Cyber-Security — Tutorial N°1

Exercise 1:

Tell for each of the following cases if it is about a vulnerability (V) or an attack (A)

- Missing data encryption
- Lack of security cameras
- Session hijacking
- Disclosure of protected data
- Unlocked doors at important companies
- Identity spoofing
- Spy on messages
- Unrestricted upload of dangerous files
- Code downloads without integrity checks
- Usage of broken security algorithms
- Buffer overflow
- Illegal discovery of user's password
- Limited memory space
- URL Redirection to untrustworthy websites
- Phishing
- Weak and unchanged passwords
- Eavesdropping / Sniffing
- Service request flooding
- Website without security

Exercise 2

[Lagraa 2020] For each of the actions described below, which of the following security objectives is (are) compromised? (A) Confidentiality, (B) Integrity, (C) Availability, (D) Non-repudiation, (E) Authentication or (F) Access control

Action	**Compromised objective(s)**
'A' copies the homework of 'B'	
'A' blocks the operating system of 'B'	
'A' modifies the quantity on a purchase order of 'B'	
'A' benefits of 'B' 's service without his permission	
'A' reads the emails sent from 'B' to 'C'	
'A' sends lots of requests to 'B' until it breaks down	
'A' uses the identity of 'C' to request a service from 'B'	
'A' sends an email to 'B' on behalf of 'C'	

'A' denies sending an email to 'B' even though it was sent	
'A' loses access to his stolen smartphone	
'A' loses access to data stored on his smartphone	
A third party (thief) will have access to confidential data stored on the stolen smartphone of 'A'	

Exercise 3

[Lagraa 2020]

1. An organization that has designed its information system in such a way that its data will only be available to authorized staff, it wants to protect:

- ○ Confidentiality
- ○ Availability
- ○ Authentication
- ○ Integrity

2. After intercepting previous communications, an attacker can use these messages to impersonate a legal user in order to log into the system. The name of this attack is :

- ○ Attack on the authentication
- ○ Spoofing attack
- ○ Replay attack

3. Identity authentication can be ensured by:

- ○ Passwords
- ○ Tokens
- ○ QR code
- ○ Digital fingerprint

Exercise 4

[Lagraa 2020] A student before coming to the exam decided to stay in the library and use his mobile phone to connect to the Internet. This student knows that the network sends all packets in clear (unencrypted), which he found odd. After browsing Facebook and Twitter for a while, he noticed that a student known for his hacking attempts (hacker) is sitting near him and using his laptop connected to the same Wi-Fi network. Can the objectives below be affected by the hacker in case of attack on the student and how?

__ Privacy

__ Integrity.

__ Availability