

# ENGLISH FOR IT

## #10 Data storage



Анастасія

Викладач Englishdom

Сертифікати: TOEFL

Досвід викладання - 5 років

[ju:] Hi [hʌɪ] how [haʊ] are

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- The whole process of sending information
- Indirect questions

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# Warm up



An ounce of prevention is worth  
a pound of cure.

BENJAMIN FRANKLIN

# Vocabulary

**Bandwidth** – the maximum amount of data transmitted over an internet connection in a given amount of time

**Cryptography** – is the study of secure communications techniques that allow only the sender and intended recipient of a message to view its contents

**Decrypt** – to convert encoded or encrypted data back to its original form so that it can be read and understood



The modem has **a bandwidth** of 56 kilobits per second.



**Cryptography** allows only the sender and intended recipient of a message to view its contents.



I want you to unlock this program and then **decrypt** the files in its memory.

# Vocabulary

**Decipher** – to convert (a text written in code, or a coded signal) into normal language

**Encrypt** – to convert (information or data) into a code, especially to prevent unauthorized access

**Gibberish** – unintelligible or meaningless speech or writing; nonsense



Their publication was long overdue and the format of the data makes it difficult for the public to **decipher** their meaning.



The software will **encrypt** the message before it is sent.



When non-technical people discuss technical concepts, their words may sound like **gibberish** to IT professionals who understand the jargon.

# Vocabulary

**Impostor** – a person who pretends to be someone else in order to deceive others, especially for fraudulent gain

**Interference** – the action of interfering or the process of being interfered with

**Message digest** – is a fixed size numeric representation of the contents of a message, computed by a hash function



He was **an imposter**, who masqueraded as a client.



I resent his **interference** in my work.



**Message Digest** extensions protect routers against intentional misdirection by malicious users.

# Vocabulary

**Message-authentication code** – is a cryptographic checksum on data that uses a session key to detect both accidental and intentional modifications of the data

**Tamper-proof** – made so that you are able to see if anything has been changed, opened, removed, or damaged

**Tamper with** – to touch or make changes to something that you should not, usually without enough knowledge of how it works



**MACs** use authentication cryptography to verify the legitimacy of data sent through a network or transferred from one person to another.



We must ensure that the system is as **tamper-proof** as possible.



It is a serious crime **to tamper with** computer systems and networks, as it can cause irreversible damage to the information technology infrastructure of organizations.

# Get to know

## Safe data transfer

- Data encryption
- Interference prevention
- User authentication

 **Data encryption** is a security method where information is encoded and can only be accessed or decrypted by a user with the correct encryption key. The two parties engaging in a transaction don't want a third party to be able to read their transmission.

 **Interference prevention** is the interfering signal power a system can tolerate when sharing spectrum with other services.

The receiver of the message should be able to detect whether someone has tampered with it in transit.

 **User authentication** enables organizations to keep their networks secure by permitting only authenticated users or processes to gain access to their protected resources. Both parties must know that they're communicating with each other, not an impostor.

# Get to know

## The whole process of sending information

- The sender takes a document and produces a MAC using a message-digest function.
- The sender encrypts the MAC with their private key.
- The sender attaches the encrypted MAC to the document and encrypts both with the recipient's public key.
- When the recipient receives the document, they can decrypt it with their private key.
- The recipient produces a local copy of the document's MAC using the same message-digest function the sender used.
- The recipient decrypts the sender's MAC using the sender's public key.
- The recipient compares its local copy of the MAC to the sender's unencrypted MAC.

# Get to know

## The whole process of sending information



The sender takes a document and produces a message-authentication code (MAC) using a message digest function.



When the recipient receives the document, they can decrypt it with their private key.



If the two match, then the recipient knows the document hasn't been tampered with and that only the sender could have created the original message.

# Get to know

## Indirect questions

- I wonder
- I want / would like to know
- I can't remember
- I have no idea
- I am sure
- Could you tell me
- Do you know
- Do you remember

+

who, what,  
which, whose,  
when, where,  
how, why

if, whether

+

I  
we  
you  
they  
he  
she  
it  
everybody

+

claim  
engage  
take part  
undermine  
establish  
mention

These phrases are often used to ask a **polite question** and to show your **interest**.

