جامعة الحمدانية /كلية التربية

قسم علوم الحاسوب

Fourth Class

Data Security

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Lecture 1

Basic Data Security Concepts

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Basic Data Security Concepts

➤ **Data security** is one of the most daunting tasks for IT and infosec professionals. Each year, companies of all sizes spend a sizable portion of their IT security budgets protecting their organizations from hackers intent on gaining access to data through brute force, exploiting vulnerabilities .

➤ **Data security** refers to the process of protecting data from **unauthorized access** and data corruption throughout its lifecycle.

Why data security is important

➢ Safe guarding it from unauthorized access by internal or external people

➢ protects your company from financial loss, reputation damage, consumer confidence disintegration, and brand erosion

➢ Provide support for the critical business processes.

➢ Provide protection for the personal and sensitive information.
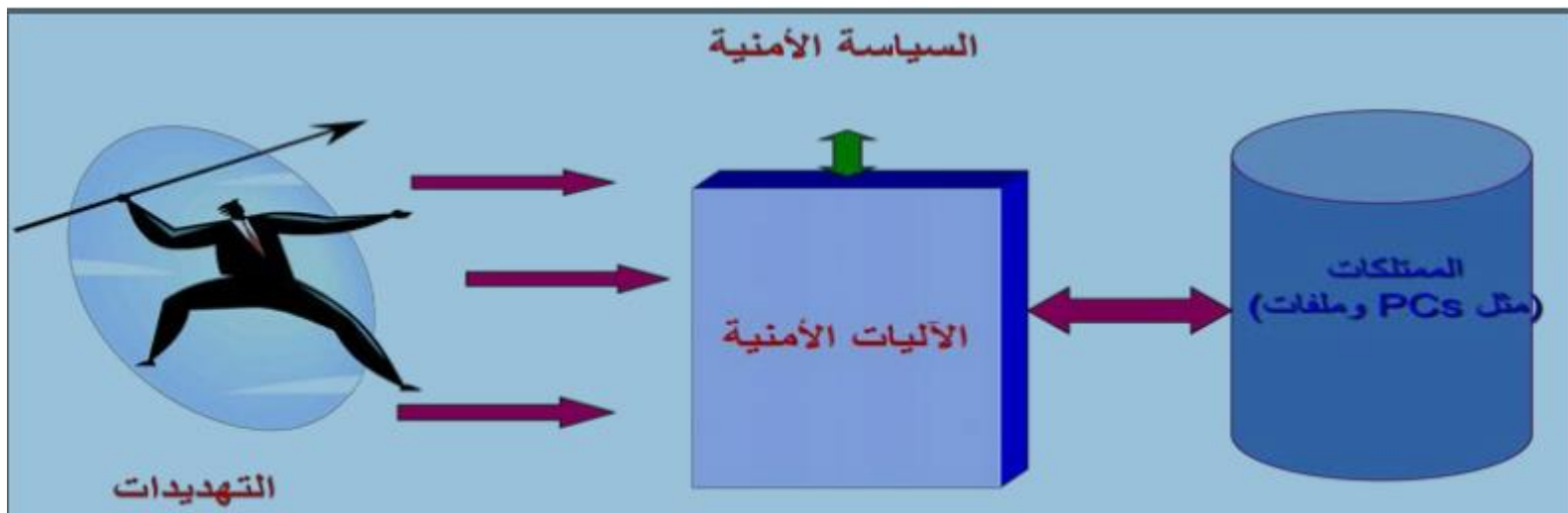
What will happen if your computer gets hacked?

➢ It could be used to hide some data and programs.

➢ Some one could access personal information.

➢ Some one could record all your keys that are used like passwords.

➢ It could generate a large amount of unwanted traffic.

what goes into protecting data?

- ➢ Data security has myriad aspects that protect information in motion and in use. Here are some technologies widely used by enterprises to protect data.

- ➢ Use a strong password when entering the system.

- ➢ Take backup.

- ➢ Use antivirus software.

- ➢ Use a firewall.

Definitions

- **Computer Security :-** is the protection of computing systems and the data that they store or access. It refers to the technological safeguards and managerial procedures that can be applied to computer hardware, programs, and data.

- **Network Security :-** measures to protect data during their transmission

- **Internet Security :-** measures to protect data during their transmission over a collection of interconnected networks

- **Information systems security :-** is the ability to provide the services required by the user community while simultaneously preventing unauthorized use of system resources

- **Security Mechanism :-** means the mechanism that is designed to detect, prevent, or recover from security attack. Remember that no single mechanism will support all functions required.

Definitions

❑ ***Privacy on Internet*** *:-* It means the measures to protect data during their transmission over a collection of interconnected networks. Social networking sites like Facebook, personal web pages have also become public sources of personal information.

❑ **Identification** :- the identification of a user, file, program, or other object is the unique name or number assigned to that object.

❑ **Threat** : A potential for violation of security, which exists when there is a circumstance, capability, action, or event that could breach security and cause harm. That is, a threat is a possible danger that might exploit a vulnerability.

❑ **Attack** : An assault on system security that derives from an intelligent threat; that is, an intelligent act that is a deliberate attempt (especially in the sense of a method or technique) to evade security services and violate the security policy of a system.

Types of software (Virus) to Access Information

➢ **There are several types of software that can be used to gain access to unauthorized data or information:-**

➢ **Trojan Horse**

* For the similarity of his work with the legend of Trojan Horse wooden which hid by a number of soldiers Greeks and they
  were the reason to open the city of Trojan.

* It is a kind of software which is loaded with major program and doing some hidden functions that are often concentrated to penetrate the system.

* Trojan horses may steal information or damage the host computer systems and may be used for the download by search engines or by installing online games or applications based on internet taking advantage of security gaps that allow unauthorized access to the system.

Types of software to Access Information

➢ **Salami Attack :**

* Is a process similar to the process slicer where small deducted

* This type of software is attacking the banks where the decimals deduct each amount daily and will be transferred to another account without being noticed and within days or months will get the beneficiary on the huge amounts of money.

- ## Homework

  What are the other types of virus programs that threaten information security?

  ## Next lecture

  Aspects of Information Security

شكرا لاصغاءكم