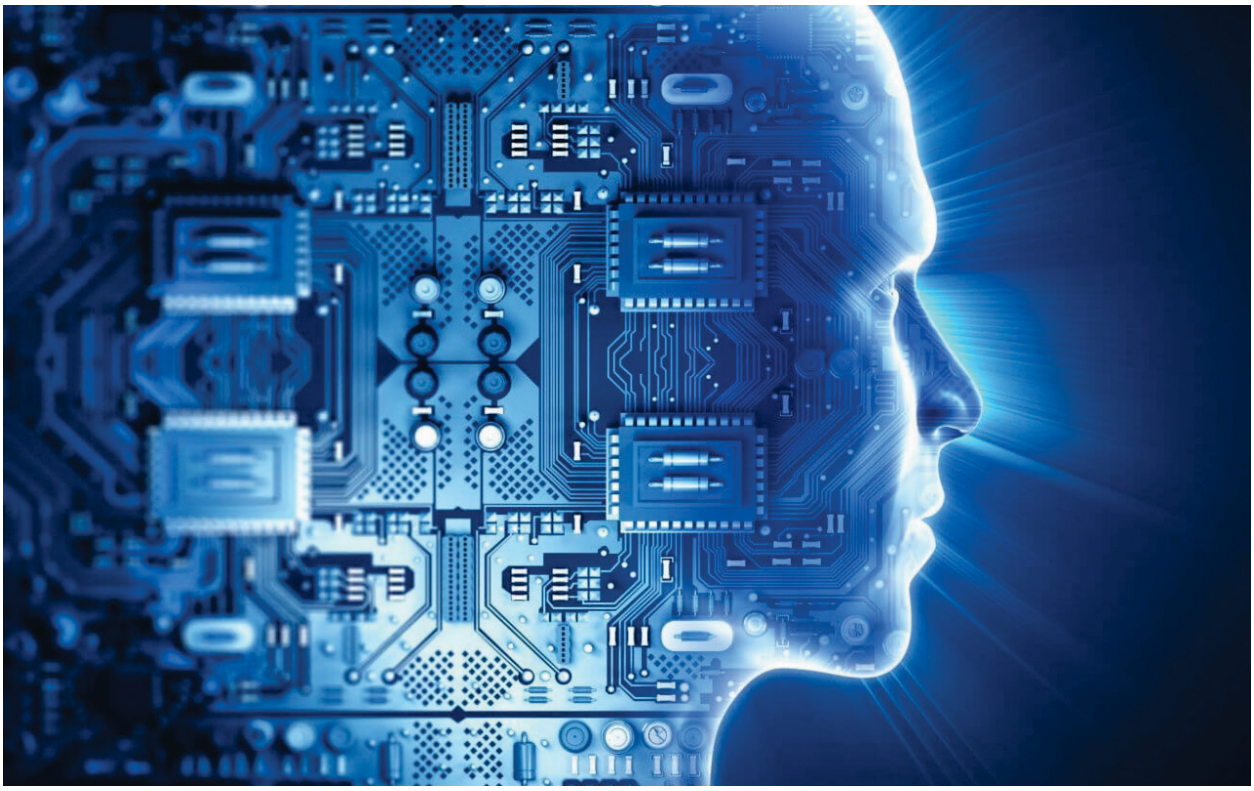
INFORMATION TECHNOLOGY

Collection of Exercises



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УНИВЕРСИТЕТСКО ИЗДАТЕЛСТВО
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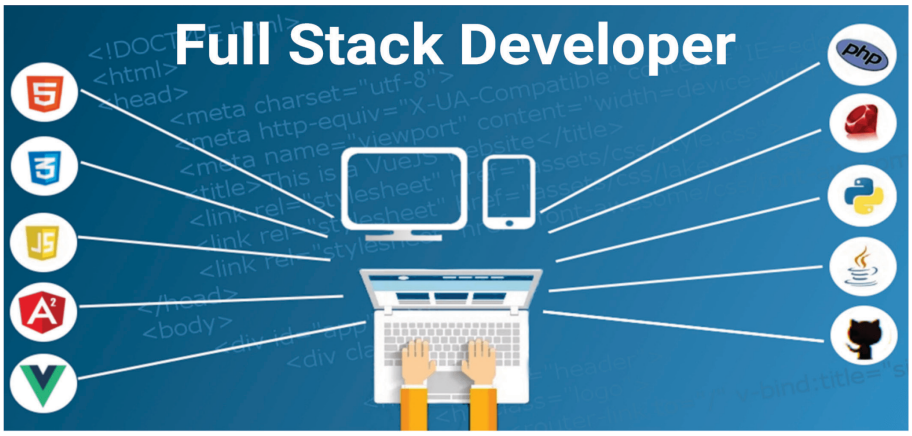
PROGRAMMING LANGUAGES



1. Read the text about the most popular programming languages and choose whether the statements below are TRUE or FALSE.

Java

Java uses a compiler, and is an object-oriented language released in 1995 by Sun Microsystems. Java is the number one programming language today for many reasons. First, it is a well-organized language with a strong library of reusable software components. Second, programs written in Java can run on many different computer architectures and operating systems because of the use of the JVM (Java virtual machine). Sometimes this is referred to as code portability or even WORA (write once, run anywhere). Third, Java is the language most likely to be taught in university computer science classes. A lot of computer science theory books written in the past decade use Java in the code examples. So learning Java syntax is a good idea even if you never actually code in it.

Java Strengths: WORA, popularity

Java Weaknesses: Slower than natively compiled languages

C

C is a compiled, procedural language developed in 1972 by Dennis Ritchie for use in the UNIX operating system. Although designed to be portable in nature, C programs must be specifically compiled for computers with different architectures and operating systems. This helps make them lightning fast. Although C is a relatively old language, it is still widely used for system programming, writing other programming languages, and in embedded systems.

Strengths: Speed

Weaknesses: Memory management can be difficult to master

C++

C++ is a compiled, multi-paradigm language written as an update to C in 1979 by Bjarne Stroustrup. It attempts to be backwards-compatible with C and brings object-orientation, which helps in larger projects. Despite its age, C++ is used to create a wide array of applications from games to office suites.

Strengths: Speed

Weaknesses: C++ is older and considered clumsier than newer object-oriented languages such as Java or C#.

PHP

PHP uses a run-time interpreter), and is a multi-paradigm language originally developed in 1996 by Rasmus Lerdorf to create dynamic web pages. At first it was not even a real programming language, but over time it eventually grew into a fully featured object-oriented programming language. Although PHP has been much criticized in the past for being a bit sloppy and insecure, it's been pretty good since version 5 came out in 2004. It's hard to argue with success. Today, PHP is the most popular language used to write web applications.

Strengths: Web programming, good documentation

Weaknesses: Inconsistent syntax, too many ways to do the same thing, a history of bizarre security decisions

VB (or Visual Basic) Visual Basic is an interpreted, multi-paradigm language developed by Microsoft Corporation for the Windows platform. It has been evolving over the years and is seen as a direct descendant of Microsoft's old BASIC from the 1970's. Visual Basic is a good language for scripting Windows applications that do not need the power and speed of C#.

Strengths: None.

Weaknesses: Only runs in Windows

Python

Python is an interpreted, multi-paradigm programming language written by Guido van Rossum in the late 1980's and intended for general programming purposes. Python was not named after the snake but actually after the Monty Python comedy group. Python is characterized by its use of indentation for readability and its encouragement for elegant code by making developers do similar things in similar ways. Python is used as the main programming choice of both Google and Ubuntu.

Strengths: Excellent readability and overall philosophy

Weaknesses: None

C#

C# is a compiled, object-oriented language written by Microsoft. It is an open specification, but rarely seen on any non-Windows platform. C# was conceived as Microsoft's premium language in its .NET Framework. It is very similar to Java in both syntax and nature.

Strengths: Powerful and pretty fast

Weaknesses: Only really suitable for Windows

JavaScript

JavaScript is an interpreted, multi-paradigm language. A very strange one too. Despite its name, it has nothing whatsoever to do with Java. You will rarely, if ever, see this language outside of a web browser. It is basically a language meant to script behaviors in web browsers and used for things such as web form validation and AJAX style web applications. The trend in the future seems to be building more and more complex applications in JavaScript, even simple online games and office suites. The success of this trend will depend upon advancements in the speed of a browser's JavaScript interpreter. If you want to be correct, the real name of this programming language is ECMAscript, although almost nobody actually calls it this.

Strengths: it's the only reliable way to do client-side web programming

Weaknesses: it's only really useful in a web browser

Perl

Perl is an interpreted, multi-paradigm language written by Larry Wall in 1986. It is characterized by a somewhat disorganized and scary-looking syntax which only makes sense to other PERL programmers ;) However, a lot of veteran programmers love it and use it every day as their primary language. 10 years ago, Perl was more popular than it is today. What happened? A lot of newer programmers and even old Perl programmers (such as myself) have switched to other languages such as PHP, Python, and Ruby. Perl is perhaps still the best language for text processing and system administration scripting. I personally do not recommend it however as a primary programming language.

Strengths: text processing and system administration

Weaknesses: strange syntax, and perhaps too many ways to do the same thing

Ruby

Ruby is an interpreted, object-oriented language written by Yukihiro Matsumoto around 1995. It is one of the most object-oriented languages in the world. Everything is an object in Ruby, even letters and numbers can have method calls. It's a great language to learn if you love objects. The only negative is that its love of object-orientation makes it a bit slow, even for an interpreted language.

Strengths: Perhaps the world's most object-oriented language

Weaknesses: its superior object model comes at a price... namely speed

Source: www.english4it.com

Statements

1. Ruby, C++ and C# are good examples of object-orientated languages.	**True**	**False**
2. Virtual machines enable code portability, for example with the use of JVM.	**True**	**False**
3. Visual Basic, Python and Perl are all interpreted, multi-paradigm languages.	**True**	**False**

2. Find synonyms of the following words in the text:

1. **Satisfying**
2. **Finally**
3. **Immediately**
4. **Be called**
5. **Quick as a flash**
6. **To learn**
7. **A range**
8. **Awkward**
9. **Chaotic**
10. **Unstable**
11. **Strange**
12. **To progress**
13. **To develop**
14. **Progress**

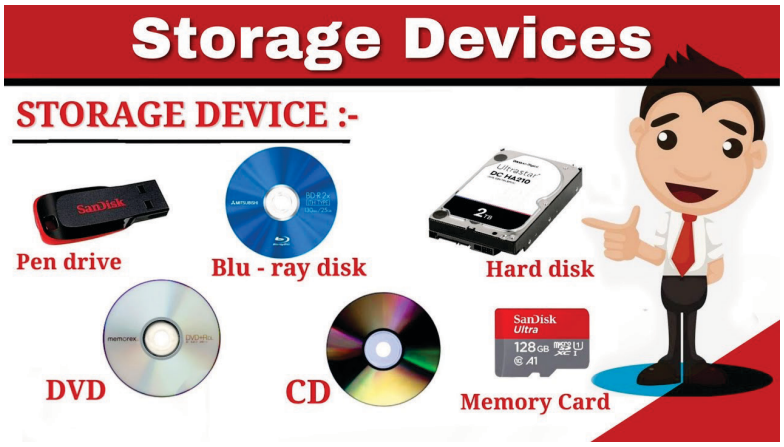
3. Compare Java and C languages using up to 180 words and linkers of comparison and contrast.

