Common Vulnerabilities in ICT Systems

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1. **Weak Passwords**:
    - Using easily guessable passwords or not changing default passwords can make systems vulnerable to unauthorized access.
    - Recommendations: Use complex and unique passwords, enable multi-factor authentication.
2. **Outdated Software**:
    - Failure to update software with security patches can leave systems exposed to known vulnerabilities.
    - Recommendations: Regularly update software and applications to the latest versions.
3. **Phishing Attacks**:
    - Phishing emails or messages can trick users into revealing sensitive information or installing malware.
    - Recommendations: Educate users on how to identify phishing attempts, use email filtering tools.
4. **Unsecured Networks**:
    - Connecting to unsecured public Wi-Fi networks can expose data to potential interception by hackers.
    - Recommendations: Use virtual private networks (VPNs) for secure connections, avoid sharing sensitive information on public networks.
5. **Lack of Encryption**:
    - Failure to encrypt data in transit or at rest can lead to data breaches and unauthorized access.
    - Recommendations: Implement encryption protocols for data transmission and storage.
6. **Inadequate Access Controls**:

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- Weak access control mechanisms can allow unauthorized users to gain privileged access to systems.
- Recommendations: Implement role-based access controls, regularly review and update user permissions.

7. **SQL Injection**:
   - Poorly sanitized inputs in web applications can be exploited to execute malicious SQL commands.
   - Recommendations: Use parameterized queries, input validation, and secure coding practices.
8. **Cross-Site Scripting (XSS)**:
   - Vulnerabilities in web applications can allow attackers to inject malicious scripts into web pages viewed by other users.
   - Recommendations: Validate user inputs, sanitize data, and use security mechanisms like Content Security Policy.
9. **Denial of Service (DoS) Attacks**:
   - Overloading systems with excessive traffic can disrupt services and make them unavailable to legitimate users.
   - Recommendations: Implement DoS protection mechanisms, monitor network traffic for unusual patterns.
10. **Insufficient Backup and Recovery**:
    - Failure to regularly back up data and have a recovery plan in place can lead to data loss in the event of a security incident.
    - Recommendations: Implement automated backup processes, test data recovery procedures regularly.

By understanding and addressing these common vulnerabilities, organizations can enhance the security of their ICT systems and mitigate the risks of cyber threats.