation Leadership (MC 5.1.D.2)

Basic Information

Identification of the learner	Any Citizen
Title and code of the micro-credential	Strategic IT Training and Resource Allocation Leadership **Code: MC 5.1.D.2**
Country(ies)/Region(s) of the issuer	IRELAND, ITALY, CYPRUS, GREECE, ROMANIA http://dsw.projectsgallery.eu
Awarding body(ies)	DSW Consortium Project Number: **101087628**
Date of issuing	Nov 2023
Notional workload needed to achieve the learning outcomes	3-5 Hours
Level of the learning experience leading to the micro-credential	EXPERT
Type of assessment	Automatically marked Questions Number of Questions: 16 – 20 Passing Score: 75%
Form of participation in the learning activity	Online Asynchronous
Type of quality assurance used to underpin the micro-credential	Peer Review

Learning Outcomes

Learning Outcomes (ref. LOs 5.1.52, 5.1.56 and 5.1.57)

Training and Resource Allocation

- Hold training for employees either as induction, refresher or at the introduction of new or updated software with new functions
- Advocate for increased investment in technical solutions team and allocate resources effectively
- Foster a company-wide culture of problem solving

Description

"Strategic IT Training and Resource Allocation Leadership" is a micro credential to empower participants with the skills to conduct effective training sessions for employees, advocate for increased investment in technical solutions, and cultivate a company-wide culture of problem-solving.

The Micro credential emphasises the need for conducting impactful training sessions, whether for employee induction, refresher courses, or the introduction of new and updated software and will cover instructional design, effective communication, and assessment techniques to ensure knowledge retention and application.

Content will cover guidance strategies for advocating increased investment in technical solutions within an organisation. Participants will learn how to articulate the value of technological advancements, demonstrate return on investment (ROI), and align technical solutions with organisational goals. Participants will understand the importance of aligning IT initiatives, training programs, and resource allocation with broader organisational goals.

Additionally, participants will understand the critical role of fostering a company-wide culture of problem-solving. Participants will learn leadership techniques to encourage innovation, collaboration, and continuous improvement, creating an environment where employees at all levels actively contribute to solving challenges.

On successful completion of the micro credential participants will earn "Strategic IT Training and Resource Allocation Leadership" and will be able to list impactful training sessions, advocate for increased investment in technical solutions, allocate resources strategically, foster a company-wide culture of problem-solving, and ensure that IT initiatives align with and contribute to organisational success.

Questions

Conducting Training Sessions

1. How do you approach designing and delivering training sessions, whether for employee induction, refresher courses, or the introduction of new software with new functions?
2. Can you provide an example of a training session you conducted that resulted in notable improvements in employee knowledge and performance?
3. How do you ensure that training content remains current and relevant, especially when introducing new technologies or software updates?

Advocacy for Increased Investment in Technical Solutions

4. Explain your approach to advocating for increased investment in technical solutions within an organisation. How do you articulate the value of these investments to key stakeholders?
5. Can you share an example of a successful advocacy effort where increased investment in technical solutions led to tangible benefits or improvements?
6. How do you assess and prioritise the technological needs of the organisation to justify increased investment?

Fostering a Culture of Problem Solving

7. How do you actively foster a company-wide culture of problem-solving within your organisation?
8. Provide an example of a situation where the cultivation of a problem-solving culture positively impacted the resolution of a significant organisational challenge.
9. What specific initiatives or practices do you implement to encourage employees at all levels to contribute to problem-solving efforts?

Advanced IT Performance Optimisation and Troubleshooting Strategies (MC 5.1.D.3)

Basic Information

Identification of the learner	Any Citizen
Title and code of the micro-credential	Advanced IT Performance Optimisation and Troubleshooting Strategies **Code: MC 5.1.D.3**
Country(ies)/Region(s) of the issuer	IRELAND, ITALY, CYPRUS, GREECE, ROMANIA http://dsw.projectsgallery.eu
Awarding body(ies)	DSW Consortium Project Number: **101087628**
Date of issuing	Nov 2023
Notional workload needed to achieve the learning outcomes	3-5 Hours
Level of the learning experience leading to the micro-credential	EXPERT
Type of assessment	Automatically marked Questions Number of Questions: 16 – 20 Passing Score: 75%
Form of participation in the learning activity	Online Asynchronous
Type of quality assurance used to underpin the micro-credential	Peer Review

Learning Outcomes

Learning Outcomes (ref. LOs 5.1.53, 5.1.54, 5.1.58 and 5.1.59)

Advanced Problem-Solving Strategies

- Configure advanced settings to optimise performance
- Analyse and categorise potential technical problems based on their impact and likelihood of occurrence and ease of solving
- Create IT issue templates
- Create a decision tree that employees can follow to try and solve simple IT issues they may be experiencing

Description

"Advanced IT Performance Optimisation and Troubleshooting Strategies" is a micro credential to empower participants with the skills to configure advanced settings for optimal performance, analyse and categorise technical problems strategically, create effective IT issue templates, and develop decision trees for employees to navigate and resolve simple IT issues independently.

