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LESSON 11

DATA AND DEVICE PROTECTION

I.MAM VIRTUAL – 101083431 Programme(s): Erasmus+ (ERASMUS+) Topic(s): ERASMUS-EDU-2021-VIRT-EXCH-NDICI Type of action: ERASMUS Project Grants ERASMUS-EDU-2021-VIRT-EXCH- Virtual Exchanges

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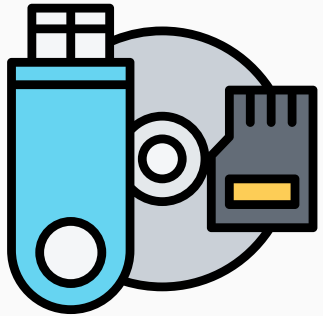
Data and Device Protection

Data and device protection is a critical aspect of modern information security. With the increasing reliance on digital devices and the vast amounts of data generated daily, ensuring the safety and privacy of both data and devices has become paramount. This presentation will cover key concepts, threats, and strategies for effective data and device protection.



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Data Protection

Definition: Safeguarding personal and sensitive data from unauthorized access, corruption, or theft.
Importance: Protects privacy, maintains trust, and ensures compliance with regulations like GDPR and CCPA.

Device Protection

Definition: Ensuring the security of physical and virtual devices from threats that can compromise their integrity.
Importance: Prevents unauthorized access, protects against malware, and ensures the proper functioning of devices.

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Common Threats

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Data Threats

Data Breaches: Unauthorized access to sensitive data.
Data Corruption: Accidental or intentional alteration of data.
Data Loss: Permanent loss of data due to hardware failure, human error, or cyberattacks.

Device Threats

Malware: Malicious software designed to disrupt, damage, or gain unauthorized access to devices.
Phishing: Fraudulent attempts to obtain sensitive information by disguising as a trustworthy entity.
Physical Theft: Loss or theft of devices leading to potential data breaches.

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Strategies for Data Protection

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Encryption

Definition: Converting data into a code to prevent unauthorized access.
Application: Use strong encryption for data at rest and in transit.

Access Controls

Definition: Mechanisms that limit access to data based on user roles.
Application: Implement multi-factor authentication (MFA) and least privilege access principles.

Regular Backups

Definition: Creating copies of data to restore in case of data loss.
Application: Schedule regular backups and store them in secure, off-site locations.

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Strategies for Device Protection

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Antivirus and Anti-Malware Software

Definition: Programs designed to detect and remove malicious software.
Application: Install reputable antivirus software and keep it updated.

Secure Configurations

Definition: Setting up devices with security best practices in mind.
Application: Disable unnecessary services and applications, change default passwords, and apply security patches.

Physical Security Measures

Definition: Protecting devices from physical threats.
Application: Use locks, secure storage, and track devices to prevent theft or unauthorized access.

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Emerging Technologies in Protection

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AI and Machine Learning

Application: Detect and respond to threats in real-time using predictive analytics.

Blockchain

Application: Ensure data integrity and enhance secure transactions with decentralized ledger technology.

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