# Get to know

## Direct questions

- What's your name?
- Where are you from?
- What is he doing?
- Where can I sit?
- What is this?
- Do you like flying?

## Indirect questions

- Can I ask you what your name is?
- I was wondering where you are from?
- Do you know what is he doing?
- Could you tell me where can I sit?
- Do you know what this is?
- Could you tell me if you like flying?

You [ju] Hilma [hɪl'mɑː]

# Game 1



Rewrite direct questions into indirect:

1. Where is Accounting department?
2. Has the project meeting started yet?
3. Can you please help me prepare this report?
4. Did you finish the task?
5. Are they coming with us?

You [ju] High [hʌɪ]

# Game 1

## Answers

1. Can you tell me where Accounting department is?
2. Do you know if the project meeting has started yet?
3. Could it be possible for you to help me prepare this report?
4. I wonder whether you finished the report.
5. Do you know if they're coming with us?

You [ju] High [hʌɪ]

# Game 2

Decide what these kinds of computer crime are. Then match the crimes to the short descriptions which follow.

1 Salami Shaving

A Leaving, within a completed program, an illicit program that allows unauthorised – and unknown – entry.

2 Denial of Service attack

B Using another person's identification code or using that person's files before he or she has logged off.

3 Trojan Horse

C Adding concealed instructions to a computer program so that it will still work but will also perform prohibited duties. In other words, it appears to do something useful but actually does something destructive in the background.

4 Trapdoors

D Tricking a user into revealing confidential information such as an access code or a credit-card number.

5 Mail bombing

E Inundating an email address with thousands of messages, thereby slowing or even crashing the server.

6 Software Piracy

F Manipulating programs or data so that small amounts of money are deducted from a large number of transactions or accounts and accumulated elsewhere. The victims are often unaware of the crime because the amount taken from any individual is so small.

7 Piggybacking

G Unauthorised copying of a program for sale or distributing to other users.

8 Phishing

H Swamping a server with large numbers of requests.

9 Defacing

I Redirecting anyone trying to visit a certain site elsewhere.

10 Hijacking

J Changing the information shown on another's person website.

# Game 2

Answers:

- 1 Salami Shaving** → **F** Manipulating programs or data so that small amounts of money are deducted from a large number of transactions or accounts and accumulated elsewhere. The victims are often unaware of the crime because the amount taken from any individual is so small.
- 2 Denial of Service attack** → **H** Swamping a server with large numbers of requests.
- 3 Trojan Horse** → **C** Adding concealed instructions to a computer program so that it will still work but will also perform prohibited duties. In other words, it appears to do something useful but actually does something destructive in the background.
- 4 Trapdoors** → **A** Leaving, within a completed program, an illicit program that allows unauthorised – and unknown – entry.
- 5 Mail bombing** → **E** Inundating an email address with thousands of messages, thereby slowing or even crashing the server.
- 6 Software Piracy** → **G** Unauthorised copying of a program for sale or distributing to other users.
- 7 Piggybacking** → **B** Using another person's identification code or using that person's files before he or she has logged off.
- 8 Phishing** → **D** Tricking a user into revealing confidential information such as an access code or a credit-card number.
- 9 Defacing** → **J** Changing the information shown on another's person website.
- 10 Hijacking** → **I** Redirecting anyone trying to visit a certain site elsewhere.