The Micro credential covers a range of settings, from hardware configurations to software adjustments, enabling participants to fine-tune systems for enhanced efficiency by exploring configuring advanced settings to optimise the performance of IT systems.

Content will cover guidance when creating comprehensive IT issue templates. The Micro credential covers the essential elements of effective templates, ensuring clarity, accuracy, and relevance for streamlined communication and issue resolution as well as guiding participants in in creating decision trees that employees can follow to troubleshoot and solve simple IT issues independently.

Additionally, participants will be able to analyse and categorise potential technical problems based on their impact, likelihood of occurrence, and ease of solving. Participants will develop a strategic approach to prioritise and address technical issues efficiently.

On successful completion of the micro credential participants will earn "Advanced IT Performance Optimisation and Troubleshooting Strategies" and will gain the skills to configure advanced settings for optimal performance, strategically analyse and categorise technical problems, create effective IT issue templates, and develop user-friendly decision trees for employees.

Questions

Configure Advanced Settings for Performance and Problem Solving

1. Can you describe the process you would follow to configure advanced settings to optimise the performance of a specific software application or hardware component?
2. Explain your approach to analysing potential technical problems based on their impact, likelihood of occurrence, and ease of solving. What factors do you consider during this analysis?
3. How does a categorisation process influence the priority assigned to different technical issues?

Creation of IT Issue Templates

4. How do you go about creating an effective IT issue template? What key elements do you include to ensure clarity and relevance for efficient issue resolution?
5. Provide an example of an IT issue template you have created and explain how it contributed to a smoother resolution process.
6. How do you ensure that IT issue templates are adaptable to different types of technical problems?
7. Describe the steps involved in creating a decision tree that employees can follow to troubleshoot and solve simple IT issues. What criteria do you use for branching decisions?
8. How do you update decision trees over time to reflect changes in technology or address new types of IT issues?

Holistic Employee Training and Continuous Improvement Strategies (MC 5.1.D.4)

Basic Information

Identification of the learner	Any Citizen
Title and code of the micro-credential	Holistic Employee Training and Continuous Improvement Strategies **Code: MC 5.1.D.4**
Country(ies)/Region(s) of the issuer	IRELAND, ITALY, CYPRUS, GREECE, ROMANIA http://dsw.projectsgallery.eu
Awarding body(ies)	DSW Consortium Project Number: **101087628**
Date of issuing	Nov 2023
Notional workload needed to achieve the learning outcomes	3-5 Hours
Level of the learning experience leading to the micro-credential	EXPERT
Type of assessment	Automatically marked Questions Number of Questions: 16 – 20 Passing Score: 75%
Form of participation in the learning activity	Online Asynchronous
Type of quality assurance used to underpin the micro-credential	Peer Review

Learning Outcomes

Learning Outcomes (ref. LOs 5.1.61, 5.1.68 and 5.1.70)

Continuous Improvement Strategies

- Employ a mandatory employee training program for new starts to include basic problem detection and basic problem solving and incorporating other checks eg. security
- Adopt a culture of continuous improvement and keeping relevant
- Employ an attitude of proposing new ideas and processes for improvement

Description

"Holistic Employee Training and Continuous Improvement Strategies" is a micro credential to cultivate a culture of proactive problem-solving, security awareness, and continuous advancement within your organisation.

Upon achievement of this Micro credential learners will be able to design and implement a mandatory training program for new hires. This Micro credential includes essential skills in problem detection, basic problem-solving to give employees a holistic understanding of their role in maintaining a secure and efficient workplace.

Content will provide guidance and strategies on keeping employees continuously engaged in learning and staying relevant within their roles as well as instilling an attitude of proposing new ideas and processes for improvement.

Additionally, participants will understand the e importance of fostering a culture of continuous improvement within an organisation. Participants will explore strategies to encourage employees at all levels to identify opportunities for enhancement and contribute ideas.

On successful completion of the micro credential participants will earn "Holistic Employee Training and Continuous Improvement Strategies" and will know the importance of fostering a culture of continuous improvement, problem solving and encouraging innovation.

Questions

Culture and New Knowledge

1. Describe your approach to cultivating a culture of continuous improvement within an organisation. How would you encourage employees to actively contribute to the ongoing enhancement of processes and practices?
2. How do you handle resistance to change when introducing continuous improvement initiatives, and what strategies do you use to gain employee buy-in?
3. How do you foster an attitude among employees where they feel empowered and encouraged to propose new ideas and processes for improvement?
4. How do you ensure that employees stay relevant in their roles through continuous learning and adaptation to industry changes?
5. How do you balance the need for employees to stay relevant with the demands of their current roles?
6. What key performance indicators (KPIs) would you use to assess the success of continuous improvement efforts?

