



Data Security

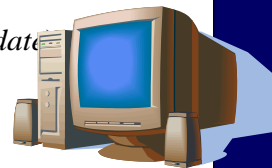
Prof. Kudang B. Seminar, PhD

11/23/2014

1

Tujuan Pengamanan Data

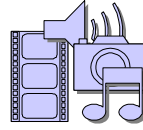
- menjamin ketersediaan data (*data availability*)
- mencegah kerusakan dan korupsi data (*data damage and corruption*)
- mencegah penggunaan data oleh yang tidak berhak (*unauthorized usage*)
- menjamin pemutakhiran data (*data update*)
- menjamin validitas data (*data validity*)



11/23/2014

2

Jenis Kerawanan Data (Types of Data Vulnerability)



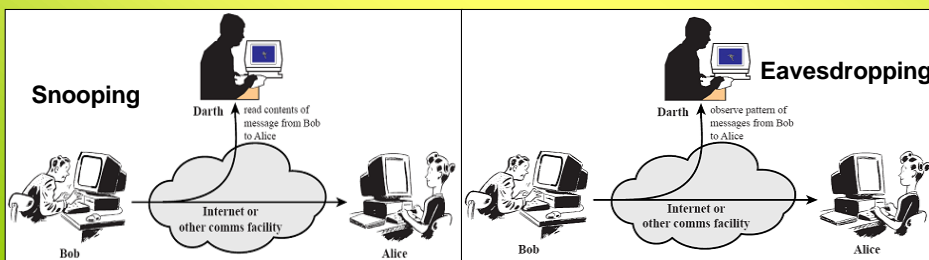
- kehilangan data (*data losses*)
- kerusakan data (*data damage*)
- data yang tak dapat diakses (*non-accessable data*)
- data yang tak terjemahkan (*undecodable data*)
- data usang atau tidak valid (*obsolete or invalid data*)
- replika data yang tak konsisten (*inconsistent data replica*)
- Penyalinan data (*data copying*)
- Pengaksesan data terlarang (*unauthorized access*)
- Penyalahgunaan data (*abuse*)

11/23/2014

3

Serangan Keamanan

- Pasif
 - Snooping: berusaha mencuri informasi berharga dari suatu dokumen
 - Eavesdropping: mendengarkan sebuah percakapan orang lain untuk mencuri informasi



Serangan Keamanan (lanjutan ...)

- Aktif
 - Interception: menghentikan informasi dan mengambilnya untuk mendapatkan informasi berharga, selanjutnya diteruskan kembali
 - Denial of Service (DoS): melumpuhkan target (hang, crash) sehingga sistem tidak dapat memberikan layanan
 - Repudiation: memberikan informasi palsu kepada target atau bertindak sebagai orang lain untuk mendapatkan informasi yang diinginkan pelaku.

11/23/2014

5

Praktek Pencurian PIN di Indonesia

- Kasus Bank BCA
 - *Typosquatting* → membuat domain “plesetan”
 - Nama domain Asli: <http://www.klikbca.com>
 - Beli kombinasi domain klikbca.com
 - Harga Rp. 100rb @ nama domain .COM
 - www.clickbca.com
 - www.bcaclick.com
 - www.kilkbca.com
 - www.bcakilck.com
 - www.cilckbca.com
 - www.bcacilck.com
 - dsb

Akibatnya:

Pelaku mendapatkan:
kode akses (pin),
nomor rekening,
Password
dari puluhan bahkan ratusan
nasabah

11/23/2014

6

Pencurian PIN via Kamera Mikro

Pencurian PIN dengan Kamera Wireless



Sumber: [Budi Rahardjo, 2005]

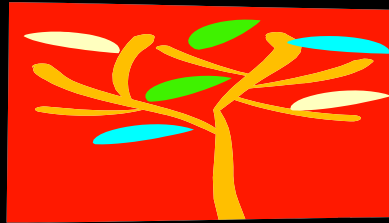
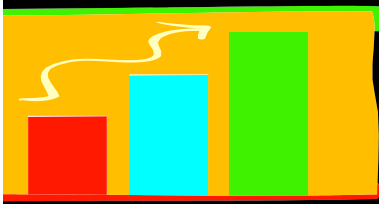
11/23/2014