Comparison	Contrast
Similarly	**Whereas**
Likewise	**While**
Equally	**Unlike + NOUN**
Like + NOUN	**Conversely**
As with	**By/in contrast**
In similar way	**In contrast to + NOUN**
In comparison to + NOUN	**On the contrary**
Comparative degrees of adjectives	**On the other hand**

4. Watch the video comparing C, C++ and JAVA (*Difference Between C, C++ and Java*). Fill in the table below.

Criteria	C	C++	JAVA
1. Programming paradigm			
2. Origin			
3. Developer (year & name)			
4. Translator			
5. Platform dependency			
6. Code execution			
7. Approach			
8. File generation			
9. Pre-processor directives			
10. Keywords			
11. Datatypes			
12. Inheritance			
13. Overloading			
14. Pointers			
15. Memory allocation			
16. Exception handling			
17. Templates			
18. Destructors			
19. Multithreading / Interfaces			
20. Database connectivity			
21. Storage classes			

STORAGE DEVICES



1. Read the text about memory and storage and choose whether the statements below are TRUE or FALSE.

The two terms “MEMORY” and “STORAGE” are often used interchangeably, so it is important to understand the key differences. Computer memory needs to be quick. It is constantly feeding the CPU with data to process. Since nobody likes to wait for a computer, high-quality computers will have fast processors with lots of quick memory. This type of memory is commonly known as RAM. It is volatile, which means that the actual data disappears when the computer loses power.

Because memory needs to be much faster than storage, it is rather more expensive than storage per GB. A typical desktop computer today (in 2016) has between 2GB and 32GB of memory running at speeds of anywhere from 1.2 GHZ to 3.2 GHZ. Speeds tend to go up about 10% every two years.

If you are a gamer, video editor, or physics geek, you may be aware of video memory. It is special RAM which is even faster and more expensive than normal system RAM. This RAM is reserved only for the graphics and is thus kept separate from the main system RAM, which sits on the motherboard close to the CPU. A typical dedicated video card will have anywhere between 2GB and 12 GB of dedicated RAM.

But of course computers do not process all the data they have at once. They also need to save some data for long term use. This is where storage comes in. Think of all the video files, mp3s, photos, and documents on your PC. These files are not always being processed by the CPU. They are mostly just hanging around waiting to be used at some point. Storage does not need to be as quick as memory, but there does need to be a lot more of it. And storage of course needs to be non-volatile, meaning it will not get erased when you power off or restart your computer. These are the two key differences between memory and storage.... speed and volatility.

Storage today comes in many different types including semiconductor storage, magnetic storage, and optical storage. A typical computer today comes with anywhere between 128GB to 2TB of storage. Low

end computers normally come with a magnetic hard disk drive which reads data at around 75 to 200 MB/sec. These devices use rotating, magnetically-charged platters to store data. Hard disk drives are still popular because they can store a lot of data with relatively quick access times very cheaply. Other examples of magnetic storage devices include the tape drive and diskette, both of which are obsolete. These dinosaurs of storage were painfully slow and prone to data loss with no warning.

Another type of storage is network storage, typically referred to as a SAN. This storage is usually found in a datacenter. This type of storage goes by other names such as "cloud storage" or "network drive". It is of course highly limited by network speeds. If you are offline and need a file then you are out of luck. That is why it's always a good idea to get as much storage on your PC as you can afford.

In the future all magnetic storage types will become obsolete. They will soon all be replaced by SSDs (solid state disks) using semiconductor technology. SSDs have 3 key advantages over magnetic storage devices: speed, lack of moving parts, and low power consumption. This makes them ideal for laptops where battery life and durability are huge issues. SSDs are fast as well, and can read data at around 200MB to 800 MB per second. Unfortunately SSDs are currently more expensive than magnetic storage per GB, but this should change soon.

Optical storage is another technology which is quickly becoming legacy. Very popular in the 90's and early 2000's, optical storage works by a laser either burning or reading data off a plastic disc coated with various types of light sensitive materials. Due to reliability and speed limitations, optical storage is not used as a primary means of data storage. It is (or increasingly was) used mostly to affordably deliver large datasets like movies, games, and operating systems. In case you still don't understand what optical storage is, typical examples are DVD or Blu-Ray drives.

Well, that about covers it for the current state of memory and storage. But there are some gray areas and exceptions as always, such as ROMs and EPROMs (Erasable programmable read-only memory) which are somewhere in between memory and storage. Embedded systems, BIOS and older video game machines used these for various reasons, mainly copy protection and cost.

What about the future? Expect a gradual convergence where there is no longer a need for both storage and memory in PCs. Some new technology such as quantum memory may arrive which has the advantages of both memory and storage. Until that time arrives, always buy a PC with the most memory and storage you can afford. Computer companies typically charge you a lot more for PCs with a decent amount of RAM and fast storage. Why? Because they know without it, your computer will be slow and completely full very quickly, forcing you to upgrade or buy into their cloud storage solutions like Apple's iCloud, and Microsoft's OneDrive.

(*Source:* *www.english4it.com*)

Statements

1. Video memory is a volatile, especially fast type of RAM.	**True**	**False**
2. A hard disk drive (HDD) is a type of semiconductor storage.	**True**	**False**
3. Tape drives and diskettes are rather outdated magnetic storage devices.	**True**	**False**

2. Find synonyms of the following words in the text:

1. **nerd**
2. **energy-dependent**
3. **to turn off**
4. **outdated**
5. **liable to**
6. **merging**
7. **progress**

3. Watch the video about quantum computers (*Quantum Computers Explained – Limits of Human technology*) and answer the questions below?

1. What does a computer chip contain? –
2. What is the role of a transistor in a computer? –
3. What is the smallest unit of info in normal computers? –
4. What is the smallest unit of info in quantum computers? –
5. What is a qubit? –
6. Give examples of such systems.
7. Does a qubit have to be just one state? –
8. How this process is referred to as? –
9. What happens if the qubit is unobserved? –
10. What happens when you measure it? –
11. How many combination could we have with 4 classical bits? –

12 How many of them can you use? –

13. How many combinations can we use at once with 4 qubits? –
14. What does a logic gate do? –
15. What does a quantum gate do? –
16. Which areas are quantum computers superior in? –
17. Will quantum computers be a revolution for humanity? –

COMMUNICATION

1. Read the text about mobile phones and choose whether the statements below are TRUE or FALSE.

1. Finnish parents consider that a mobile phone is a superfluous object.	**True**	**False**
2. They don't mind paying the extra costs these objects represent.	**True**	**False**
3. Sometimes teachers allow students to use their mobiles in class.	**True**	**False**
4. Teenagers never use their devices for sending e-messages.	**True**	**False**
5. This kind of communication is causing a transformation of the normal language of communication.	**True**	**False**

2. Explain

a) Why Finnish parents consider it important for their children to have a mobile phone.

b) Why sometimes teenagers would rather not have them.

c) What students do when they are allowed to use their mobiles in class.

d) What they use their e-mail for.

e) What kind of language they use when they send their messages through e-mail.

The Finns may be more diligent about preparing their kids for the future than most nationalities. But they do seem to do it with unusual degree of conviction about what´s going to be important-one big reason they buy their teenagers mobile phones and foot the monthly bills about 40 dollars. A study by the Information Society Research Center at the University of Tampere (sponsored by wireless operator Sonera, Nokia and Tekes, the government agency that promotes technology and doles out development capital) concludes that parents see a mobile phone as a " key to the information society".

Keeping tabs on the little rascals may be just a supplementary benefit-and maybe not even a benefit, if Heidi, a 15 year-old in Leena Nordman` s English class, is to be believed. "My mom` s always calling me, " she says, rolling her eyes.

When Norman a Physical Education teacher tells her students that they` re allowed to get their phones out one spring day, they all proudly do so. Some of the boys immediately start playing games built into the small, colorful devices. And Heidi and a few kids are eager to tell other people about their obsession. First of all, the thing is not a phone.

It´ s a kannykka (a little hand), a luuri (a transmitter) and sometimes a kapula (a stick).

Or just a Nokia.

Most of these fairly well-off kids have computers at home, and enjoy visiting chat houses. But like other Finnish teens, they really get a charge of the relatively cumbersome e-mail capability available on their phones. There´ s a 161 character limit, the inconvenience of a telephone keypad- and the thrill of gossiping, flirting or just bombarding each other with smiley faces, all for less than the cost of a voice call.

Eija-liisa Kasesniemi, who ran the Information Society Research Center study, says the kids have their own vocabulary here, too. Is mobile-text-messaging just for kids? Phone

Company Radiolinja might have thought so when it debuted a service shortly before Christmas one year.

But when half of Helsinki realized that last-minute electronic cards are more convenient than paper ones- and crashed the network-Radiolinja understood that it had something bigger on its hands.

Source: Newsweek, May 1999

3. Find synonyms of the following words in the text:

1. **To pay**
2. **To be excited**
3. **To provide**
4. **To keep track of**
5. **Additional**
6. **Sensation**

4. Time for discussion

a) Mobile phones kill real life communication. b) Mobile phones are addictive. c) Students mustn't use mobile phones at school. d) Buying expensive mobile phones is a waste of money. e) Using too much mobile phones is bad for our health.	**I strongly believe** **As for me** **Frankly speaking** **My point is**

5. Fill in the gaps.

A new study from Stanford University has investigated the (1) ____ on our health of extended spells of video-conferencing. Researcher and communications expert Jeremy Bailenson (2) ____ the phenomenon "Zoom fatigue," but acknowledged the condition is not (3) ____ to just that platform. In the past year, most of us have spent extended periods of time online using an array of video-conferencing platforms. The coronavirus pandemic has (4) ____ tools like Zoom, FaceTime, Skype and Google Hangouts have been the only way we have been able to see and chat to (5) ____ ones. Many companies have relied heavily (6) ____ video-conferencing for meetings, and educators have used them to teach their lessons online.