Advanced PC Hardware Upgrades and Optimisation (MC 5.1.D.5)

Basic Information

Identification of the learner	Any Citizen
Title and code of the micro-credential	Advanced PC Hardware Upgrades and Optimisation **Code: MC 5.1.D.5**
Country(ies)/Region(s) of the issuer	IRELAND, ITALY, CYPRUS, GREECE, ROMANIA http://dsw.projectsgallery.eu
Awarding body(ies)	DSW Consortium Project Number: **101087628**
Date of issuing	Nov 2023
Notional workload needed to achieve the learning outcomes	3-5 Hours
Level of the learning experience leading to the micro-credential	EXPERT
Type of assessment	Automatically marked Questions Number of Questions: 16 – 20 Passing Score: 75%
Form of participation in the learning activity	Online Asynchronous
Type of quality assurance used to underpin the micro-credential	Peer Review

Learning Outcomes

Learning Outcomes (ref. LOs 5.1.62, 5.1.63, 5.1.66 and 5.1.67)

Upgrades and Optimisation Strategies

- Upgrade to replace the hard drive with a faster one or a Solid-State Drive (SSD)
- Add eg. a USB 3.0 expansion card to fully use USB 3.0 devices, or upgrade the Graphics Processing Unit (GPU)
- Install Random Access Memory (RAM)
- Familiar with computer languages

Description

"Advanced PC Hardware Upgrades and Optimisation" is a micro credential to help master advanced hardware upgrades and optimisations.

Upon achievement of this Micro credential learners will be able to upgrade computer storage for enhanced speed and reliability. Understand the advantages of Solid-State Drives (SSDs) and master the process of seamless migration and troubleshoot common issues related to storage upgrades.

Content will provide guidance on exploring the world of high-speed data transfer by adding a USB 3.0 expansion card, upgrading Graphics Processing Unit (GPU) for improved gaming, graphic design, and video editing performance and optimise compatibility with the latest USB 3.0 devices and graphics-intensive applications.

Additionally, participants will gain expertise in installing and configuring Random Access Memory (RAM) for improved multitasking and system responsiveness, understand the role of RAM in overall system performance and exploring advanced techniques for optimising RAM usage and troubleshooting common RAM-related issues.

Participants will develop a foundational understanding of computer languages and their role in hardware optimisation eg. Python, PowerShell, and Bash and how they can contribute to streamline system management and customisation. Participants can also learn how to integrate hardware upgrades seamlessly into your workflow using scripting and automation.

On successful completion of the micro credential participants will earn "Advanced PC Hardware Upgrades and Optimisation" and will have the skills and confidence to transform your computer into a high-performance machine through strategic hardware upgrades and optimisations.

Questions

Hard Drive and SSD Replacement

1. What are the key advantages of upgrading from a traditional hard drive to a Solid-State Drive (SSD)?
2. Can you outline the step-by-step process of safely replacing a hard drive with an SSD?

USB 3.0 Expansion and GPU Upgrade

3. Explain the benefits of adding a USB 3.0 expansion card to a computer system.

4. What considerations should be taken into account when upgrading the Graphics Processing Unit (GPU) for improved performance?

RAM Installation and Optimisation

5. Walk through the steps involved in installing additional Random Access Memory (RAM) modules in a computer.
6. Why is RAM considered crucial for system performance, and how does it impact multitasking capabilities?

Familiarity with Computer Languages

7. Why is it beneficial for someone working with hardware upgrades to be familiar with computer languages such as Python, PowerShell, or Bash?
8. How can knowledge of computer languages contribute to the seamless integration of hardware upgrades into a computing environment?

Advanced IT Infrastructure Management and Optimisation (MC 5.1.D.6)

Basic Information

Identification of the learner	Any Citizen
Title and code of the micro-credential	Advanced IT Infrastructure Management and Optimisation **Code: MC 5.1.D.6**
Country(ies)/Region(s) of the issuer	IRELAND, ITALY, CYPRUS, GREECE, ROMANIA http://dsw.projectsgallery.eu
Awarding body(ies)	DSW Consortium Project Number: **101087628**
Date of issuing	Nov 2023
Notional workload needed to achieve the learning outcomes	3-5 Hours
Level of the learning experience leading to the micro-credential	EXPERT
Type of assessment	Automatically marked Questions Number of Questions: 16 – 20 Passing Score: 75%
Form of participation in the learning activity	Online Asynchronous
Type of quality assurance used to underpin the micro-credential	Peer Review