11/23/2014

8

SCOPE OF SECURITY

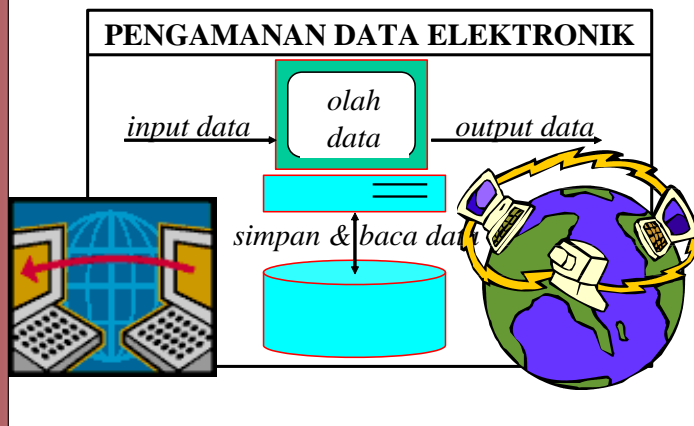
- **Electronically safe** (computer and network systems)
- **Physically safe** (rooms, channels, spaces, environment)
- **Procedurally safe** (policies, laws, merit systems)



11/23/2014

9

Scope of Electronic Security

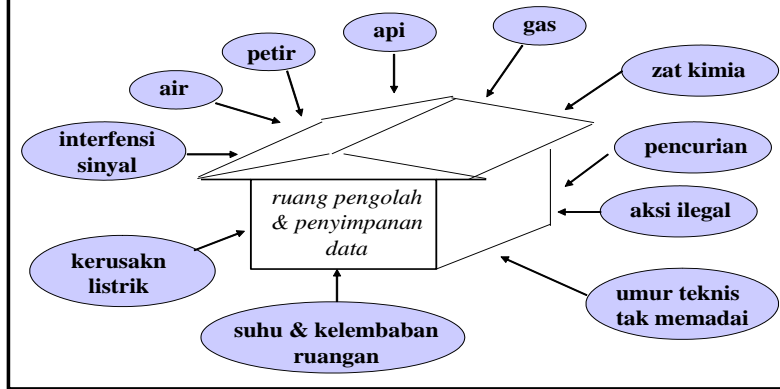


11/23/2014

10

Scope of Physical Security

PENGAMANAN FASILITAS FISIK

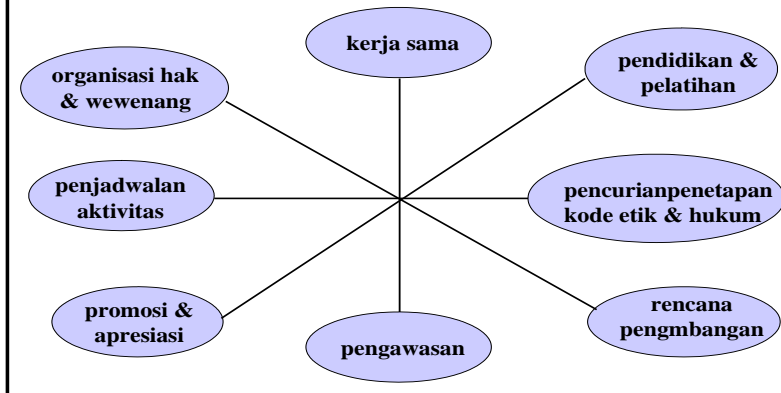


11/23/2014

11

Scope of Procedural Security

PENGAMANAN PROSEDUR KERJA



11/23/2014

12

Methods of Data Security

- Access Right Assignment
- Authentication
- Virus prevention, detection & removal
- Network Protection & Security
- Data Encryption
- Periodical Data Backup
- Recovery System
- Monitoring System
- Establishment of SOP & Training