Mr Bailenson (7) ____ several factors that make video-conferencing so fatigue-inducing. He said it is not just tiredness and eye-(8) ____ from staring at a computer screen for hours and hours. It is also brought about by "cognitive overload" and feeling pressure to be (9) ____ switched on. We constantly feel we need to be in touch with friends or available for bosses, customers or students. Bailenson cautioned this leads to burnout and stress and can (10) ____ your chance of developing moderate to (11) ____ depression. He said this anxiety can adversely affect your self-confidence. This is because of the large number of faces (12) ____ at you in meetings. Bailenson likens this to the stresses of public speaking.

1.	(a) infects	(b) affects	(c) effects	(d) reflects
2.	(a) dubbed	(b) daubed	(c) dabbled	(d) dibbed
3.	(a) restricted	(b) restriction	(c) restricts	(d) restrict
4.	(a) meant	(b) mean	(c) meaning	(d) means
5.	(a) loves	b) loved	(c) loving	(d) lover
6.	(a) in	(b) at	(c) to	(d) on
7.	(a) in-lined	(b) aligned	(c) outlined	(d) lined
8.	(a) stem	(b) stain	(c) steam	(d) strain
9.	(a) perpetually	(b) perpetual	(c) perpetrate	(d) perpetuity
10.	(a) higher	(b) heighten	(c) heathen	(d) heather
11.	(a) severs	(b) severe	(c) sever	(d) several
12.	(a) starring	(b) starry	(c) staring	(d) storing

6. Read the text about video conferencing and choose whether the statements below are TRUE or FALSE.

1.	Oxford University conducted a study on video-conferencing.	**T / F**
2.	A researcher called tiredness while online "Zoom fatigue".	**T / F**
3.	The article says all of us have spent a long time online in the past year.	**T / F**
4.	Educators said they resent having to use video-conferencing to teach.	**T / F**
5.	The researcher outlined seven reasons why video-conferencing is bad.	**T / F**
6.	The researcher said fatigue can come because of cognitive overload.	**T / F**
7.	The researcher said people feel pressure to be constantly online.	**T / F**
8.	The researcher likened video-conferencing to speaking in public.	**T / F**

7. Answer the questions.

1) At what university does the researcher who did the research work?
a) Oxford University
b) Stanford University
c) Tokyo University
d) Singapore University

2) What did the researcher dub a phenomenon?
a) Video-fatiguing
b) Cyber-exhaustion
c) Zoom fatigue
d) Chat-nap

3) Where did the researcher say we have spent extended periods of time?
a) in our living rooms
b) in lockdown
c) on holiday
d) online

4) Who does the article say we have chatted to using online tools?
a) penfriends
b) loved ones
c) children
d) grandparents

5) Who has relied heavily on video-conferencing?
a) companies
b) Zoom
c) politicians
d) journalists

6) How many factors did the researcher outline?
a) several
b) seven
c) seventy
d) seventeen

7) What brings about fatigue besides tiredness and eye-strain?
a) intelligence
b) depression
c) shopping addiction
d) cognitive overload

8) What does the article say we are under perpetual pressure to do?
a) research
b) write emails
c) switched on
d) watch videos

9) What does burnout and stress heighten the chances of developing?
a) a bad back
b) headaches
c) Internet addictions
d) moderate to severe depression

10) What did the researcher liken video-conferencing to?
a) movie making
b) public speaking
c) karaoke
d) science fiction

8. Match the following synonyms from the article.

1. investigated	a) happening
2. spells	b) acute
3. phenomenon	c) always
4. array	d) examined
5. relied	e) warned
6. outlined	f) range
7. perpetually	g) gazing
8. cautioned	h) periods of time
9. severe	i) depended
10. staring	j) defined

9. Phrase match (sometimes more than one choice is possible).

1. extended spells	a) severe depression
2. dubbed the phenomenon	b) on video-conferencing
3. the condition is not restricted	c) inducing
4. tools	d) to just that platform
5. relied heavily	e) your self-confidence
6. fatigue-	f) of video-conferencing
7. It is also brought about by	g) touch with friends
8. we need to be in	h) "cognitive overload"
9. moderate to	i) "Zoom fatigue"
10. this anxiety can adversely affect	j) like Zoom

10. Academic writing - 180-200 words.

"Video-conferencing is better than face-to-face"

SOCIAL NETWORKING

1. Read the text and find out

a) four things teens usually use social media for.

b) the effects of night-time social media use on teens.

2. Complete the sentences according to the text.

a) June kept away from a couple of social networks since _____.

b) June's sister would ask June for her phone when _____.

c) It is very important for her sister to reply to every message at night so that _____.

d) She would accuse June of messing up her social life whenever _____.

e) For teens not being able to reply instantly to a message _____.

f) Some teens are so obsessed with social media that _____.

3. TRUE or FALSE?

a) June doesn't understand her sister's obsession with social media at times.

b) Teenagers feel pressured to be constantly online.

c) June simply hated it when she was unable to log on for a week.

The digital landscape has put increased pressure on teenagers today, and we feel it. There are so many social media channels: Facebook, Twitter, Instagram, Snapchat, Tumblr, you name it. I made a conscious decision to avoid Snapchat and Instagram because of the social pressure I saw them putting on my 14-year-old little sister. If my mum turned off the WiFi at 11pm, my sister would beg me to turn my phone into a hotspot[1]. She always needed to load her Snapchat stories one more time, or to reply to a message that had come in two minutes ago because she didn't want her friend to feel ignored. If I refused, saying she could respond in the morning, I'd get the "You're ruining my social life" speech. Even as a teenager as well, I sometimes find this craze a little baffling.

A new study has found that teenagers who engage with social media during the night could be damaging their sleep and increasing their risk of anxiety and depression. Teenagers spoke about the pressure they felt to make themselves available 24/7 and the resulting anxiety if they did not respond immediately to texts or posts. Teens are so emotionally invested in social media that a fifth of secondary school pupils will wake up at night and log on just to make sure they don't miss out. Perhaps the worst thing about this is that teenagers need more sleep than adults do, so night-time social media use could be detrimental to their health. A lack of sleep can make teenagers tired, irritable, and depressed.

During the summer holidays, I lost my phone. And for the week that I was phoneless, it felt like a disaster. I love my phone. It gives me quick access to information and allows me to be constantly looped in with my friends, to know exactly what is going on in their lives. So when I didn't have my phone for a week, I felt a slight sense of FOMO, or if you're not up to speed with the lingo, fear of missing out. By the end of the week, I'd got used to not having a phone and I'd quite enjoyed the break from social media. But there was still a lingering sense of sadness at the back of my mind that there would be conversations I had missed, messages that had been sent, funny videos shared and night-time chats that I would probably never get to see.

4. Find words in the text which mean the same as

a) greater than before (paragraph 1)

b) exaggerated enthusiasm (paragraph 1)

c) harmful (paragraph 2)

d) easily annoyed (paragraph 2)

e) connected with (paragraph 3)

5. Use the words below to complete the text.

available…..control……posted…..public…..forgotten…..harmless…..filter…..attractive

Social networking sites encourage us to be more (a) about our personal lives. Because intimate details of our lives can be (b) so easily, we often don't use the (c) we might normally employ when talking about our private lives. What's more, the things we post remain (d) indefinitely. While at one moment a photo of friends doing shots at a party may seem (e), the image may appear less (f) in the context of an employer doing a background check. While most sites allow their users to (g) who sees the things they've posted, such limitations are often (h).

6. Complete the texts with words and expressions below.

TEXT A

device	**delete**	**up-to-date**	**out-of-date**	**downloaded**	**go online**
do a search	**user-friendly**	**store information**	**apps**		

1. A: What's this little _____?
   B: It's a memory stick for the computer. I use it to _____.
2. A: I'm afraid that the information in this book about Finland is _____.
   B: That's OK. Let's _____ and _____ to look up the latest information.
3. A: Oh, no! I _____ the wrong _____. I don't want these games.
   B: No problem. It's easy to _____ them.
4. A: I really want a new mp4 player. I got mine three years ago. It's not _____.
   B: But it still works very well. Anyway, I think the older ones are more _____ than the newer models.

TEXT B

post updates	**solve a problem**	**post comments**	**caught on**	**uploaded photos**
went online	**accounts**	**check messages**	**social networking sires**	**kept in touch**

In 2006, Facebook became available to anyone 13 years old and up. It 1. _____ very quickly all over the world, especially among teenagers. Whenever they 2. _____, they took the time to 3. _____ on their lives and to 4. _____ from friends. They also 5. _____ and visited their friends' Facebook pages in order to 6. _____. However, Facebook and similar 7. _____ may be losing popularity among teens. Only 25% of teens in a 2013 study in the US 8. _____ daily with others through these sites. And in a small study in Australia, nearly one-third of teens questioned did not have 9. _____ on any social networking sites. Even Facebook's own 2014 business report contains information about less teen interest in the site. It looks like Facebook and other social networking sites have to 10. _____: how to keep teens interested!

TEXT C

keep up with	store information	develop	solve the problem	keep in touch		
terrified	devices	going on	helpless	useful	catch on	scroll

Nomophobia

Mobile phones are such wonderful 1. _____ . We use them to 2. _____ with our friends and family, and our phone calendars help us 3. _____ our social obligations. In addition, those of us with smartephones use them to find out what's 4. _____ in the world. Unfortunately, some people find mobile phones so 5. _____ that they become addicted to them. When they're not sleeping, these people may use phones to check e-mails and different forms of social media about a hundred times a day! People who use their phones so often may 6. _____ something called "nomophobia" – a fear that they will be 7. _____ without their phones. This phobia is more common than you might imagine. In a recent UK survey, 66% of the 1,000 people in the survey said they were 8. _____ of losing their phones. Do you think you've got nomophobia? Find out more about the condition and ways to 9. _____ at www.allaboutcounseling.com.

TEXT D

broadband	browser	click	download	drop-down	multitasking
layout	scroll	tab			

1. In general, girls are better at _____ than boys.
2. We've got a very good _____ connection, so we can _____ files really quickly.
3. _____ down to the bottom at the page.
4. I think that Firefox is the best Web _____.
5. If you _____ on that _____, you get a _____ menu.
6. The _____ of this page is so confusing!

7. Match the words to form compound words

1. band _____	a. board
2. down _____	b. cam
3. fire _____	c. less
4. home _____	d. line
5. key _____	e. load
6. on _____	f. page
7. web _____	g. wall
8. wire _____	h. width

8. Use the words in exercise 7 to complete the sentences.

1. He hates cables; that's why he has a _____ mouse and _____.
2. My _____ blocks all those irritating pop-up adverts.
3. This _____ has a simple design, but it gives lots of information.
4. My friends can _____ my photos and songs from my blog.
5. The city's web is connected to a _____ which films people in the main street.
6. _____ is important, it means your internet connection can go faster or slower.