Learning Outcomes

Learning Outcomes (ref. LOs 5.1.64, 5.1.65 and 5.1.69)

Optimisation Strategies

- Create and monitor a register of assets
- Replace network servers, routers and storage devices
- Optimise, personalise, store and share settings to improve speed and efficiency of device and share recommendations

Description

"Advanced PC Hardware Upgrades and Optimisation" is a micro credential to build skills in asset management, server replacement, network optimisation, and device efficiency

Upon achievement of this Micro credential participants will be able to create and maintain a comprehensive register of assets, ensuring visibility and control over the entire IT inventory, how to explore best practices for asset tracking, monitoring, and lifecycle management for the implementation to enhance security and compliance through effective asset management.

Content will provide guidance on exploring the process of replacing network servers, routers, and storage devices with a focus on minimal downtime and optimal performance and understanding the considerations involved in selecting and migrating to new hardware while developing expertise in troubleshooting and addressing challenges associated with server and network device replacements.

Additionally, participants will know how to stay updated on the latest industry trends and emerging technologies to make informed recommendations for infrastructure improvements, understand the importance of proactive monitoring and analysis to identify areas for enhancement and collaboration strategies with peers to share best practices and contribute to a culture of continuous improvement.

On successful completion of the micro credential participants will earn "Advanced PC Hardware Upgrades and Optimisation" and will have the skills and knowledge to effectively create and manage asset registers, replace critical network components, optimise device settings, and provide valuable recommendations for enhancing IT infrastructure.

Questions

Create and Monitor a Register of Assets

1. How would you go about creating a comprehensive register of assets within an organisation, and what key information should be included in this register?
2. Describe the importance of monitoring and updating the asset register regularly. What challenges might arise if this process is neglected?

Replace Network Servers, Routers, and Storage Devices

3. Outline the steps involved in replacing a network server, including considerations for minimising downtime and ensuring a smooth transition.

4. Discuss the key factors to consider when replacing routers in a network infrastructure. How can potential compatibility issues be addressed proactively?

Recommendations and Best Practices

5. What steps would you take to stay informed about the latest industry trends and emerging technologies in the realm of IT infrastructure management?
6. In what ways can proactive monitoring and analysis contribute to the identification of areas for optimisation and improvement in IT infrastructure?

APPENDIX I: LEARNING OUTCOMES FOR COMPETENCE AREA: PROBLEM SOLVING

DSW
DIGITAL SKILLS WALLET

Co-funded by
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INTRODUCTION

Solving technical problems refers to the skills and competencies required to identify technical problems when operating devices and using digital environments, and to solve them (from trouble-shooting to solving more complex problems). This knowledge is essential in today's digital age as well as data literacy when much of our lives and how we communicate and work are influenced and facilitated by digital technologies.

Problem solving involves the ability to identify problems, locate relevant solutions, and critically evaluate the solution associated with the particular problem. It encompasses the skills necessary to think through various scenarios when a problem is encountered while being vigilant to avoid such problems occurring in the first instance. Problem solving also includes the capability to effectively identify and decipher the problem in a meaningful way.

It is key in this day and age to possess the knowledge, skills and attitudes to understand, interpret, and analyse data. It involves the skills to work with data sets, identify trends and patterns, draw insights, and make informed decisions based on data. Data literacy is closely tied to data visualization, statistical analysis, and data-driven problem-solving.

Both solving technical problems and data literacy are crucial in numerous contexts, including academic research, professional work, and everyday life. These skills empower individuals to navigate the vast amount of information available, critically assess its quality, and make informed judgments and decisions. With the rapid growth of technology and the increasing reliance on data-driven approaches, problem solving has become an indispensable skill for individuals across various disciplines and industries.

PREREQUISITES

To develop knowledge, skills and attitudes related to the competency PROBLEM SOLVING several areas serve well as prerequisites. These include:

