

الجامعة المستنصرية / كلية التربية / قسم علوم الحاسبات



4th Class

Computers & Data Security

أمنية الحاسوب والبيانات

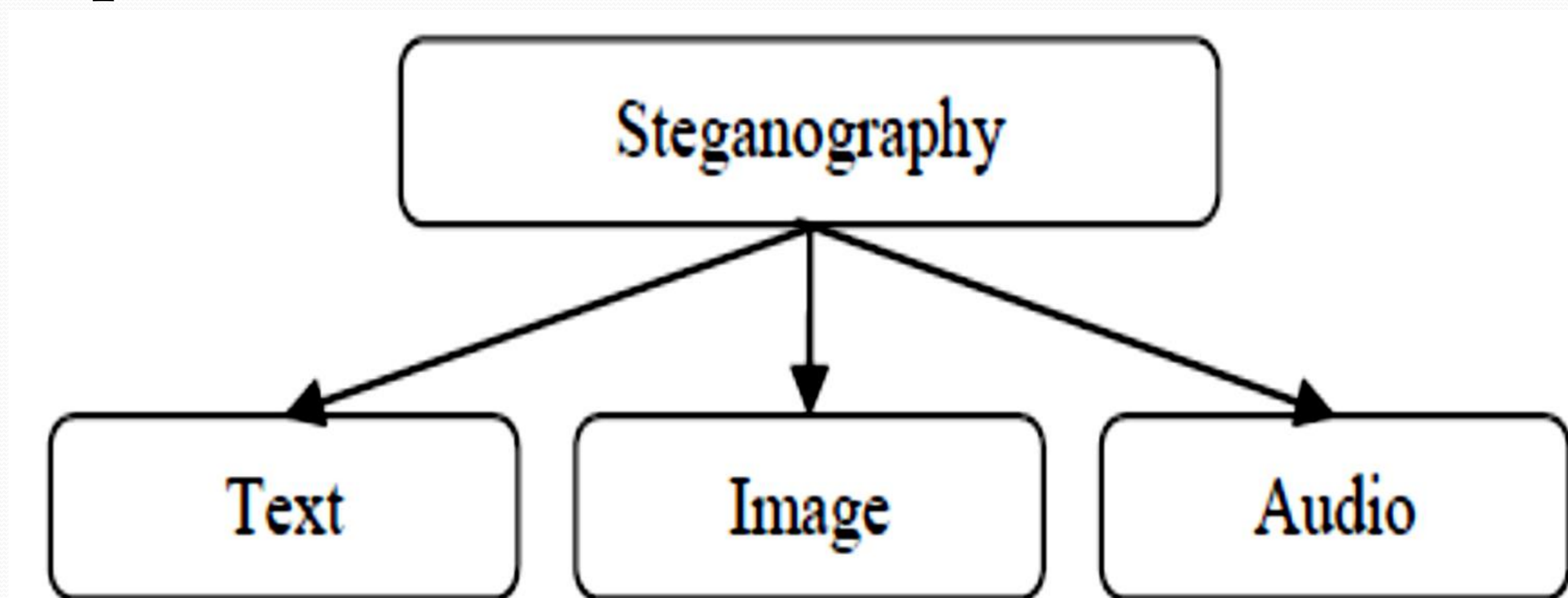
أستاذ المادة

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Steganography

- The word steganography is derived from the Greek words “*stegos*” meaning “cover” and “*grafia*” meaning “writing” defining it as “covered writing”. **Steganography** is one such pro-security innovation in which secret data is embedded in a cover.
- **Steganography** deals with composing hidden messages so that only the sender and the receiver know that the message even exists. Since nobody except the sender and the receiver knows the existence of the message, it does not attract unwanted attention.
- The study of hiding information is called **Cryptography**. When communicating over an untrusted medium such as internet, it is very important to protect information and **Cryptography** plays an important role in this. Today, **Cryptography** uses principles from several disciplines such as mathematics, computer science, etc. **Steganography** deals with composing hidden messages so that only the sender and the receiver know that the message even exists.
- **Steganography** and **Cryptography** are closely related. **Cryptography** scrambles (تخطيط) messages so they cannot be understood.

- **Steganography** on the other hand, will hide the message so there is no knowledge of the existence of the message in the first place. In some situations, sending an encrypted message will arouse suspicion (تثير الشك) while an "invisible" message will not do so. Both sciences can be combined to produce better protection of the message. In this case, when the **Steganography** fails and the message can be detected, it is still of no use as it is encrypted using **Cryptography** techniques.
- There exist two types of materials in steganography: message and carrier. Message is the secret data that should be hidden and carrier is the material that takes the message in it.
- Figure below shows the different categories of file formats that can be used for steganography techniques.



Differences between Steganography and Cryptography:-

- Cryptography is the study of hiding information, while Steganography deals with composing hidden messages so that only the sender and the receiver know that the message even exists. 2. In Steganography, only the sender and the receiver know the existence of the message, whereas in cryptography the existence of the encrypted message is visible to the world. Due to this, Steganography removes the unwanted attention coming to the hidden message.
- 3. Steganography hides a message within another message normally called as a cover and looks like a normal graphic, video, or sound file. In cryptography, encrypted message looks like meaningless jumble of characters.
- Cryptographic methods try to protect the content of a message, while Steganography uses methods that would hide both the message as well as the content.
- 5. Steganography requires caution when reusing pictures or sound files. In cryptography caution is required when reusing keys. By combining Steganography and Cryptography one can achieve better security.

Types of Steganography:-

- 1. Hiding a message inside text.
- 2. Hiding a message inside images.
- 3. Hiding a message inside audio or video files.