Cloud

# Cloud computing/ Improving health




Units 11 & 12

# Food for thought

**01**

How can installing new software be difficult?

**02**

How can a business benefit from online services?

**03**

How can technology benefit doctors and hospitals?

**04**

What kind of medical technology do you know about?




cloud computing [N-UNCOUNT-U11] Cloud computing is use of the Internet for software and other resources.

elasticity [N-COUNT-U11] Elasticity is a computer system's ability to gain or lose computer resources as a user sees fit.

IaaS [N-UNCOUNT-U11] IaaS (infrastructure as a service) delivers such elements as servers and software over the Internet.

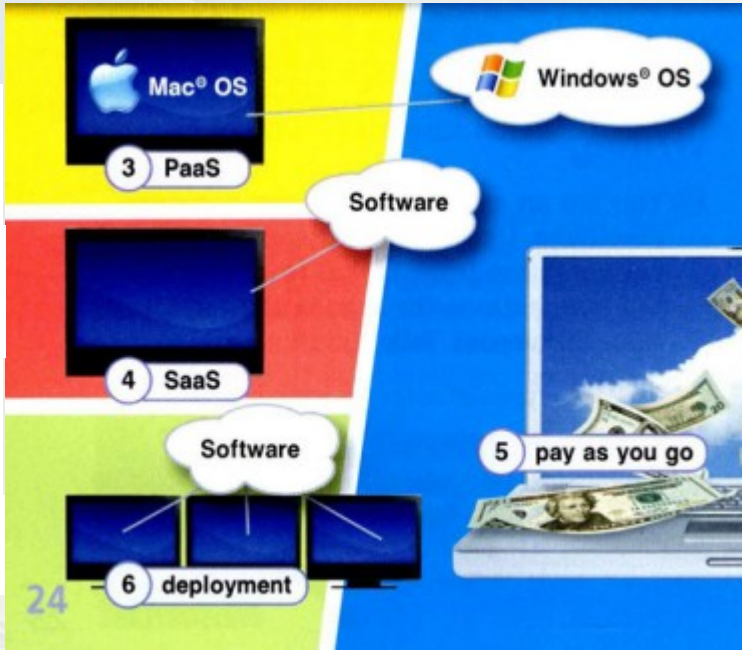


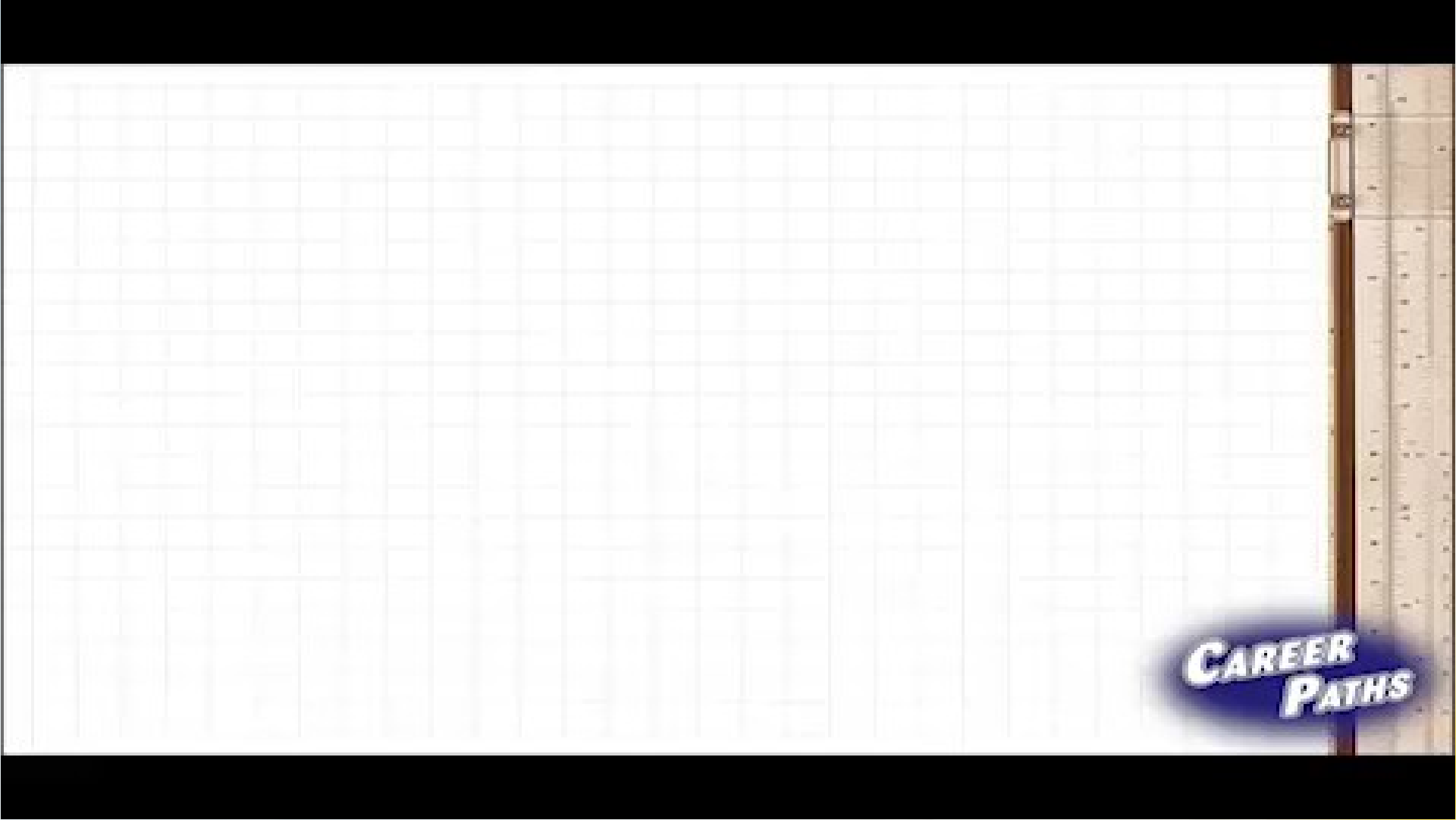

PaaS [N-UNCOUNT-U11] PaaS (platform as a service) is a service where users receive a computing operating system and related components over the Internet.

SaaS [N-UNCOUNT-U11] SaaS (software as a service) is a service where users receive applications over the Internet instead of buying and installing them.

pay as you go [N-UNCOUNT-U11] Pay as you go is a model for payment where customers pay according to how much they use a resource.

deployment [N-UNCOUNT-U11] Deployment is introducing new software into a group of hardware.




CAREER
PATHS

**1** Storing data on a cloud actually means storing it online.

**True** **False**

**2** In the past, emails were only stored on someone's computer.

**True** **False**

**3** Through Gmail® or Yahoo Mail®, you can access your emails anywhere you have an internet connection.

**True** **False**

**4** Your photos can only be stored on the hard disk of your computer.

**True** **False**

**5** Google Docs® allows you to create, edit, and save documents online without having to install any software on your computer.

**True** **False**

**6** Storing your documents on a cloud is safer than storing them on your hard disk.

**True** **False**

**7** With cloud computing you are no longer responsible for updating software.

**True** **False**

**8** Cloud computing is not very popular with big companies.

**True** **False**

**What does it Mean?**

# "Cloud Computing"

by Allison Rule

**Cloud computing** provides many businesses with affordable and customizable services. Yet many avoid this technological resource because they don't understand it. This week's column should explain the concept.

Cloud computing is a lot like **utility computing**. However, cloud computing focuses on using the Internet for software and other resources.

Cloud computing offers more **elasticity** and **scalability** than normal computing. Businesses have access to many resources from both the **private** and **public clouds**. Computers can easily switch to a new OS with **PaaS** (platform as a service). They can also switch to a new server with **IaaS** (infrastructure as a service).

Businesses benefit from the **pay as you go** pricing of cloud computing. And with **SaaS** (software as a service), the **deployment** of new software is almost automatic. It eliminates the need to buy software and install it on every single computer. Furthermore, businesses can monitor their usage and cancel services anytime.