1. **Understanding of Devices:** Familiarity with different types of devices is essential eg. Phones, tablets, laptops, hardrives, monitors, keyboards, mouse, printers and power. Understanding how to access and navigate around these sources are essential.
2. **Information Seeking Strategies**: Knowledge of effective strategies for locating information, including formulating search queries, using search engines, settings, using and searching hardware and software, and employing advanced search techniques to retrieve relevant and reliable information.
3. **Critical Evaluation**: The ability to critically evaluate the credibility, accuracy, and reliability of information sources. This involves assessing the authority, objectivity and relevance of the information to determine its trustworthiness.
4. **Information Organisation and Management**: Skills in organizing, categorizing, and managing information effectively. This includes techniques for note-taking, citation management, file organization, and information storage and retrieval.
5. **Ethical Use of Information**: Understanding and adhering to ethical principles related to information use, such as avoiding plagiarism, respecting copyright and intellectual property rights, and properly citing and referencing sources.
6. **Data Literacy Fundamentals**: A basic understanding of data concepts, including data types, variables, and basic statistical measures. This foundation enables individuals to interpret and analyse data effectively.
7. **Data Visualization**: Proficiency in visualizing data through charts, graphs, and other visual representations to facilitate understanding and communicate insights effectively.
8. **Data Analysis and Interpretation**: Skills in analysing and interpreting data using statistical techniques and tools. This includes understanding statistical measures, correlation, regression analysis, and data modeling.
9. **Problem-Solving with Data**: The ability to identify problems or questions that can be addressed using data analysis, and to apply data-driven approaches to solve real-world problems and make informed decisions.
10. **Information and Data Security**: Awareness of the importance of information and data security, including best practices for protecting personal and sensitive information, understanding privacy policies, and recognizing potential security risks.

Developing these knowledge areas and skills through formal education, training programs, and practical experience can enhance an individual's PROBLEM SOLVING, enabling them to navigate the vast information landscape and leverage data effectively.

BASIC/FOUNDATION (LEVEL 1 and LEVEL 2)

COMPETENCE AREA 5.1: PROBLEM SOLVING: SOLVING TECHNICAL PROBLEMS			
COMPETENCE: TO IDENTIFY TECHNICAL PROBLEMS WHEN OPERATING DEVICES AND USING DIGITAL ENVIRONMENTS, AND TO SOLVE THEM (FROM TROUBLE-SHOOTING TO SOLVING MORE COMPLEX PROBLEMS).			
LEVEL: 1 – FOUNDATION At basic level and with guidance, I can: • identify simple technical problems when operating devices and using digital environments. • identify simple solutions to solve them.			
Learning Outcome	**Level**	**K – S - A**	**Description**
1. Distinguish between hardware and software	L1	K	Identify between hardware and software on devices eg. keyboards (hardware) Microsoft Excel (software)
2. Identify various electronic devices, their functions and benefits	L1	K	Classify between electronic devices, eg. tablet, mobile phone, server, external hard drive and know their use
3. Recognise undesired behaviour or a lack of expected functionality or responsiveness in device hardware and software	L1	K	Recognise how the device should “normally” behave. Recognise any unusual behaviour affecting the device
4. Identify possible technical problems that effect or inhibit performance and be aware that steps exist to fix such problems	L1	K	Identify a simple technical problem and know that steps exist to make simple fixes.

5. Explain in simple terms what, where and how the technical issue is impacting the device	L1	K-S	Gather information on the problem and can describe the problem in simple terms how it is impacting the device. When it happens (is there a patterns?), where it happens (apps, programs, internet etc.) and what technical problem happens (app shutting down).
6. Foster an attitude of problem solving and awareness of optimal and sub optimal performance of hardware and software	L1	A	By encouraging individuals to be aware of normal performance and behaviour, they will develop an attitude of attentiveness and responsiveness to less than ideal performance in their digital environment. This heightened awareness can contribute to better performance, enabling individuals to respond appropriately to any unexpected problems hazards they may encounter
7. Identify where the device settings are located on the device and be aware that there may be potential consequences of changing settings	L1	K	Understand that fixing one issue or making adjustments to device settings may cause another.
8. Apply simple troubleshooting solutions to solve problems like, connecting to the internet, adjusting brightness and volume of the device	L1	S	Find simple troubleshooting solutions are available on the device, device manufacturer's technical manual or on the internet and apply simple fixes and changes on the device taking the steps to address technical issues
9. Consider documenting simple troubleshooting steps taken to ensures others will know what to do if the problem happens again	L1	K-A	Understand that taking an active approach that documentation procedures will help in creating troubleshooting checklists to quickly identify and fix potential problems for others experiencing the same or similar problems

10. Understand that suspicious email links, websites, apps, browsers, programs and lack of proper malware and security updates might slow device performance	L1	K-A	Acknowledge that untrusted websites, apps, browsers, links and programs exist. Understand that computer updates, security settings and software can avoid technical issues.