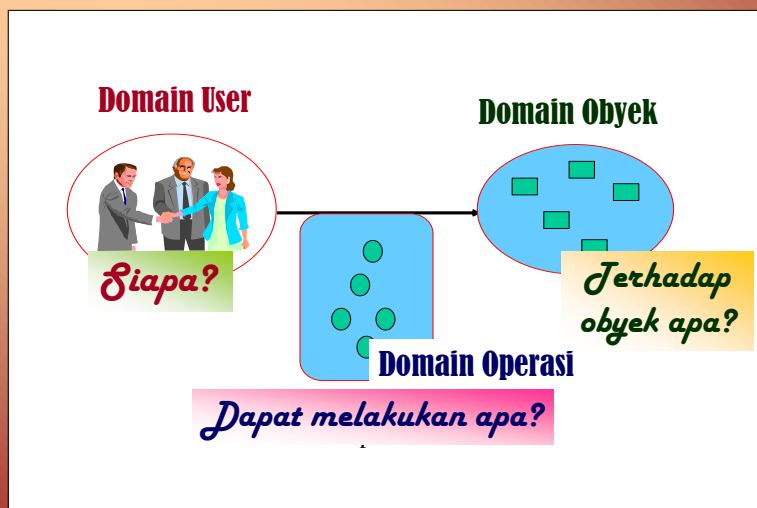
nobody knows you're dog



11/23/2014

13

Access Right Assignment



11/23/2014

14

Example of Access Right Assignment

<i>Object?</i> <i>Who?</i>	Data A	Data B	Data C	Data D
Sisca		Write	Delete	
Robert	Read	Update		
Lidya				None

Operation

11/23/2014

15

Methods of Data Security: *Authentication*

- To ensure the identity, legality and authority of a user/ agroup of users to enter and utilize a system that store data.
- In general, authentication uses the combination of protected login ID and password
- The use of *bio-password* are highly recommended nowadays.



11/23/2014

16



COMPUTER SECURITY: RISKS AND SAFEGUARDS

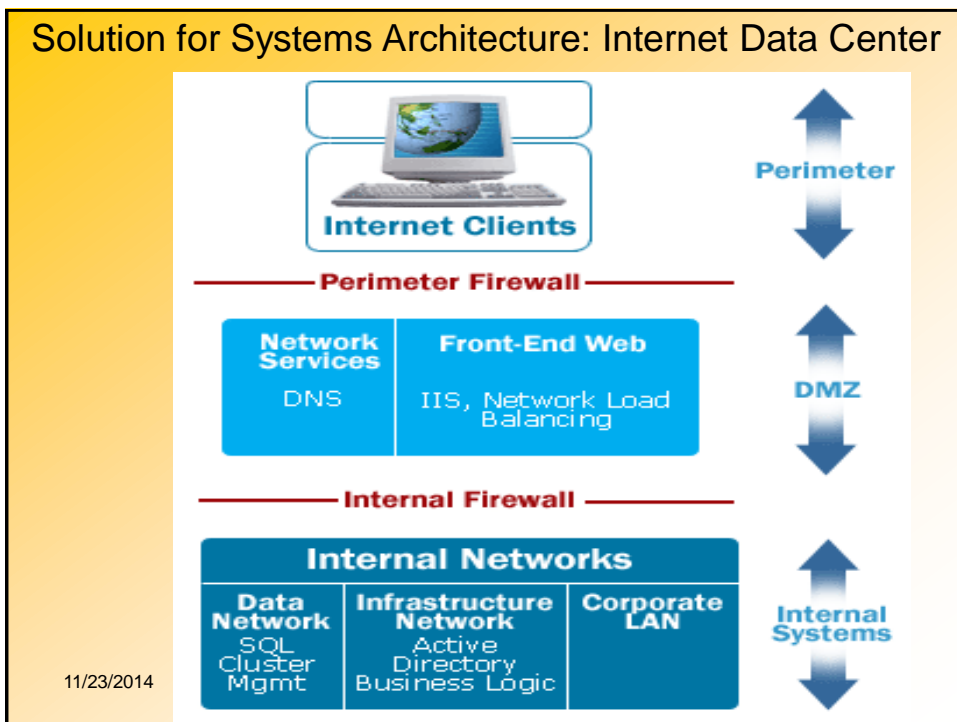
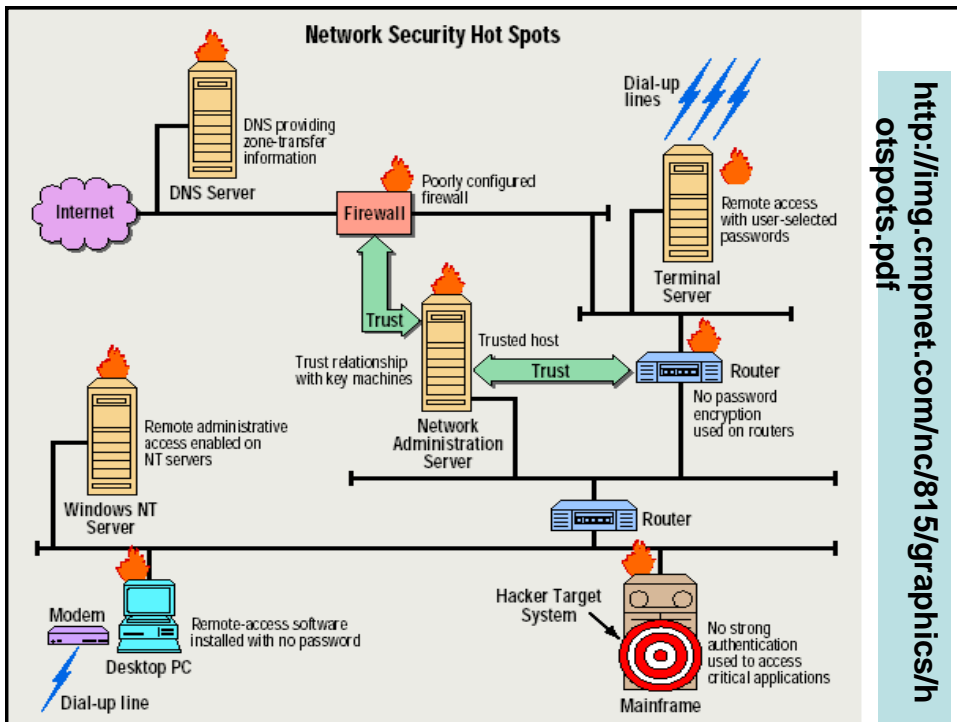
- Virus detection and removal
 - Antivirus programs
 - Virus signatures
 - Polymorphic virus
 - Stealth virus