9. Match the words in the box with the words underlined.

be aware of	**lack**	**profiles**	**share**	**take advantage of**
theft	**uninitiated**	**underestimate**		

1. For the <u>people who don't know</u>, social networks allow people to share interests and information. _____
2. People who <u>have the same</u> interests can communicate with each other through social networks. _____
3. People sometimes <u>fail</u> to appreciate the dangers of social networks. _____
4. Many people <u>use the good things about</u> social networks to keep in touch with friends. _____
5. The <u>absence</u> of security on some social networks makes them potentially dangerous. _____
6. Users should always <u>know about</u> the risks of cyber-bullying or identity theft when using social network. _____
7. You can read <u>short descriptions</u> of different users. _____
8. Identity <u>robbery</u> is a problem in the digital age. _____

10. Choose the right option.

Getting to Know a Website

When you first enter a website, there are often (1) tabs / files at the top of the page that show you the different sections. When you (2) press / click on one of them, you sometimes get a(n) (3) open-up / drop-down menu with various options. Some websites have a confusing (4) disposition / layout and you need to (5) carry down / scroll down the page to see what they offer. Certain pages (6) reload / reshow automatically, but with other websites you need to (7) update / refresh the page from time to time. If you can't find your way around the site, have a look at the (8) common doubts / FAQs or the (9) site map / web plan. If you really like a website, it's a good idea to (10) bookmark / favourite it so you can easily find it again later. One final point: if you find that most pages (11) load / charge slowly, get faster (12) largeband / broadband connection.

11. Watch the video *What is the next step for social media and human communication* and answer the questions below.

a) Write 4 ways of communication in the past:

b) What will happen with the term "social media" according to the speaker?

c) What two examples are given for future social media?

d) Why are social media demonized by some people according to the speaker?

e) What example does the speaker gives to demonstrate his opinion?

12. Academic writing – 160-180 words.

Do social networking sites play an important role in your life?

13. Translate the sentences related to Cyber Communication below.

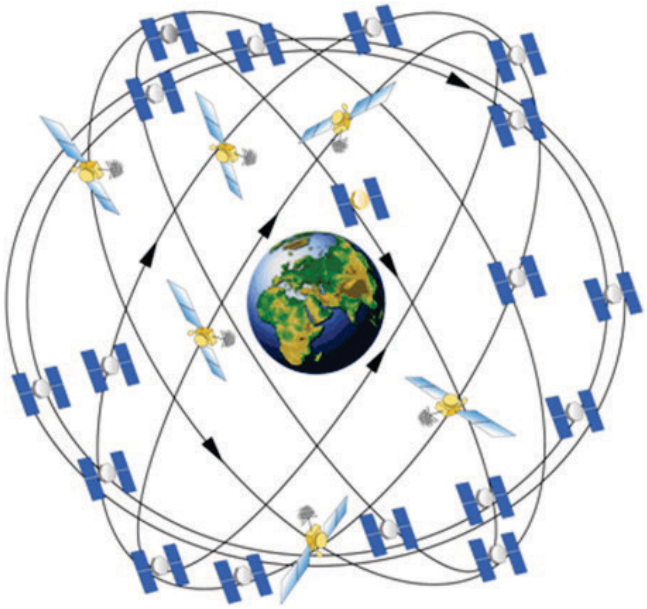
I. ADVANTAGES

1. You can communicate **ACROSS THE MILES.**
2. Cyber communication saves time. You don't need to go **DOOR TO DOOR** or **PUT PEN TO PAPER** to communicate with people.
3. Cyber communication is **AS CHEAP AS CHIPS.** It's free to use Facebook, make Skype calls and send Viber messages as long as you have a suitable device a wi-fi connection.
4. Cyber communication has led to increased knowledge sharing. Free online courses are **TWO A PENNY** on the Internet.
5. It's easier to communicate now. Advances in technology make surfing the Internet and sending **messages A PIECE OF CAKE.**
6. Cyber communication gives vulnerable people a voice. Anonymous posting increases **FREEDOM OF EXPRESSION** and protects **WHISTLEBLOWERS**.
7. Cyber communication **BREAKS DOWN BARRIERS.** People with different political views and people from different social classes and countries regularly communicate on the Internet.
8. It's easier to **STAY IN TOUCH** with family and friends.
9. Cyber communication helps to publicise human rights abuse, animal abuse, corruption and other criminal acts. It should help to **CURB** this behaviour.
10. Cyber communication can help people feel safer. Children can call their parents to let them know where they are. Hikers can call mountain rescue if they get lost. If your car breaks down, you can call for assistance.

II. DIADVANTAGES

1. We are losing the art of real communication, i.e. we are **DRIFTING AWAY FROM** face-to-face communication. Text speak has also led to a deterioration of written communication.
2. It's easier to **GET YOU WIRES CROSSED**. You can't see someone's body language or listen to someone's intonation when you receive an electronic message. This can lead to confusion and misunderstanding.
3. There are lots of **DODGY** people in the world and it's easy for someone to lie on the Internet. You have to be careful what data you trust and who you share things with.
4. Stuff you post online can **COME BACK TO HAUNT YOU**. It's difficult to delete things you post online so all the **DAFT** things you do will be there for the world to see.
5. Cyber communication presents new privacy concerns. There are a lot of stories in the media about press and government **SNOOPING**. Your information is also vulnerable to hackers.
6. Cyber communication has resulted in new social divides. Not all people can afford a computer, smart phone or broadband connection. There are some **SILVER SURFERS** but the majority of elderly people don't know how to use a computer or Internet.
7. Cyber communication isn't healthy. Increasing use of e-devices is turning us all into **COUCH POTATOES**. Staring at screens can also damage your eyes.
8. If you're **OUT IN THE STICKS**, you probably won't have Internet connection or coverage to use mobile phones.
9. Cyber communication can be used for antisocial purposes. It makes it easier for criminals to steal your information or for terrorists to **HATCH THEIR PLANS**.
10. Internet addiction is a growing problem. Many people are **HOOKED ON** social networking sites and **GLUED** to screen most of the time.

GPS SYSTEM



1. Watch the video *The truth about GPS – how it works* and answer the questions below.

a) Who invented GPS?

b) Why was GPS created?

c) Who provided GPS services?

d) Is GPS service cheap or expensive?

e) What is the structure of GPS?

f) How does GPS work?

g) How does GPS provide high accuracy?

h) What GPS applications are mentioned?

i) How many GPS satellites are available today?

2. Find information about:

a) When was the GPS project launched?

b) When was the first GPS prototype launched?

c) When was GPS fully operational?

d) When was civilian use allowed?

e) How many GPS satellites are used today?

ONLINE BANKING

1. Read the text above and after that go to statements below and correct those which are wrong (X), or make a tick (✓) if they are completely right.

The main purpose that banks have been serving since their inception is keeping our money safe for us. While keeping our money safe, they also let us earn a certain amount of interest on the money deposited with them. Traditional banks have been doing this, and internet banks continue the same function. The only difference is in the way the transactions are made.

Online banking has been around for quite a few years. In fact, it was introduced in the 1980s and has come a long way since then. The last decade has seen a profuse growth in internet banking transactions. Several pieces of legislation have also been introduced in this area.

Though it began in the 1980s, it was only in the mid-nineties that internet banking really caught on. What attracts customers to internet banking is the round the clock availability and ease of transactions. Studies estimate that internet banking still has a long way to go. There are several banks that have customers who prefer banking in the traditional ways. Statistics released by the FDIC show that only 40% of the banks in the U.S. offer internet banking facilities worth mentioning. All the others may have an online presence but do not have enough online transactions to justify their presence on the internet.

Some customers have been known to turn to internet banking due to dissatisfaction with standard procedures and practices. The total absence of human interaction appeals to some people. Some customers turn to internet banking facilities for security reasons. This is mainly because of customers being assured of banks' ability to keep transactions safe and secured.

a) Traditional banks are keeping money safe for us, while online banks let us earn some interest on deposits.

b) The number of online banks has been growing in this century and new laws and regulations have been accepted.

c) Customers prefer online to traditional banking because it is easier and accessible any time.

d) The majority of American banks offer internet banking option, according to statistics.

e) No customer likes the impersonal touch of online banking.

f) Some customers think that internet banking is safer than traditional banking.

2. Read the text again and answer the questions.

a) What is a basic difference between online banks and traditional banks?

b) For how many years has been noticed an enormous increase of online banks?

c) Why do customers like internet banking?

d) In the USA, do online banks present the majority of banking institutions?

e) Do some people like the impersonal touch of the internet banking? (Your opinion: Why yes/no?)

f) According to the text, are online bank transactions more risky? Why?

2. Watch the video *Traditional banking vs online banking*. Using the info presented there, compare traditional banks and online banks by writing a text ending with your opinion – which bank do you prefer and why? Words – 180 - 200.

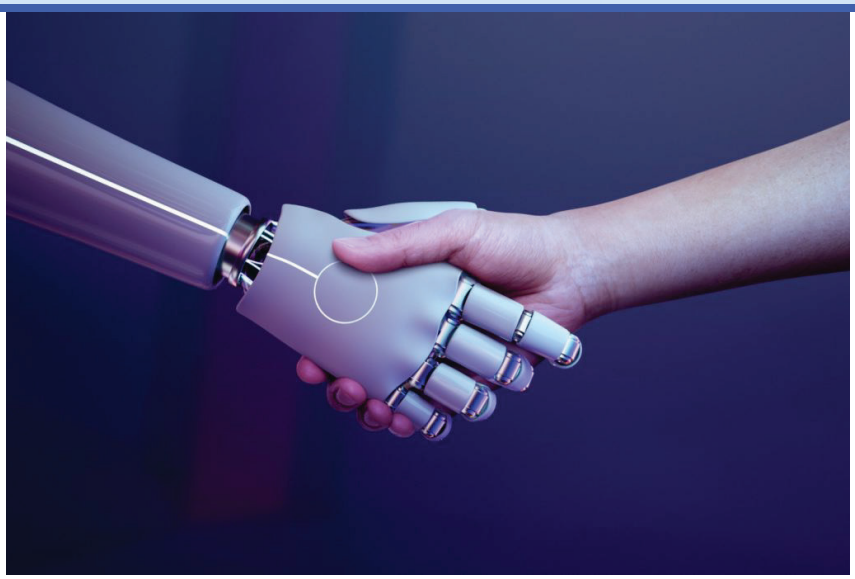
ONLINE LIBRARIES

1. Watch the video Libraries in the Internet Age and answer the questions below.

a) What is the focus of libraries today?
b) Where can info be found today?
c) What are the roles of librarians today?
d) What can we do in an online library?