Installing a **CDN** (content delivery network) is a local form of cloud computing that will increase bandwidth. A CDN designates computers on a network for storage. Instead of all computers clogging one server to retrieve data, each user accesses data on a nearby CDN storage computer.

With cloud computing, businesses get inexpensive solutions to their individual needs.

1 What is the advice column about?

A how to set up a CDN

B ways to deploy and cancel SaaS

→ C the benefits of cloud computing

D differences between cloud and utility computing

2 What is the benefit of SaaS?

A It makes a CDN work faster.

B It eliminates elasticity and scalability.

C It increases a server's available bandwidth.

→ D It reduces the time and money lost installing software.

3 What can you infer about the column?

A Its author uses cloud computing.

B It is only available online.

C The last entry was on utility computing.

→ D It helps people understand computer terms.

# Vocabulary

**3 Match the words (1-7) with the definitions (A-G).**

1 B public cloud
2 E cloud computing
3 G utility computing
4 F scalability
5 D PaaS
6 A private cloud
7 C IaaS

**A** Internet services available for a fee
**B** Internet services available to everyone
**C** receiving server functions over the Internet
**D** receiving operating systems over the Internet
**E** use of the Internet for software and other services
**F** potential for a system to change size
**G** computing as a metered service

2022

**4** **Fill in the blanks with the correct words and phrases from the word bank.**

**word BANK**

deployment SaaS pay as you go elasticity CDN

1 Thanks to pay as you go pricing, we're only billed when we use it.

2 Set up a CDN to increase the available bandwidth.

3 Cloud computing increases the elasticity of our computer systems.

4 Use SaaS to avoid installing new programs on each computer.

5 Cloud computing makes deployment of new software much easier.



# Listening

**6** Listen to a conversation between an IT worker and a manager. Mark the following statements as true (T) or false (F).

1 F The company is having software compatibility problems.

2 T The IT worker thinks cloud computing will help the company.

3 F The manager asks the IT worker to set up a CDN first.

**7** Listen again and complete the conversation.

**Manager:** I'm not sure I **1** _____ _____ _____ _____. How exactly would it help us?

**IT Worker:** Remember when we installed all that software a few years back? The ones that had so many **2** _____ _____?

**Manager:** Yeah, that was a real waste of money.

**IT Worker:** Well, with cloud computing we can **3** _____ _____ _____ _____ online. Then we pay for how much we use it.

**Manager:** So, it's a pay as you go type of service? What if the software is bad?

**IT Worker:** We can just cancel the service and switch to something better. **4** _____ is really easy.

**Manager:** I like the sound of that. How can we set it up?

**IT Worker:** I'd **5** _____ _____ _____ _____. It's a set of computers that just store data.

# Improving Health

Computing

PACS [N-UNCOUNT-U12] **PACS** (Picture Archiving and Communications System) is a system that captures and stores medical images from different sources.

microrobotic tweezers [N-COUNT-U12] **Microrobotic tweezers** are very tiny tweezers that allow a doctor to operate in extremely small or delicate areas.

interoperability [N-UNCOUNT-U12] **Interoperability** is the ability to easily send or combine electronic health data from one system into another.

EMM [N-UNCOUNT-U12] **EMM** (Electronic Materials Management) is a system that helps hospitals keep track of medications and medical supplies.

EHR [N-COUNT-U12] An **EHR** (Electronic Health Record) is a computerized version of a patient's health record.

CPOE [N-UNCOUNT-U12] **CPOE** (Computerized Provider Order Entry) is a system that lets a doctor fill out electronic orders.

CDSS [N-UNCOUNT-U12] **CDSS** (Clinical Decision Support System) is a system that helps doctors diagnose problems. It also suggests treatment options.

bar coding [N-UNCOUNT-U12] **Bar coding** is a system in which doctors scan medicines and match them to patients.

ADM [N-COUNT-U12] An **ADM** (Automated Dispensing Machine) is a hospital machine that measures out specific amounts of medication into containers.







statements as true (T) or false (F)

1 T CPOE systems help to reduce mistakes related to handwriting.

2 F Doctors use optic scanners to measure and release precise doses.

3 F The lab-on-a-chip has saved money and lives.

# HEALTHCARE 2.0 *New Advances in Medical Technology*

Health technology is a rapidly growing field. New advances aim to improve care and reduce costs.