# Подарунки від Englishdom

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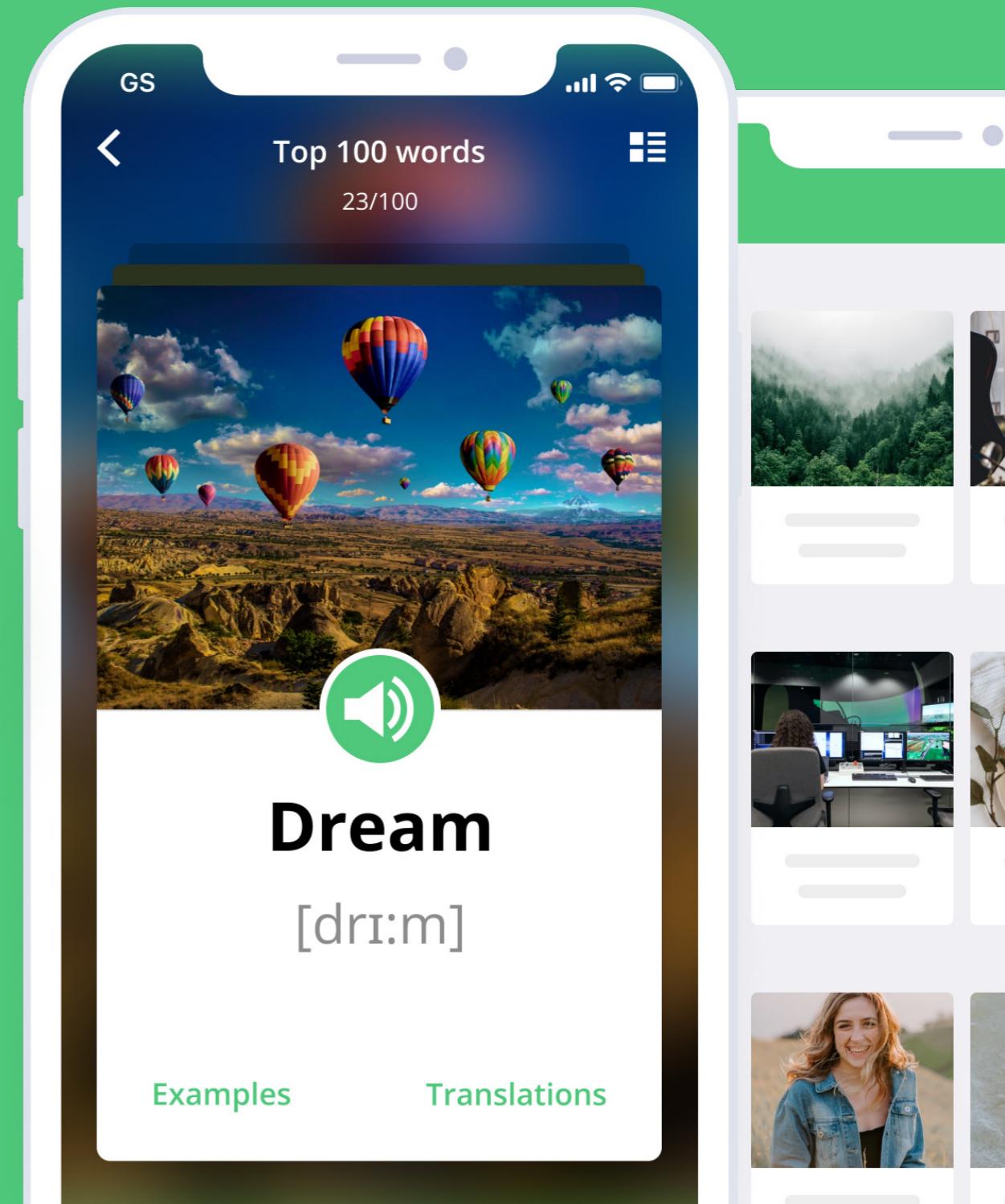
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**БЕЗКОШТОВНИЙ ПРОБНИЙ УРОК**

# Useful links

Набір слів [Storage Terms](#)

Стаття [Choosing the Best Data Storage Solution](#)

Стаття [To Cloud or Not to Cloud: Where Does Your Data Warehouse Belong?](#)

TED-відео [How we can store digital data in DNA](#)

TED-відео [Data security begins on the individual computer](#)

TED-відео [What will a future without secrets look like?](#)

# Thank you for your attention!

Do you have any questions?

Please feel free to send them to our chat!



[j u ] H i [hʌɪ] how [haʊ] are