2. Watch the video Library tour of NC State University and name at least 5 features mentioned in the video that distinguish the library.

ROBOTS



1. Read the text and mark the statements as TRUE or FALSE.

Robot Teachers

If you think of the jobs robots could never do, you would probably put doctors and teachers at the top of the list. It's easy to imagine robot cleaners and factory workers, but some jobs need human connection and creativity. But are we underestimating what robots can do? In some cases, they already perform better than doctors at diagnosing illness. Also, some patients might feel more comfortable sharing personal information with a machine than a person. Could there be a place for robots in education after all?

British education expert Anthony Seldon thinks so. And he even has a date for the robot takeover of the classroom: 2027. He predicts robots will do the main job of transferring information and teachers will be like assistants. Intelligent robots will read students' faces, movements and maybe even brain signals. Then they will adapt the information to each student. It's not a popular opinion and it's unlikely robots will ever have empathy and the ability to really connect with humans like another human can.

One thing is certain, though. A robot teacher is better than no teacher at all. In some parts of the world, there aren't enough teachers and 9–16 per cent of children under the age of 14 don't go to school. That problem could be partly solved by robots because they can teach anywhere and won't get stressed, or tired, or move somewhere for an easier, higher-paid job.

Those negative aspects of teaching are something everyone agrees on. Teachers all over the world are leaving because it is a difficult job and they feel overworked. Perhaps the question is not 'Will robots replace teachers?' but 'How can robots help teachers?' Office workers can use software to do things like organise and answer emails, arrange meetings and update calendars. Teachers waste a lot of time doing non-teaching work, including more than 11 hours a week marking homework. If robots could cut the time teachers spend marking homework and writing reports, teachers would have more time and energy for the parts of the job humans do best.

STATEMENTS	TRUE	FALSE
1. Most jobs seem as if they can be done by robots or computers.		
2. Robots are always better at diagnosing illness than doctors.		
3. Many experts agree robots will replace teachers by 2027.		
4. One advantage of robot teachers is that they don't need to rest.		
5. Robot assistants could help teachers by marking homework.		
6. Some teachers use robots to reduce their time answering emails and marking homework		

2. Choose the best answer.

1. It's easy to think robots …
    a. will replace people even if we don't like the idea.
    b. are more capable than people and it's true.
    c. can do less than people but it's not always true.
2. Anthony Seldon thinks teachers in the future will …
    a. help robots in class.
    b. teach knowledge to students.
    c. no longer exist.
3. Robots will probably never …
    a. have human understanding of emotions.
    b. be a popular choice for teachers.
    c. be intelligent enough to work in education.
4. Some parts of the world …
    a. pay robots to teach.
    b. already use robots in teaching jobs.
    c. have a shortage of teachers.
5. Teachers …
    a. work harder than office workers.
    b. have less help than office workers.
    c. leave their jobs to become office workers.
6. Robots could …
    a. empathise with students.
    b. mark homework.
    c. prepare lessons.

3. Read the questions and choose the correct expert (A–D). Each expert may be chosen more than once.

Robots: Friend or Foe?

A

I would say that we are quite a long way off developing the computing power or the algorithms for fully autonomous AI, though I do think it will happen within the next thirty or forty years. We will probably remain in control of technology and it will help us solve many of the world's problems. However, no one really knows what will happen if machines become more intelligent than humans. They may help us, ignore us or destroy us. I tend to believe AI will have a positive influence on our future lives, but whether that is true will be partly up to us.

B

I have to admit that the potential consequences of creating something that can match or surpass human intelligence frighten me. Even now, scientists are teaching computers how to learn on their own. At some point in the near future, their intelligence may well take off and develop at an ever-increasing speed. Human beings evolve biologically very slowly and we would be quickly superseded. In the short term, there is the danger that robots will take over millions of human jobs, creating a large underclass of unemployed people. This could mean large-scale poverty and social unrest. In the long term, machines might decide the world would be better without humans.

C

Personally, I think it's fascinating to consider how we'll speed up our evolution as a species by augmenting our bodies. Imagine if you could implant a computer inside our brain! Soon we'll be able to do just that and enhance our mathematical ability, audiovisual perception and our memory, and this idea is only going to become more and more commonplace. AI is also popping up in the world around us. Recent developments include self-driving cars and drones carrying life-saving equipment to people at sea. Granted, there have been a few teething problems: one woman who was asleep on the floor had her hair eaten by her robot vacuum cleaner and there have been fatal accidents with self-driving cars. But progress always comes at a cost, and for me the advantages far outweigh the disadvantages.

D

I'm a member of the Campaign to Stop Killer Robots. Forget the movie image of a terrifying Terminator stamping on human skulls and think of what's happening right now: military machines like drones, gun turrets and sentry robots are already being used to kill with very little human input. The next step will be autonomous 'murderbots', following orders but ultimately deciding who to kill on their own. It seems clear to me that this would be completely unethical and dangerous for humanity. We need to be very cautious indeed about what we ask machines to do.

1. **Which expert gives their opinion about what will happen with the same level of certainty as D?**

- Expert A
- Expert B
- Expert C
- Expert D

2. **Which expert seems to disagree with B about how fast humans can change?**

- Expert A
- Expert B
- Expert C
- Expert D

3. **Which expert agrees with B that the negative aspects of AI far outweigh the positive aspects?**

- Expert A
- Expert B
- Expert C
- Expert

4. **Which expert has a similar view to A about the responsibility humans have for the future of AI?**

- Expert A
- Expert B
- Expert C
- Expert D

5. **Which expert has a different view from the others regarding the timescale of AI becoming much more autonomous?**

- Expert A
- Expert B
- Expert C
- Expert D

4. Match the verbs with their meanings. All the verbs can be found in text B.

To take over (from someone); to supersede; to evolve; to take off; to surpass; to develop

a) to go beyond
b) to replace something older or less advanced
c) to start doing something that someone else was doing
d) to suddenly start to be successful
e) to develop gradually (especially for a biological species)
f) to grow or improve, or to make something grow or improve

5. Watch the video *9 Most Advanced AI Robots* and fill in the table below.

Robot	Area of application	Tasks performed
Digit		1. 2. 3.
Pepper		1. 2. 3. 4. 5.
Atlas		1. 2.
Spot		1. 2.
HRP-5P		1.
Surena 4		1. 2. 3.
Acquanaut		1. 2. 3.
Stuntronic		1. 2.
Handle		1. 2. 3.

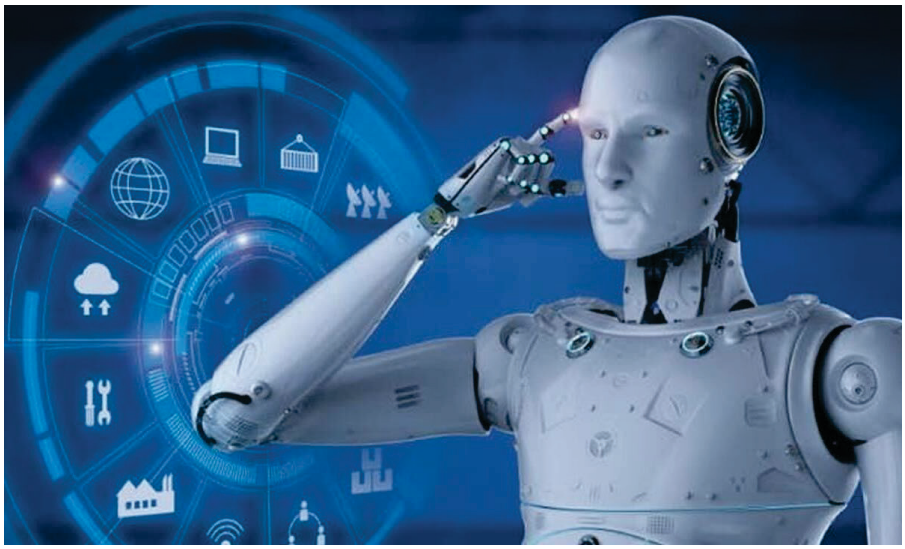
6. Watch the video DEREX Robots and answer the questions below.

a) What type of company is DEREX?
b) What do they produce?
c) What are their tasks like?
d) In what two areas do they use universal robots?
e) Why did they introduce universal robots?
f) Why didn't they hire more employees?
g) What are the four distinguishing features of their universal robots?
h) What are the three benefits for the company by implementing universal robots?
i) Where do they plan to use universal robots in the future?

7. Academic writing – 180-200 words.

"Would you like to have a robot as a teacher? Why? Why not?"

ARTIFICIAL INTELLIGENCE



1. Read the text and choose the explanations closest to the meanings of the words given below.

1. science fiction
   a. story based on a true event
   b. story based on a person's life
   c. story based on an imagined science
   d. story based on a true place
2. robot
   a. a machine
   b. a human
   c. an animal
   d. a food
3. traits
   a. physical attributes
   b. distinguishing characteristics
   c. personality flaws
   d. mechanical tasks
4. onslaught
   a. not many
   b. a few
   c. none
   d. a lot
5. tournament
   a. a series of games
   b. a series of developments
   c. a series of traits
   d. a series of machines
6. possibility
   a. something that will happen
   b. something that won't happen
   c. something that may happen
   d. something that should happen

Artificial Intelligence - An Overview

Can computers think? Do robots have the same characteristics as humans? Which is more intelligent - man or machine? The debate is ongoing.

Humans are capable of several traits. Among them are reasoning, planning, learning, and communication. Are computers and machines capable of the same traits? Essentially, the definition of artificial intelligence is the intelligence that a machine demonstrates. With the onslaught of robots, computers, and other technological advances, one might believe the study of artificial intelligence is new. However, people have been working on intelligent machines for years. One of the more famous names associated with the field is Alan Turing. Turing believed that if a machine could pretend to be human, then it was intelligent.

One thing that people can do with artificial intelligence is play games. Machines are available that play chess at expert levels. They're not even that costly. Turing wrote the first computer chess program in 1950; however, it wasn't until 1958 that a chess program beat a human for the first time. Over the years, computers began playing in tournaments with some wins and some losses. As the years progressed, computers started winning more and more. In 2005, a team of computers beat chess champions Veselin Topalov, Ruslan Ponomariov, and Sergey Karjakin.

Many industries, such as the airlines and technology, are incorporating artificial intelligence into their work. AT & T lists artificial intelligence as one of their research areas. Universities such as Carnegie Mellon, Massachusetts Institute of Technology (MIT), and Stanford University have done research in the field. MIT has CSAIL (Computer Science and Artificial Intelligence Laboratory). One of the lab's research areas is an attempt to understand and develop artificially intelligent behavior. A lot of the research is done by faculty members who work with students. Some U.S. government agencies help fund CSAIL.