The **EHR** (Electronic Health Record) is one technology already in place. EHRs let doctors access patient data easily and efficiently. They also enable **CDSS** (Clinical Decision Support System) functions. These alert doctors to harmful drug interactions. EHRs can also store data from **PACS** (Picture Archiving and Communications System). **Interoperability** is a key aspect of EHRs. It lets physicians in different clinics easily share records.

Other technology has also become popular. Many doctors use **CPOE** (Computerized Provider Order Entry) systems. These reduce handwriting and communication errors. **Bar coding** is another common practice. Here, doctors use **optic scanners** to match patients to their medicines. They often use **ADMs** (Automated Dispensing Machines). These dispense drug dosages, which can reduce dosage errors. Many hospitals use **EMM** (Electronic Materials Management) systems. These keep track of drugs and other medical supplies.

Some technology is still in development. With the **lab-on-a-chip**, doctors will not have to send cultures to labs for analysis. **Micro robotic tweezers** will let doctors operate in very small areas. **Implanted microchips** will measure and release drug dosages precisely.

implanted microchip | EHR | lab-on-a-chip | PACS | interoperability | microrobotic tweezers | bar coding

**A** a computerized version of a patient's health record — EHR

**B** a device that holds cells and fluid that a doctor can analyze easily — lab-on-a-chip

**C** a system in which doctors scan medicines and match them to patients — bar coding

**D** very tiny tools that let a doctor operate in very small areas — macrobotic tweezers

**E** a tiny device in a person's body that releases medicine — implanted microchip

**F** the ability to send electronic health data between systems — interoperability

**G** a system that stores medical images from different sources — PACS

**4 Place a (✓) next to the response that answers the question.**

1 Have you used **CPOE** before?

A ___ Yes, I've used it to share records with doctors.

B ✓ Yes, I've used it to fill out a prescription.

2 Why is **CDSS** helpful?

A ✓ It helps doctors diagnose and treat patients.

B ___ It allows doctors to access patient data easily.

3 What is this **optic scanner** for?

A ✓ You can use it to read and record information on medicine labels.

B ___ You can use it to measure out specific amounts of a drug.

4 Are you familiar with **ADMs**?

A ___ Yes, I've used them to operate in very small areas.

B ✓ Yes, I've used them to measure out medications.

5 Does this hospital use **EMM**?

A ___ Yes, we use it to analyze cells and fluid easily.

B ✓ Yes, we use it to keep track of medicines and supplies.





Cloud

# Listening

**6** **Listen to a conversation between an IT worker and a doctor. Mark the following statements as true (T) or false (F).**

1 F CPOE reduces medication mix-ups.

2 T The doctor has not used the CPOE system.

3 T The optic scanner records the ID number of a drug.

**7** **Listen again and complete the conversation.**

**IT worker:** Hello Dr. Samson. I got your message about the new electronic systems.

**Doctor:** Yes, I could **1** _____ _____ _____ understanding them.

**IT worker:** Well, we just installed a **2** _____ system and a **3** _____ _____ system.

**Doctor:** What's the CPOE system for?

**IT worker:** It's kind of like an **4** _____ _____ form. It lets you fill out prescription orders.

**Doctor:** **5** _____ _____ do I use it?

**IT worker:** Well, in this box, you type in the patient's **6** _____ _____ _____. Then just click send.

**Doctor:** Okay. That sounds **7** _____ _____.

# Questions and answer

## Question

Mercury's name has nothing to do with the liquid metal, since Mercury was named after the Roman messenger god

## Answer

Venus is the second planet from the Sun. It’s terribly hot, even hotter than Mercury, and its atmosphere is extremely poisonous

Computing

“This is a quote, words full of wisdom that someone important said and can make the reader get inspired.”

—Someone Famous

# Desktop mockup

Cloud

You can replace the image on the screen with your own work. Just right-click on it and select “Replace image”



# Thanks!



Cloud

Do you have any questions?

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