



CRYPTOGRAPHY AND STEGANOGRAPHY

Department of Informatics

Session 1 – Introduction to Cryptography

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Study Contract

- UTS (Week 8) ☐ 30%
- UAS (Week 16) ☐ 30%
- Task 1 & Task 2 (Personal/Group) ☐ 30%
- Attendance, Quizzes, Attitude & Behavior ☐ 10%



Preventing Student Cheating in Indonesia using OpenAI Based on RoBERTa OpenAI Detector (GPT-2 Model)



Abdul Azzam Ajhari

2 min read · Dec 29, 2022



MailOnline

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How ChatGPT could make it easy to cheat on written tests and homework "You can NO LONGER give take-home exams or homework"

- A new AI chatbot from Open AI called ChatGPT can generate all sorts of text from basic questions and prompts and has gone viral this week.
- ChatGPT can "answer follow-up questions, admit its mistakes, challenge incorrect premises, and reject inappropriate requests," according to OpenAI.
- "You can no longer give take-home exams/homework," Karin Bryen, a University of Toronto professor, said.
- The program has been dubbed the most powerful artificial intelligence chatbot ever and some have said it will eliminate homework, exams and Google Search.

By CHRISTOPHER CANNON, U.S. SCIENCE AND TECHNOLOGY EDITOR FOR DAILYMAL.COM
PUBLISHED: 12:46 GMT, 7 December 2022 | UPDATED: 11:02 GMT, 8 December 2022

<https://www.dailymail.co.uk/sciencetech/article-11513127/ChatGPT-OpenAI-cheat-tests-homework.html>

Forbes

Teachers Fear ChatGPT Will Make Cheating Easier Than Ever

Rashishrivastava / Forbes Staff
Forbes, which is owned by its competitors for Forbes

Dec 10, 2022 | 10:44pm EST

<https://www.forbes.com/sites/rashishrivastava/2022/12/12/teachers-fear-chatgpt-will-make-cheating-easier-than-ever/?sh=6f7324e31edf>



Cheating
=
AUTO NULL



Who is Azzam?

<https://linktr.ee/abdulazzamajh>
[ari](#)



**Binus Graduate
Program**

2020 - 2022

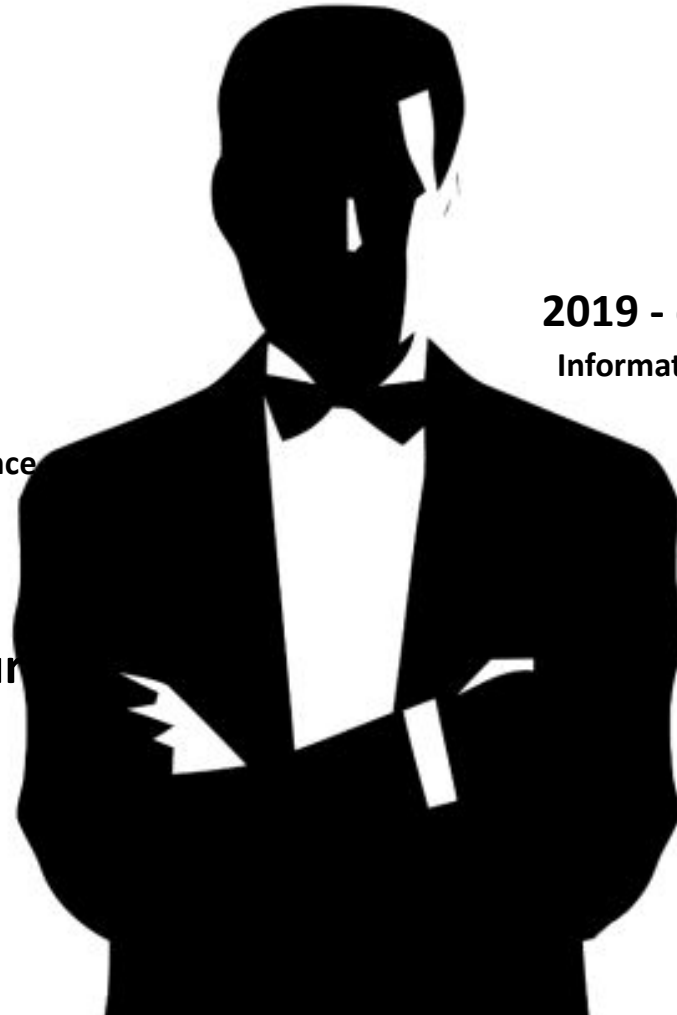
S-2 (MCS) Computer Science
Data Scientist



Universitas Budi Luhur

2014 - 2018

S-1 (BCs) Computer Science
Cybersecurity



BSSN
2019 - current
Informatics Expert



**Garudafood
Group**
2018 - 2019
IT System Development
Officer





Can you understand the following information?