As industries experiment and researchers study, the public has become more aware of the possibilities. The movie industry has made several films that usually are classified as science fiction. One popular film was *I, Robot*. Another was simply titled *Artificial Intelligence*. People have also started buying toys and tools that display certain traits. The Furby™ was a popular robotic toy that eventually learned to speak English. The Roomba™ is a vacuum that is made by the iRobot Corporation. It vacuums without being pushed. If it doesn't need a human to guide it, is it smarter than a human? There are many questions left to be answered in this field.

Do you believe that machines can behave like humans?

2. Read the text and answer the questions that follow.

In a recent discussion paper, NITI Aayog has chalked out an ambitious strategy for India to become an artificial intelligence (AI) powerhouse. AI is the use of computers to make decisions that are normally made by humans. Many forms of AI surround Indians already, including chatbots on retail websites and programs that flag fraudulent bank activity. But NITI Aayog envisions AI solutions for India on a scale not seen anywhere in the world today, especially in five key sectors — agriculture, healthcare, education, smart cities and infrastructure, and transport. In agriculture, for example, machines will provide information to farmers on the quality of soil, when to sow, where to spray herbicide, and when to expect pest infestations. It's an idea with great potential: India has 30 million farmers with smartphones, but poor extension services. If computers help agricultural universities advise farmers on best practices, India could see a farming revolution.

However, there are formidable obstacles. AI start-ups already offer some solutions, but the challenge lies in scaling these to cover the entire value chain, as NITI Aayog envisions. The first problem is data. Machine learning, the set of technologies used to create AI, is a data-guzzling monster. It takes reams of historical data as input, identifies the relationships among data elements, and makes predictions. More sophisticated forms of machine learning, like "deep learning", attempt to mimic the human brain. And even though they promise greater accuracy, they also need more data than what is required by traditional machine learning. Unfortunately, India has sparse data in sectors like agriculture, and this is already hampering AI-based businesses today.

In fact, the lack of data means that deep learning doesn't work for all companies in India. One example is Climate-Connect, a Delhi-based firm, which uses AI to predict the amount of power a solar plant will generate every 15 minutes. This is critical because solar electricity generation can change dramatically every hour depending on weather conditions and the position of the sun. When this happens, the plant must communicate expected changes to power distributors, which will then switch to alternative sources. With India planning to install 100 GW of solar power by 2022, such AI will play a central role in power planning.

But to generate such data, Climate-Connect needs historical inputs like the time of sunrise and sunset, and cloud cover where the plant is located. Unfortunately, since most Indian solar plants are recent, data are available only for a couple of years, whereas deep learning needs data over many years to predict generation. Today, the firm uses traditional machine learning technologies such as regression analysis that work with less data. These methods have an accuracy of around 95%. While deep learning can boost accuracy for operations such as Climate-Connect, it hasn't worked very well in the Indian scenario, says Nitin Tanwar, cofounder of the firm.

Another problem for AI firms today is finding the right people. NITI Aayog's report has bleak news: only about 50 Indian scientists carry out "serious research" and they are concentrated in elite institutions such as the Indian Institutes of Technology and the Indian Institutes of Science. Meanwhile, only about 4% of AI professionals have worked in emerging technologies like deep learning. A survey of LinkedIn found 386 out of the 22,000 people with PhDs in AI across the world to be Indians. How does this skill gap impact companies? To some extent, open libraries of machine learning code, which can be customised to solve Indian problems, help. This means that companies need not write code from scratch, and even computer science graduates can carry out the customisation.

1. Which of the following is/are synonym/s of the word bleak?

I. Depressing
II. Dismal
III. Congenial
IV. Stark

A - Only III

B - Only I and III

C - Only I, II and IV

D - Only II, III and IV

E - Only I, II and III

2. Which of the following is/are antonym/s of the word sparse?

I. Scant
II. Few
III. Sporadic
IV. Abundant

A - Only II

B - Only IV

C - Only I, II and IV

D - Only I, II and III

E - Only II, III and IV

3. What can be some steps that can be taken by India to improve its AI capabilities?

I. The government must collect and digitize data it has access to due to running numerous schemes.
II. Set up institutes to churn out more skilled people in this field.
III. There should be adequate funding and also fixed deadlines to gauge performance.

A - Only I

B - Only III

C - Only I and II

D - Only II and III

E - All of the above

4. Which of the following weakens the argument for using more of AI powered tools in the future in India?

I. The AI sector uses a tremendous amount of electricity so as to process huge amounts of data which is not sustainable.
II. It is tough to collect, validate, standardize, correlate, archive and distribute AI-relevant data and make it accessible to organizations, people and systems.
III. Although AI will create more jobs than it would destroy.

A - Only I

B - Only II

C - Only I and II

D - Only II and III

E - All of the above

5. Which of the following statements weakens the argument about using 'Open Libraries' of machine learning code?

A - They contain material that can be used to solve issues.

B - Using such libraries is not a difficult job and does not need a higher level of understanding of coding.

C - It is possible to do a respectable amount of machine learning without mathematics.

D - These are not helpful in cases where there is neither a fixed algorithm nor a standard procedure.

E - None of the above

3. Read the text and find words that mean the same as the words below.

While The Singularity is hardly looming on the horizon, there have been some fascinating developments in the world of artificial intelligence and machine learning that we wanted to delve into.

Researchers at Purdue University are building human brain-inspired hardware for artificial intelligence (AI) to help AI learn continuously over time. The goal of the project is to make AI more portable so that it can be used in isolated in environments such as in robots in space or for autonomous vehicles. By embedding AI directly into hardware rather than running it as software, these machines could operate more efficiently. In a paper published in Science in February, Purdue researchers explained how computer chips could rewire themselves dynamically to take in new data as the brain does, enabling AI to continue learning over time. To enable learning, the brain is continuously forming new connections between neurons. As such, to build a computer or machine inspired by the brain, the circuits on a computer chip also have to change. However, a circuit that a computer has been using for years is the same as the circuit that was built for the computer in the factory. Consequently, researchers must be able to "continuously program, reprogram, and change the chip," according to Shriram Ramanathan, a professor in Purdue University's School of Materials Engineering whose work involves discovering how materials could imitate the brain to improve computing. Ramanathan and his team built new hardware that can be reprogrammed with electrical pulses on demand. The team's thinking is that because this device is adaptable, it will be able to take on all functions necessary to build a computer inspired by the human brain. "Through simulations of the experimental data, the Purdue team's collaborators at Santa Clara University and Portland State University showed that the internal physics of this device creates a dynamic structure for an artificial neural network that is able to more efficiently recognize electrocardiogram patterns and digits compared with static networks," according to Purdue. "This neural network uses 'reservoir computing,' which explains how different parts of a brain communicate and transfer information." The team now aims to demonstrate this on large-scale test chips that could be leveraged to develop a brain-inspired computer, the researchers said.

MIT's 'Brain on a Chip'

MIT researchers are working toward the day when people "might be able to carry around artificial brains [that can work] without connecting to supercomputers, the Internet, or the cloud," according to a statement. "Like a brain synapse, a memristor would also be able to 'remember' the value associated with a given current strength, and produce the exact same signal the next time it receives a similar current," the statement noted. "This could ensure that the answer to a complex equation, or the visual classification of an object, is reliable — a feat that normally involves multiple transistors and capacitors." In a paper published in "Nature Nanotechnology," the scientists explained how their brain-inspired chip could remember a gray-scale image of Captain America's shield — each pixel was matched to a corresponding memristor on the chip — and recreate the same crisp image of the shield numerous times. In the paper, MIT's researchers highlighted the fact that its "brain-on-a-chip" could be used for performing complex tasks on mobile devices — tasks that currently only supercomputers can handle.

Brain-Like Device Simulates Human Learning

Taking a page from the book of Russian psychologist Ivan Pavlov, who trained dogs to associate the sound of a bell with food, researchers at Northwestern and the University of Hong Kong, have trained their computing device to associate light with pressure, according to a statement. The research was published in the journal "Nature Communications." This new device imitates the brain by using electrochemical "synaptic transistors" to process and store information at the same time, the statement noted. "These synapses enable the brain to work in a highly parallel, fault tolerant, and energy-efficient manner," the statement noted. The device's organic, plastic transistors work the way a biological synapse works. "With its brain-like ability, the novel transistor and circuit could potentially overcome the limitations of traditional computing, including their energy-sapping hardware and limited ability to perform multiple tasks at the same time," according to the statement. "The brain-like device also has higher fault tolerance, continuing to operate smoothly even when some components fail." In current computer systems, memory and logic are physically separated; however, bringing those functions together would save space and reduce the cost of energy. And the soft, plastic-like polymers of the new computing device would enable researchers to integrate it into smart robotics, wearable electronics, and even devices implanted in people.

Conclusion

While a robot uprising is still firmly in the realm of science fiction, these advancements are just some of the ways scientists are working to replicate the brain's biological machinery and that one day might lead to computers that function like the human brain.

Source: Rosencrance L. Will Computers Be Able to Imitate the Human Brain? 2022. Technopedia. https://www.techopedia.com/artificial-intelligence/machine-learning/will-computers-be-able-to-imitate-the-human-brain/2/29264

a) to look into, to investigate (par. 1)
b) to appear, to rise (par. 1)
c) to readjust (par. 2)
d) whenever required (par. 2)
e) achievement (par. 3)
f) clear (par. 3)
g) underline (par. 3)
h) new (par. 4)
i) domain, area (par. 5)

4. Fill in the gaps with the words from the text that match those in exercise 3.

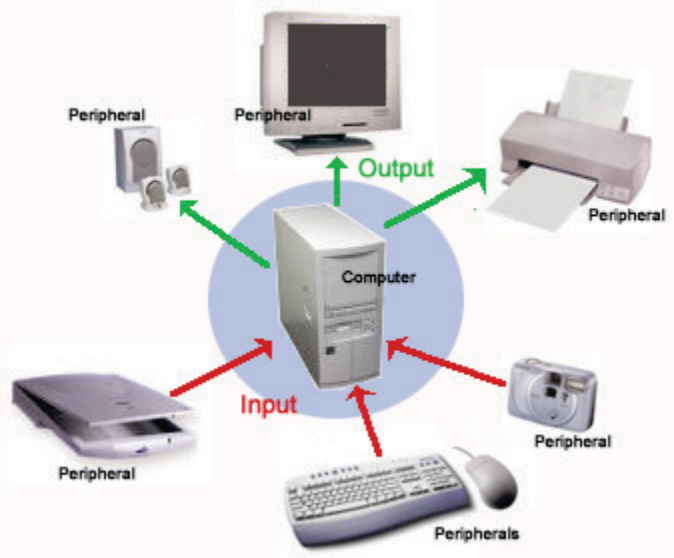
a) The injured brain, moreover, can _____ itself.
b) Very few places in the world have pure hydrogen available _____.
c) The Eiffel Tower is a remarkable _____ of engineering.
d) Now that we have cable, we get a wonderfully _____ picture, even on our old TV.
e) The students can _____ these topics to improve their performance at university.
f) Your resume should _____ your skills and achievements.
g) The engineer has suggested a _____ approach to the problem.
h) Chip shortages _____ in some parts of the world.
i) In recent years, many technological innovations have deepened my interest in the _____of computer science.

