

I5020 Computer Security

Quizz 6: User authentication

This assessment evaluates the following competencies:

- *CS003 – Identify weaknesses in a computer system or infrastructure and propose solutions*
- *CS204 – Discuss about general design principles for protection mechanisms*
- *CS207 – Understand hardware protections that can be installed on a computer system*
- *CS202 – Discuss about the differences and importance of authentication and access control*
- *CS401 – Identify vulnerabilities in a system and propose countermeasures for them*
- *CS005 – Identify residual risks that come from a countermeasure*

Three affirmations are given for the five first assessed competencies. For each of them, you have to decide whether it is true or false. To get a star for the competency, you must have the correct answer for the three affirmations.

CS003	True	False
A password manager can be used by users to prevent them writing down passwords.	<input type="checkbox"/>	<input type="checkbox"/>
Only relying on voice recognition for user authentication is a strong secure choice.	<input type="checkbox"/>	<input type="checkbox"/>
Having salts in clear in password files speeds up dictionary attacks dramatically.	<input type="checkbox"/>	<input type="checkbox"/>

CS204	True	False
Several user authentication methods should be combined to authenticate users on a system.	<input type="checkbox"/>	<input type="checkbox"/>
Encrypting the password database stored on a computer increases its integrity.	<input type="checkbox"/>	<input type="checkbox"/>
User authentication is the first line of defence in computer security.	<input type="checkbox"/>	<input type="checkbox"/>

CS207	True	False
Fingerprint-based authentication is very accurate and has a very low implementation cost.	<input type="checkbox"/>	<input type="checkbox"/>
A compromised smart card reader is a vulnerability for the confidentiality of the system.	<input type="checkbox"/>	<input type="checkbox"/>
A weakness of tokens to authenticate a user is that they can be stolen, forged or lost.	<input type="checkbox"/>	<input type="checkbox"/>

CS202	True	False
Access control can only be implemented if user authentication is possible.	<input type="checkbox"/>	<input type="checkbox"/>
In the identification phase of user authentication, he/she presents his/her (user, password) pair to the system he/she wants to access.	<input type="checkbox"/>	<input type="checkbox"/>
Password-based user authentication is the best approach to use which suffers from only few vulnerabilities.	<input type="checkbox"/>	<input type="checkbox"/>

For the two last assessed competencies (CS401 and CS005), you have to write down two kinds of attacks that are possible on passwords, propose one countermeasure for each of them and identify the residual risk of the countermeasure. Justify your answer.

Attack 1

Attack 2