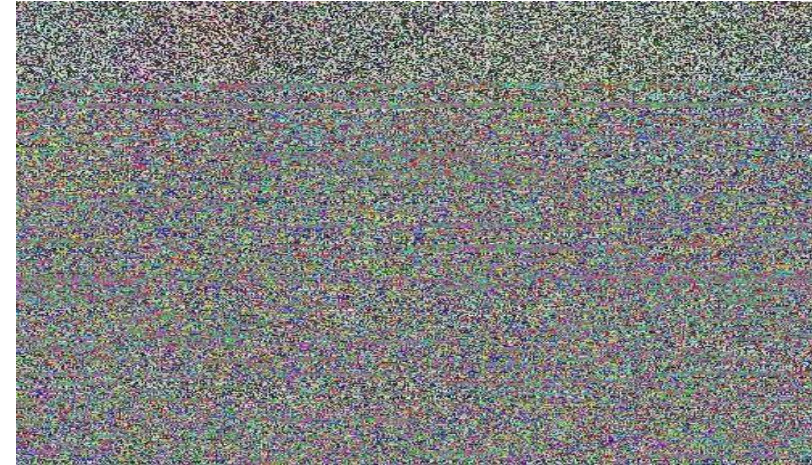
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(1)

If you can't read it, here is the original information:

Ketika saya berjalan-jalan di pantai,
saya menemukan banyak sekali kepiting
yang merangkak menuju laut. Mereka
adalah anak-anak kepiting yang baru
menetas dari dalam pasir. Naluri
mereka mengatakan bahwa laut adalah
tempat kehidupan mereka.

(1)



(2)



(2)



- Information that cannot be understood is called ciphertext.
- On the other hand, information that can be understood is called plaintext.
- Plaintext can be transformed into ciphertext, and vice versa.
- The transformation of plaintext into ciphertext is done using cryptography.



- The word cryptography comes from Greek :
 $\kappa\rho\upsilon\pi\tau\omicron$ (*hidden or secret*) and $\gamma\rho\alpha\phi\eta$ (*writing*)

Its mean “*secret writing*”

Cryptography is the science and art of maintaining the confidentiality of messages by encoding them into a form that cannot be understood.

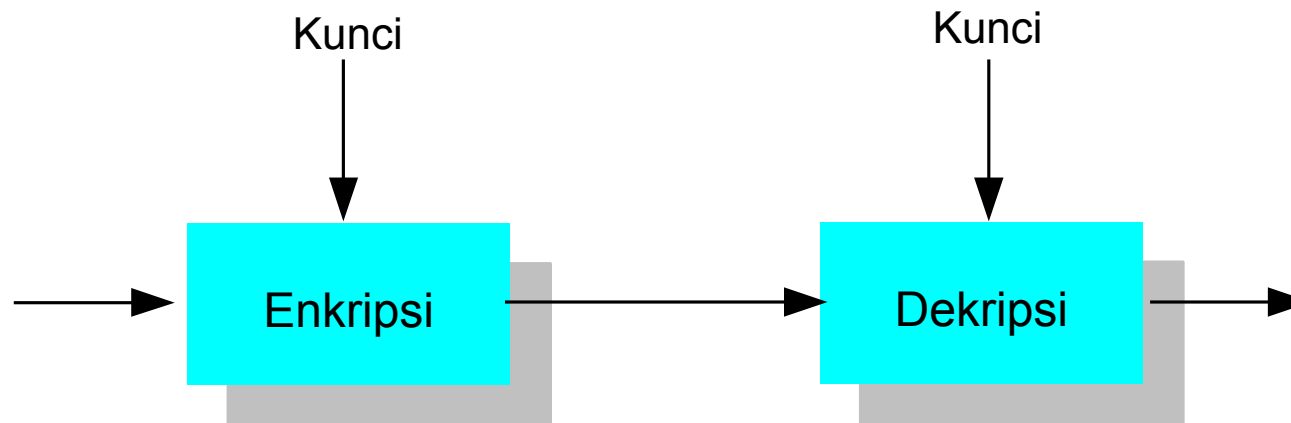
- Cryptography terms in Indonesian:
Science of Cryptography / Ilmu Persandian



Cryptography consists of two processes:

1. Encryption: transformation from plaintext to ciphertext
2. Decryption: transformation from ciphertext to plaintext

Both use secret keys





- Why is cryptography so important today? to maintain the confidentiality of information
 - state confidential data/information
 - organization confidential data/information
 - personal data/information
- In today's digital era, the exchange of information is vulnerable to third-party eavesdropping.
- Cryptography is useful for securing confidential information so that it does not leak to the public.



