INSTITUT TEKNOLOGI DEL

MATERI PRAKTIKUM

Keamanan Perangkat Lunak
SEMESTER GASAL TAHUN AJAR 2024/2025

Session Date	:	23 Oktober 2023
Semester	:	V
Courses	:	Software Security / Keamanan Perangkat Lunak
Week/Session	:	09/03
Key Topics	:	**Steganography**
Activity	:	Mengerjakan *review question*, *problem* dan *code analysis.*
Duration	:	170 menit
Delivery	:	Laporan Tugas *softcopy*
Deadline of delivery	:	Diberitahukan di kelas.
Place of delivery	:	e-Course
Goal	:	Mahasiswa memahami konsep dasar dari Steganography

PENUGASAN:

Sebelum bekerja, setiap mahasiswa harus membaca instruksi di bawah ini.

Sangat disarankan bagi anda untuk:

1. ***Membaca soal-soal yang diberikan secara.***
2. ***Mencari sumber-sumber lain seperti buku, artikel, bahkan video untuk memperkaya wawasan dan meningkatkan pemahaman anda.***
3. ***Jika anda merasa ada hal yang belum dipahami, silakan untuk berkonsultasi pada TA.***
4. ***Dengan demikian diharapkan anda mampu mengikuti materi kuliah dan praktikum sebaik mungkin.***

Selamat Belajar & Good Luck!

Review Questions

1. What is Steganography?
2. How many media can use a steganography technique?
3. What is the difference between cryptography and steganography?
4. What is the difference between MSB and LSB?

Computer Programming (C#)

Code using Microsoft Visual Studio.

In this class, you will get the hybrid cryptography and steganography.

The system has implement 2 cryptography, namely: playfair (classic cryptography) and ElGamal (modern cryptography)

The ciphertext will embed to image using LSB steganography techiques**.**

How to run:

Encryption and embedding

1. Open the tab of key to generate the ElGamal public and private key
2. Click generate and save the key. Don't forget your directory.
3. Go to Enkripsi-Embed menu. Start to Enkripsi with Playfair, you can add text and key of playfair (its up to you). In ElGamal you have to import Public Key, and click Enkripsi Button. The ciphertext will show on the textbox.
4. Now we want to embed the ciphertext to image, click browse to choose the image, and click Embed.
5. Don't forget to save the image (stego-image)

Extraction and Decryption

1. Choose the stego-image by click Browse Button.
2. Click Ekstrak to extract the text
3. Move to the ElGamal algorithm, you have to import the Private Key, and Decrypt
4. Move to the Playfair algorithm, input the key and click Dekripsi.
5. You have a plaintext.

The program can download in:

https://institutteknologidel-my.sharepoint.com/:u:/g/personal/rudychandra_del_ac_id/EZnB7x-IExVBndWt0fOaTaYBN0CEdU3uaoSTcA9JnY9ABA?e=T7oEbf

Deliverables:

1. Analyze how the program that has been shared works. You have to provide illustrations.
2. How the steganography in the program work?
3. Answer the review question and problems on handwritten paper, scan it and submit to e-Course.