4. Academic writing – 180-200 words.

"Is Artificial Intelligence an Existential Risk?"

Existential risk - something that could lead to the permanent destruction of human potential, and the most notable example of this kind of risk is extinction.

PERIPHERALS



1. Read the text and find synonyms that best match the definitions below.

The Printing Industry from the Past is Going Through a Disruptive Transformation

Even in a world that becomes more and more paperless every day, printing remains a vital component for manufacturing and logistics. As businesses implement efficiencies so too are they making improvements to the printing technologies that support them. Right now, areas of advancement include hybrid print technologies, handheld inkjet printers, new software tools, and 3D printing.

Hybrid Print Technologies

Hybrid printing combines the capabilities of conventional flexo and digital printing. Flexo, named for its flexible relief plate, is popular for printing on substrates used for food packaging including flexible plastic film and corrugated board. It is fast, simple, clean, and cost-effective.

Essentially, hybrid printers are flexos that run on digital technology. By combining tried-and-true methods with digital advancements, companies are saving setup time, and carrying out even faster production processes. The end result, a more diverse selection of printed products and higher profit margins per job.

Handheld Inkjet Printers

When you need a fast way to print letters, labels, and numbers on products, there is no better option than a handheld inkjet printer. They are easy to transport and ready to print in high resolution. They can print on wood, concrete, paper, plastic, metal, or glass.

Advancements in this technology include easy-to-use touch screen displays which allow users to make changes on the fly. They are real cost savers and easy to use.

Software Innovations

New versions of graphic design software are enabling easier workflows stronger file compatibilities, and more collaboration between designers and end-users. Thanks to greater software flexibility, projects can be completed more cost-effectively from almost any geographic location, although there is a bit of a learning curve before users can master these tools. Businesses favoring software over traditional print are experiencing stronger returns on investment encouraging the training of staff to master these tools.

3D Printing Turns Printers Into Manufacturers

Also known as additive manufacturing, 3D printing is a gamechanger for the print industry. Traditional printers who explore the opportunity that 3D provides are entering an entirely new business where they can become custom manufacturers.

Industries as varied as medicine, construction (3D-printed houses), aviation and aerospace (SpaceX and NASA are manufacturing rocket components this way), and engineering, are all using 3D printing. Its advantages: reduced material costs, customization, faster production, and fewer injuries. It's no wonder why this technology is making inroads, not only here on Earth but in outer space as well. Yes, there is a 3D printer on the International Space Station being used to make replacement tools and spare parts.

How does 3D printing work? The current technology prints using a layering method. Computer-aided designs (CAD) can be interpreted by the technology to make finished three-dimensional objects incorporating colours and finishes that make the products indistinguishable from more traditional manufacturing such as injection molding.

Whether printing an entire house, or just pieces of one, or printing replacement body parts, the print industry is no longer restricted to technologies that originated with block printing and Gutenberg.

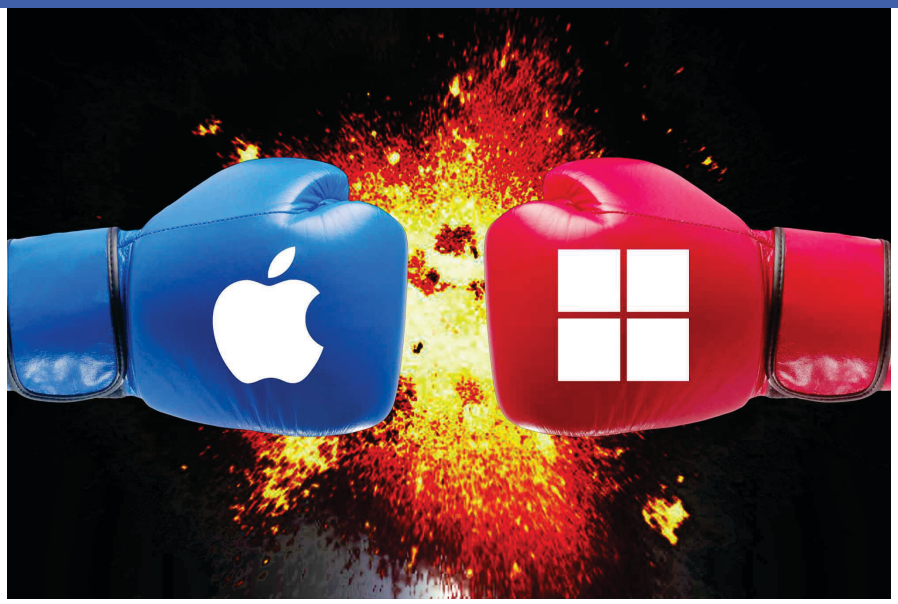
For hobbyists 3D printing is turning homebodies into creators of ceramics, and jewelry. And as the cost of the technology continues to drop it is making it more attractive to the average consumer.

a) varied/mixed
b) perform
c) absolutely necessary or important
d) something that effects a significant shift in the current way of doing things
e) producing good results without paying a lot of money
f) include, take in
g) standard, traditional
h) while in motion or progress
i) have a specified beginning
j) not able to be identified as different

2. Match the words from column A and column B so as to form complex nouns or meaningful expressions.

Column A	Column B
1. setup	a) selection
2. finished	b) efficiencies
3. work	c) effective
4. make	d) board
5. diverse	e) products
6. implement	f) manufacturer
7. corrugated	g) time
8. custom	h) inroads
9. cost	i) changer
10. game	j) flow

MACS AND PCS



1. Read the text and summarize the similarities and differences between a MAC and a PC in the table that follows.

Comparison and contrast of Macs and PCs (*Essay*)

There are some similarities between Mac and PCs. “Mac vs PC comparison has always been like comparing apples and oranges. Both have their fan followings, but both are very different in the way they approach the market. Similarly, both OS-X and Windows are operating systems, but both are built on two different foundations” (Mac or PC: Who Will Win the Bout?). However, there is a slight difference in the price of these computers the hardware used in both Mac and PC is similar. In a Mac computer, it can also run windows with the use of a particular program named Virtual PC. “Running Windows on a Macintosh is cheaper than buying two computers. With a laptop, it can be more convenient, too. If you’re torn between a Mac and its seamless hardware/software integration and the universality of Windows, you can have your cake and eat it too, albeit at a steep price”.

All the functions which the PC can perform and support can carry out by the Mac computer also. It does not signify that both computers are operating in the same way but there is nothing impossible by the Mac which the PC does. Both computers can browse the internet, share and download files, make use of e-mail, and so on. Moreover, the Mac and PC can be networked simultaneously that is PC to Mac, Mac to Mac and PC to Pc, etc. Both these computers are excellent each one has its benefits. If there is any negative point in PC compared to Mac in some other case PC will be better than Mac. So the choice of buying these computers is to depend on customer’s wish and need.

Even though there are some similarities between Mac and PC, both computers have a wide variety of differences. Macs have been produced by Apple whereas PCs were first produced by IBM.

“The difference between a Mac and PC can be summed in one sentence: “Macs and PC’s operate and work differently. ”The biggest difference between Macs and PC’s can be summed up by different “thought” processes and philosophies. Macs think more like humans, while PC’s tend think to the opposite

of humans" (What is the difference between Mac and PC?). An example is that a Mac will read a number in the same way read by humans but a PC will reverse the number and read. "Macs are traditionally classified separately from PCs because they are based on the PowerPC architecture from Apple/IBM/Motorola instead of the traditional Intel-based microprocessors that have powered PCs for decades. A great deal of software is also compatible with either Mac or PC, but not both".
Macs can run a Macintosh operating system, whereas a common PC cannot. The software used in a Mac and a PC are different. The PCs often come installed with Windows operating system. But a Mac is made up of UNIX operating system which is less prone to viruses and other malicious soft wares. Thus a Mac has less chance of virus attack than a PC. Macs are more efficient and simpler than PCs. They have a user-friendly interface. Any hardware part can be customized using a PC. But a Mac provides options for only fewer hardware customizations. Macs offer better support to the customers. In terms of price, PCs are cheaper than Macs. There is also a difference between the icons of both of them. All these differences make Macs and PCs unique from each other.
Source: https://studycorgi.com/computers-macs-vs-pcs/

Similarities	Differences

2. Fill in the gaps using the following words:

generosity	**intensely**	**power**	**transplant**	**electronic**
pride	**reinvent**	**string**	**equals**	**surgery**

Steve Jobs at the age of 56. He was the father of the iPhone, iPod and Apple Mac computers turning **_1_** gadgets into objects of desire. "I think if you do something and it turns out pretty good, then you should go do something else wonderful". As he was fond of saying: "Wait, there is more!". "Today Apple is going to **_2_** the phone". And people did wait in long lines for the first iPhones in 2007. Then 3 years later they lined up for the iPod changing the way people consume the media. "Design plus function **_3_** the right lifestyle and that's what he felt." In 1976 Jobs co-founded Apple Computer and within a few years was worth $100 ml. In 1984 he was showing off his new **_4_** and joy, the Macintosh. And this has turned out insanely great. As critics hailed the Mac, Jobs was on the losing end of a **_5_** struggle at his company and left Apple a year later. He went into computer animation acquiring Pixar Studios and striking failure with a **_6_** of hit movies starting with Toy Story. "To infinity and beyond!". Jobs came back to Apple in 1996 and began reinventing the Mac dressing it up in a variety of colours. Concerns about his health began in 2004 when he underwent **_7_** for pancreatic cancer. A year later he spoke about that during a commencement at Stanford University. "This was the closest I've been to death and I hope it's the closest I get for a new more decades". An **_8_** private man with a quick temper kept reporters at bay saying his health is nobody's business. But he was losing weight. In 2009 he underwent a liver **_9_**. Five months later he expressed his gratitude "Now I have a liver of a mid-twenties person who died in a car crash and was generous enough to donate his organs." I wouldn't be here without such **_10_.**

3. Translate the text about Tim Cook.

Tim Cook е американски предприемач, филантроп и промишлен инженер. Той е главен изпълнителен директор на Епъл.