INTERMEDIATE (LEVEL 3 AND LEVEL 4)

COMPETENCE AREA 5.1: PROBLEM SOLVING: SOLVING TECHNICAL PROBLEMS			
COMPETENCE: TO IDENTIFY TECHNICAL PROBLEMS WHEN OPERATING DEVICES AND USING DIGITAL ENVIRONMENTS, AND TO SOLVE THEM (FROM TROUBLE-SHOOTING TO SOLVING MORE COMPLEX PROBLEMS).			
LEVEL: 3 – INTERMEDIATE On my own and solving straightforward problems, I can: • indicate well-defined and routine technical problems when operating devices and using digital environments. • select well-defined and routine solutions to them. LEVEL: 4 – INTERMEDIATE Independently, according to my own needs, and solving well-defined and non-routine problems, I can: • differentiate technical problems when operating devices and using digital environments. • select solutions to them.			
Learning Outcome	**Level**	**K – S - A**	**Description**
11. Understand at a basic level what to check when experiencing a lack of expected functionality or responsiveness in electronics, computers and software systems	L3	K-S-A	Develop a theory about the possible cause, propose the source of the probable cause of the sub-optimal performance, be open to testing different solutions
12. Awareness of the places where problems occur relating to your device	L3	K	Familiarise yourself with the places to investigate for potential problems eg. operating systems, applications, central processing units (CPUs), firewalls, settings, hard drives, solid-state drives, servers, external connections and programs
13. Understand how the technical issue is impacting the device	L3	K	Understand how the problem can impact the device hardware and software

and the consequences of not addressing the problem			
14. Proactiveness in solving and addressing sub optimal performance of hardware and software	L3	A	By encouraging individuals to be proactive when first noticing sub-optimal performance and technical issues encourages them to develop an attitude of attentiveness and responsiveness. This heightened awareness can contribute to less downtime, less costs, less damage and more efficiency all round
15. List simple checks to conduct to avoid performance, technical and functional problems	L3	K	Understand some simple checks that can be initially performed to apply fixes before investigating the next steps
16. Understand the standard device settings and make simple adjustments to these	L3	S	Understand what device recommended settings are and be able to adjust or reset simple device settings. Know that making changes in settings may have implications on the performance of the device
17. Find technical information on your device	L3	S	Can detect where to find information and properties. This is useful for more complex technical issues and gathering information for problem solving
18. Knows usage of a device can impact the performance of the device eg. changing device settings, internet browsing setting, age and internal memory	L3	K	Know that updates, file maintenance, cache clearing, age and monitoring of storage and understand elements that can affect the performance of the device. Understand that fixing one issue may cause another and keeping logs are helpful in tracing possible problems
19. Document simple troubleshooting steps	L3	K-S-A	Independently document and take an active approach to listing and storing troubleshooting procedures for future use with the view to help others
20. Understand the elements that slow down computer systems	L3	K-A	Actively avoid untrusted websites, apps, browsers, links and programs. Understand that computer updates, security settings and software

			checks need to be conducted regularly to avoid technical issues and other considerations that negatively affect functionality
21. Vigilant in downloading files and using unknown sites to avoid potential malware effecting device behaviour	L4	K-A	Understand that clicking on suspicious links, downloading files and using untrusted sources and sites can impact the behaviour of your device.
22. Indicate the importance of regular checks, maintenance and updates	L4	K	Understand that regular updates ensure that the device is kept safe and can preserve optimal performance
23. Know that troubleshooting options are available and program performance statistics are available on a device	L4	K	Aware that devices come with built-in tools that can help track and provide information on performance. Be aware that fixes to try and automatically run
24. Use troubleshooting features to protect and preserve the optimal performance for the device	L4	S	Use troubleshooting solutions available on the device, device manufacturer's technical manual or on the internet to apply fixes on the device
25. Know how to change device settings to improve performance, responsiveness and or device behaviour	L4	K-S	Detect device settings and make changes that can impact performance eg. battery life. Adjusting brightness, closing background apps, adjusting sleep and snooze setting on the device when not in use
26. Understand the importance of deleting unused programs, internet cache, downloads, files and apps	L4	K	Know that deleting items on the device can ensure and improve for optimal device performance
27. Document troubleshooting steps	L4	K-S-A	Taking an active approach to document procedures to identify and fix problems

28. Detect the places where troubleshooting can be applied and where problems occur	L4	K	List where to find the places to investigate for potential problems eg. operating systems, applications, central processing units (CPUs), firewalls, hard drives, solid-state drives, servers, external connections and programs
29. Take and active approach in avoiding performance, responsiveness and technical problems	L4	A	Be proactive in avoiding downtime by ensuring checks are made and being aware of the checks that need to be performed. Consider creating a plan for each device, a schedule of checks and upkeep calendar
30. Indicate the importance of only using recommended sites and programs to help with technical problem resolution	L4	K-S-A	Identify the most reputable websites, apps, malware, browsers and programs to use and is vigilant to run security updates for security for optimal performance of the device

ADVANCED LEVEL (LEVEL 5 AND LEVEL 6)