Tapping



1. Wiretapping



15506-41DG
'Office: 9am' Disc
© JupiterImages

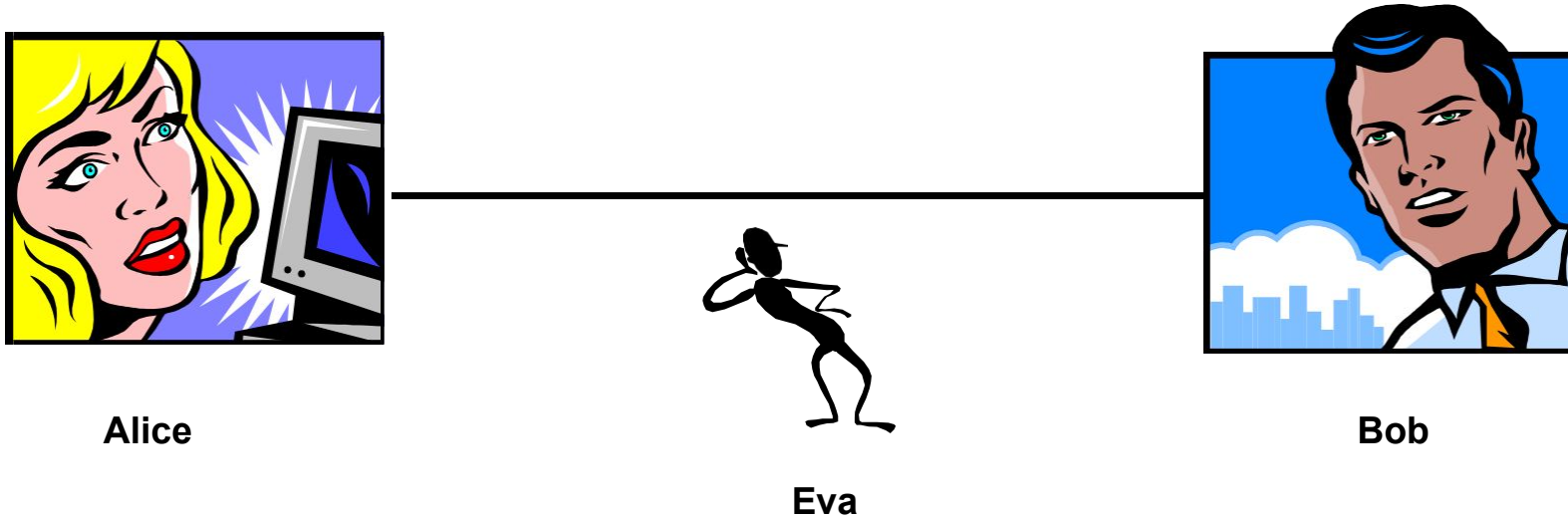
Creatas

www.comstock.com

2. Acoustic Eavesdropping



3. Electromagnetic eavesdropping



With the science and technology of cryptography, information is presented in the form of ciphertext so that third parties cannot understand its meaning.



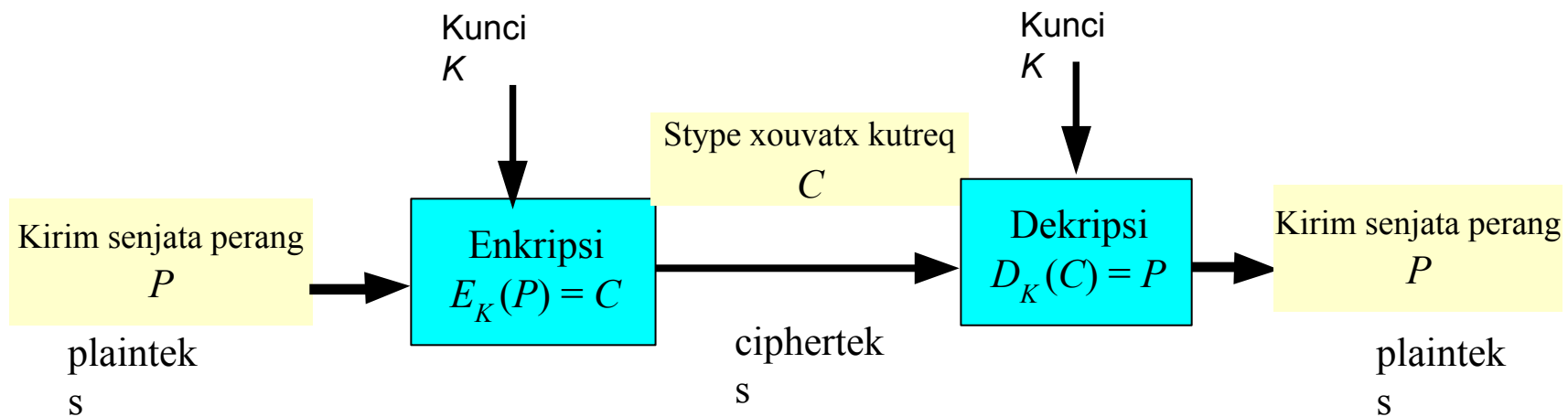
Data Encryption on Motion

- Signals transmitted in a conversation with a mobile phone.
- ATM card PIN numbers transmitted from an ATM machine to a bank computer.
- Credit card PIN numbers in e-commerce transactions on the internet.
- Pay TV broadcasts
- Messages via BlackBerry Messenger (BBM), WhatsApp, Telegram, etc



Cryptographic Elements

1. Cryptographic algorithm (cipher)
Rules for encryption and decryption, or mathematical functions used for encryption and decryption.
2. Key
Parameters used for encryption and decryption transformations. Keys are secret, while cryptographic algorithms are not secret (public)
3. Message
Information that is encrypted/decrypted





Cryptography does not solve privacy problems, but it is a useful tool



THANK YOU