COMPUTER SECURITY: RISKS AND SAFEGUARDS

- Computer viruses
 - Boot sector
 - File
 - Trojan horse
 - Macro
 - Logic bomb
 - Time bomb
 - Worm





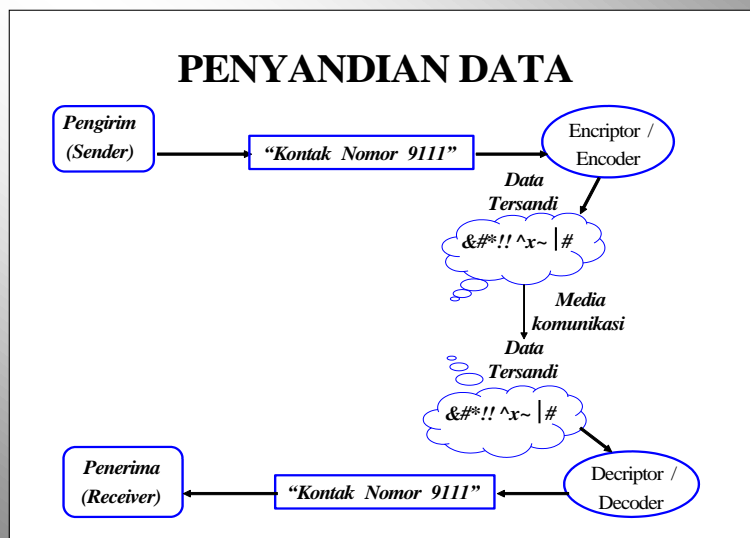


COMPUTER SECURITY: RISKS AND SAFEGUARDS

> Information theft

- > **Encryption** a process which transforms a message to conceal its information
 - > **Plaintext** is non-encrypted (original) text
 - > **Ciphertext** is encrypted text

Data Encryption



11/23/2014

22

Periodical Data Backup

Bakcup data adalah proses penyalinan data ke media penyimpanan sekunder/tersier (seperti CD-ROM, External hardisk, tape, optical disk, drum disk) yang terpisah dari data master (asli)nya sehingga peluang terjadi kerusakan secara simultan dari seluruh data master dan backupnya semakin kecil



11/23/2014



23

COMPUTER SECURITY: RISKS AND SAFEGUARDS

- Disaster recovery plan
 - Emergency plan
 - Backup plan
 - Recovery plan
 - Test plan

A cartoon illustration of a man in a white shirt and red tie running towards a server rack. He has a look of urgency or concern. The server rack is grey and has a monitor on top. The background is blue.



MONITORING SYSTEM

- Unauthorized collection and use of information
 - U.S. government laws
- Employee monitoring



Establishme of SOP & Training



11/23/2014

26

Thank You



11/23/2014

27