COMPETENCE AREA 5.1: PROBLEM SOLVING: SOLVING TECHNICAL PROBLEMS			
COMPETENCE: TO IDENTIFY TECHNICAL PROBLEMS WHEN OPERATING DEVICES AND USING DIGITAL ENVIRONMENTS, AND TO SOLVE THEM (FROM TROUBLE-SHOOTING TO SOLVING MORE COMPLEX PROBLEMS).			
LEVEL: 5 – ADVANCED As well as guiding others, I can: • assess technical problems when using digital environments and operating digital devices. • apply different solutions to them LEVEL: 6 – ADVANCED At advanced level, according to my own needs and those of others, and in complex contexts, I can: • appraise technical problems when operating devices and using technical environments • resolve them with the most appropriate solution			
Learning Outcome	**Level**	**K – S - A**	**Description**
31. Isolate causes of technical problems in hardware, software, settings, browsers and storage	L5	S	Pinpoint the source of the technical problem with assurance by identifying the specific element causing the device to act abnormally
32. Confidently apply technical solutions that affect or inhibit performance	L5	S	Independently, can confidently take the necessary steps to apply solutions to technical problems eg. defragment drive, run anti-virus software, turn off background tasks
33. Understand the risks of outdated or unsupported software on your devices and the importance of updating	L5	K	Aware of the performance risks posed by using outdated software and the need to update or replace it with supported versions

or replacing such software to avoid technical problems			
34. Adopt an attitude of good practice to clean device, run diagnostics, back up data on external or cloud drives	L5	A	Respectful of the device's operation, preservation and performance knowing it is essential for efficient and effective use of the device
35. Understand the importance of periodically updating hardware eg. RAM, graphics cards and SSD for better speed and performance	L5	K	Aware of what checks, changes and updates need to be conducted to improve device speed, run larger applications and improve performance
36. Evaluate and compare different hardware and software solutions to select the most effective ones for your specific device and needs	L5	S	Research and compare various solutions based on their features, reviews, properties and effectiveness to choose the most suitable one for your device
37. Decipher technical information related to technical problems relating to your device	L5	K-S	Interpret the information relating to the operating systems, applications, central processing units (CPUs), firewalls, settings, hard drives, solid-state drives, servers, external connections and programs etc.
38. Configure the appearance or actions in an application, operating system or hardware	L5	K-S	Enter the advanced settings in applications, operating systems or in hardware and familiarise yourself with the elements
39. Understand the importance of avoiding free software tools that claim to solve	L5	K	Create a plan but conducting initial checks, recognise reputable software that provide the solution to your specific needs

performance issues and zip files to improve storage			
40. Guide others in problem solving and in identifying technical problems	L5	K-S-A	Actively helps others in developing theories and possible solutions to their technical issue
41. Recognise the importance of removing hardware and software that are not in use of your device	L6	K	Understand that by not removing obsolete, outdated programs, apps and disconnecting hardware can cause undesired device behaviour
42. Describe how to access software and hardware information and content, and navigate between them in multi-step actions	L6	K-S	Independently, can examine the information contained in software and hardware and recognise the links eg. printer software, hardware and properties may need to connect to one another
43. Configure settings, including automation, to optimise performance in an advanced manner	L6	S	Conduct software and hardware updates, checking the latest versions and configure settings to automatically run updates for latest versions
44. Evaluating, purchasing and installing most appropriate and efficient software or hardware	L6	K-S	Can conduct analysis to consider the most suitable and effective hardware and software solutions for organisational requirements, conduct a purchase online and install software on device hardware
45. Propose problem solving and decision-making strategies to others	L6	K-S	Manage enquiries through a process of problem detection and solution offerings

46. Develop comprehensive measures to protect organisational asset performance	L6	K-S-A	Design and implement measures to safeguard the organisation assets by fostering a conscious attitude among employees and stakeholders to enhance the overall performance of assets
47. Encourages best practice measured to be rolled put across all devices or departments	L6	K-A	Understand which best practice methods to be adopted for each device in each department
48. Suggest a designated administrator for the control of software, updates, permissions, hardware, security and privacy	L6	K	Understand that managing and controlling what is installed by monitoring access can avoid unwanted files, programs, apps, storage and security problems thus avoiding potential technical problems
49. Suggest the use of an agreed department/ company wide software and hardware	L6	K	Understand that by using the same systems means greater compatibility for devices all round
50. Confident in being a point of contact for problem solving and decision making queries	L6	A	Feel comfortable answering queries when people are experiencing technical problems and be able to suggest fixes and give step by step guidance in person or over the phone

EXPERT LEVEL (LEVEL 7 AND LEVEL 8)

COMPETENCE AREA 5.1: PROBLEM SOLVING: SOLVING TECHNICAL PROBLEMS			
COMPETENCE: TO IDENTIFY TECHNICAL PROBLEMS WHEN OPERATING DEVICES AND USING DIGITAL ENVIRONMENTS, AND TO SOLVE THEM (FROM TROUBLE-SHOOTING TO SOLVING MORE COMPLEX PROBLEMS).			
LEVEL: 7 – HIGHLY SPECIALISED At highly specialised level, I can: • create solutions to complex problems with limited definition that are related to technical problems when operating devices and using digital environments. • integrate my knowledge to contribute to professional practice and knowledge and guide others in s in solving technical problems LEVEL: 8 – HIGHLY SPECIALISED At the most advanced and specialised level, I can: • create solutions to solve complex problems with many interacting factors that are related to technical problems when operating devices and using digital environments. • propose new ideas and processes to the field			
Learning Outcome	**Level**	**K – S - A**	**Description**
51. Explain the importance of conducting annual asset reviews	L7	K-S	Demonstrate and deliver annual asset reviews focused on file clean up, physical clean, software and security updates, hardware functionality, obsolete files, programs and app.
52. Hold training for employees either as induction, refresher or at the introduction of new or updated software with new functions	L7	S	Understand that by imparting people with knowledge means less IT tickets, technical queries, less downtime and empowers employees by increasing their confidence and efficiency for the organization/ department
53. Configure advanced settings to optimise performance	L7	S	Conduct software updates, checking the latest versions and configure advanced settings to automatically update for latest versions

54. Analyse and categorise potential technical problems based on their impact and likelihood of occurrence and ease of solving	L7	K-S	Demonstrate knowledge of being able to prioritise and identify the severity of specific technical problems eg. using a traffic light system. By properly categorising the problem resources can be effectively allocated to address the most critical first.
55. Regularly review and update policies and procedures related to hardware and software	L7	S	Manage the review and updating of policies and procedures to align with current best practices and regulations. This proactive approach ensures that the organisation maintains a strong position and can effectively respond to problems.
56. Advocate for increased investment in technical solutions team and allocate resources effectively	L7	K-S-A	Understand that through effective resource allocation, you can enhance the organisation's ability to detect, prevent, respond and solve problems effectively and efficiently.
57. Foster a company-wide culture of problem solving	L7	K-S-A	Through your actions, demonstrate that leading by example will inspire employees at all levels to prioritise problem solving and not to ignore technical issues in their daily activities
58. Create IT issue templates	L7	S	Demonstrate that creating templates for IT problems prompts the person who is experiencing the issue to gather as much information as possible in order for others to determine the problem and solution
59. Create a decision tree that employees can follow to try and solve simple IT issues they may be experiencing	L7	K	Recognise that employees may be more inclined to use decision trees to help them come to a solution themselves. This avoids them waiting while also teaching and directing them towards a learned solution.
60. Manage the update of procedures, instructions and guides	L7	S	Acknowledge that when software changes this can have an impact on instructions, the location of where things are found, memory etc and that these need updating to keep solutions relevant

61. Employ a mandatory employee training program for new starts to include basic problem detection and basic problem solving and incorporating other checks eg. security	L8	S-A	With the knowledge accumulated, design and deliver an online training program with testing and scoring to effectively monitor and manage staff knowledge. Set up a personal account to manage training.
62. Upgrade to replace the hard drive with a faster one or a Solid-State Drive (SSD)	L8	K-S	Understand that by upgrading hardware can boost in performance
63. Add eg. a USB 3.0 expansion card to fully use USB 3.0 devices, or upgrade the Graphics Processing Unit (GPU)	L8	K-S	Understand that upgrades are necessary for smooth running of a device eg. cleaner, more advanced graphics, or for more monitors
64. Create and monitor a register of assets	L8	K-S-A	Understand that upgrades may be necessary for aged computers to meet a new, or updated program's system requirements
65. Replace network servers, routers and storage devices	L8	K-S	Understand that devices need replacements based on new demands and capacities
66. Install Random Access Memory (RAM)	L8	K-S-A	Understand that the computer can store additional temporary data, or retrieve such data at a faster rate when more RAM is added
67. Familiar with computer languages	L8	K	Understand that different computer languages exist, conducting and controlling various actions within hardware and software that can affect performance, can create and solve problems
68. Adopt a culture of continuous improvement and keeping relevant	L8	A	Keep abreast of latest updates, technology, releases, hardware, software, problems and fixes keeping knowledge current

69. Optimise, personalise, store and share settings to improve speed and efficiency of device and share recommendations	L8	K-S-A	Recognise that sharing customisation settings with the organisation for eg. browsers and settings can ensure a benchmark for performance and detecting abnormal device behaviour
70. Employ an attitude of proposing new ideas and processes for improvement	L8	A	Acknowledge that software and hardware are constantly changing and be open to trying or changing software and hardware if problems are frequent and can be avoided or improved by making the change

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EdiTC EDUCATION & INFORMATION TECHNOLOGY CENTRE

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DIMITRA educational organization

UNIVERSITAS GALATIENSIS

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Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.