След смъртта на Стив Джобс Силициевата долина очакваше, че бизнесът на Apple няма да оцелее. Днес акциите на Apple са рекордно скъпи, а пазарната оценка на компанията е 1.9 млрд. долара – по-голяма от БВП на Канада, Русия или Испания. Освен всичко компанията продължава да доминира на пазара на смартфони. Това е доказателство как един индустриален инженер продължи успешно мисията на Стив Джобс. 59-годишният изпълнителен директор е предпазлив, тактичен и екипен играч.

Кук според много бивши ръководители в Apple е корпоративен колос, преследващ растеж, изграждайки империя около революционните изобретения на своя предшественик. Успехът му в привличането на клиенти от Китай помогна за ръста в продажбите, докато стремежът му за ефективност държи разходите под контрол.

След като публично обяви, че е гей Кук засили застъпничеството на Apple по теми като поверителност, устойчивост и права на човека. Кук заяви, че лично е ангажиран с увеличаването на броя на жените и черните в мениджърските редици на Apple.

Една от успешните стратегии на Тим Кук е чрез малки стъпки да изгради „крепост“ около iPhone чрез пускането на пазара на продукти като смарт часовник, AirPods и други абонаментни услуги.

От момента, в който пое поста през 2011 г. Кук следваше съветите на своя предшественик. Той ставаше всяка сутрин в 4 сутринта, преглеждайки данните за продажбите в световен мащаб. Беше запазена и петъчната среща с оперативния и финансовия персонал, която членовете на екипа наричаха „ вечерна среща с Тим“, тъй като самото събиране продължаваше с часове до вечерта. Тим Кук обаче рядко посещава дизайнерското студио на Apple - място, на което Джобс ходеше почти всеки ден.

Кук е описан от колеги и познати като скромен работохолик с единствен ангажимент към Apple. Въпреки че настоящите и бивши служители казват, че Кук е създал по-спокойно работно място от Джобс, той е определян също така като взискателен и ориентиран към детайлите.

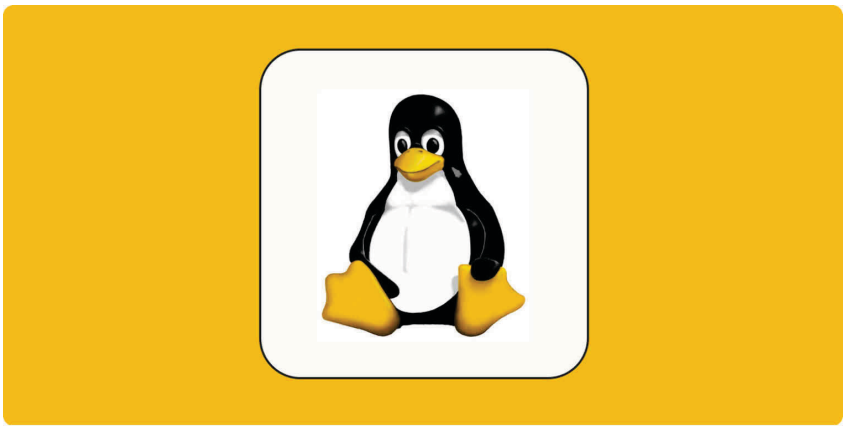
Том Кук прекрои и борда на Apple като замени директори, насочени към продуктите и маркетинга към такива, ориентирани към финансите. Но въпреки това той призова ръководителите на екипите, занимаващи се със софтуер, хардуер и дизайн да си сътрудничат.

Интересен момент от подхода на Кук е събирането на информация от холивудски продуценти като Брайън Грейзър, за да научи повече за развлекателния бизнес преди да одобри бюджет от 1 млрд. долара за услуга за стрийминг телевизия,

Кук за първи път отвори китайския пазар за Apple, като прехвърли производство към заводите там. Сделката помогна за превръщането на Китай във втория по големина пазар за Apple.

Source: https://www.investor.bg/a/262-analizi/309805-kak-tim-kuk-prevarna-apple-v-korporativen-kolos

LINUX



1. Read the text about Linux and tick the correct answers that follow.

A ragtag group of idealistic hackers scattered round the world has created software and devised a revolutionary method for writing it that poses a direct threat to Microsoft's revenue. Their programs are already running most of the Internet. According to a survey by the British consultancy Netcraft , the Web server software Apache is used by more than half of all websites. Furthermore, software named Sendmail moves nearly every e-mail message across the Internet, while the BIND program acts as a traffic cop for most of the global network, directing messages down the right connections to their final destinations The proven robustness of these programs is worry enough for Microsoft. To make matters worse, all of them, and many others, are completely free in two senses: one does not have to pay for them, and the "source code" in which they are written is openly available. Additionally, one may modify the programs and even sell the result. The "open source" movement is Microsoft's worst nightmare: a group of programmers that it cannot out-compete because its members are not motivated by profit, and which it cannot buy because it does not exist as a formal company. In the vanguard of the open source movement is Linux, started in 1991 by a 21-year- old Finn, Linus Torvalds , who wanted to write a free alternative to Unix, a popular but costly operating system. Today Linux is used by an estimated 7 million people, and the number is growing rapidly. One of Linux's advantages is that it runs on almost any hardware, from multi-processor supercomputers down to Palm Pilots. It is compact (it can fit on a floppy), highly efficient and very fast . Torvalds did not invent the idea of software that is doubly free but he has stumbled upon and developed a crucially important Darwinian dynamic. In a commercial software company, every program is carefully planned, and writing tasks are allotted unilaterally by the project leader. Linux is different. It is designed as a series of modules, and anyone can work on any of these interlocking elements. Whether one?s work gets included in the final release depends on the consensus view of how good it is--natural selection in action. The only reward anyone, even Torvalds , gets for this work is kudos from fellow hackers. That is enough, it seems, to attract a flow of keen recruits, typically computer science students or software engineers who code Linux on the side. Such purposive anarchy is made possible by the Internet. Trial versions of programs can be downloaded, and comments sent back to the authors, wherever they are. Programs frequently evolve on a daily basis. With the help of the Internet, the Linux model exploits the ingenuity of hundreds of programmers and hundreds of thousands of testers. It is a pool of creativity that Microsoft, with its huge resources, will never be able to match.

1. The author mentions that a particular bit of software is included into the final release of Linux only by consensus as an example of

- A. how writing tasks are allotted unilaterally by the project leader
- B. the modularity of Linux
- C. Linux?s unorthodox system of rewards
- D. the careful planning that goes into Linux software
- E. the process of natural selection at work in the field of computer programming

2. It can be inferred from the passage that if Linux existed as a formal company

- A. it would be used by more than the estimated 7 million people that currently use it
- B. its software would be more costly than Unix
- C. its software would still be less costly than Unix
- D. Microsoft would try to acquire it
- E. it could compete with Microsoft

3. According to the passage, programmers are motivated to create software for Linux I. to earn accolades II. for pecuniary gain III. to learn how to successfully hack software

- A. I only
- B. II only
- C. I and II only
- D. II and III only
- E. I, II and III

4. The passage mentions each of the following as factors contributing to the success of groups creating open source software EXCEPT

- A. the groups use the Internet to gather together hundreds of thousands of testers
- B. the groups do not exist as formal companies
- C. the products are designed to work on Palm Pilots
- D. the groups are not motivated by profit
- E. the programs evolve frequently

2. Watch the video *Is Linux finally beating Windows* and fill in the advantages and disadvantages of Linux in the table below.

Advantages	Disadvantages

3. Explain with own words the meaning of the expression "blue screen of death"

4. Give 3 reasons when answering the question:

With all its advantages, why is Linux market share just 1%?

ONLINE ADVERTISING

1. Match the underlined words from the text to their synonyms

A Brief History of Online Advertising

Adapted from a Hubspot article by Karla Cook

[1] Remember when "surfing the net" meant **traversing** a minefield of unwelcome pop-up ads? When "digital advertising" referred almost exclusively to **obnoxious** flashing banners and random sidebar ads? Online ads have matured a lot since those days, but it's still important to look back at the flashy, sometimes **messy** origins of internet advertising to better understand where we're headed -- and where there's still room for improvement.

[2] Online Advertising comes to life (1994) On October 27, 1994, the world of advertising was forever transformed by a small graphic bearing the presumptive words, "Have you ever clicked your mouse right here? You will," in a **kitschy** rainbow font. The age of banner ads had officially begun. The idea was to set aside portions of its website to sell space to advertisers, similar to how ad space is sold in a print magazine. They called the ad spaces "banner ads," and charged advertisers an **upfront** cost to occupy the real estate for a set time period -- very different from today's pay-per-click model. The banner ad concept blew up as a way for websites to keep their content **ungated** and free for users, and it wasn't long before other companies -- such as Time Inc. and CMP's Tech web -- were seeking out advertisers to lease banner space as a sustainable way to scale their sites.

[3] Pop-up ads quickly rise and fall (1997)

It would be an understatement to say that pop-up ads suffer from a poor image problem. They've been called internet's original sin and the most hated advertising technique, and one of the original developers has even apologized for creating the underlying code that **unleashed** them upon unsuspecting web surfers. Even so, these much-maligned ads hold an **undeniable** place in the history of online advertising. Amidst dwindling banner ad click through rates in the late 1990s, pop-up ads first seemed like a way to save online advertising and capture the attention of increasingly ad-blind users. And while pop-ups did **force** users to pay attention, they didn't actually translate to real ROI. By the early 2000s, it was standard for web browsers to come with pop-up blocking features.

[4] Advertisers turn to paid search and pay-per-click (1999-2002)

By this time, the web was expanding rapidly and users needed a better way to navigate the terrain. With search engines **steadily** gaining popularity, advertisers looking to create ads that were more targeted and less loathsome turned to sponsored search as the next digital advertising frontier.

In 1999, GoTo.com -- an emerging search engine company that would later be acquired by Yahoo – introduced the first pay-for-placement search engine service. Advertisers were given the opportunity to bid for top search engine results on particular keywords. Despite some initial **outcries** that paid search would lead to corrupt results, GoTo.com was able to monetize their search engine through the model.

The highest bidders were usually listed first, even above more relevant content, and it was unclear to users which results were paid and which were organic content. The user experience of paid search was suffering, and one **up-and-coming** search engine thought they could fix it. Google introduced AdWords in 2000, originally under a pay-for-placement ad model. Google wanted to create a sponsored search experience that generated revenue without compromising the quality and relevancy of search results.

[5] Digital ads become hyper-targeted (2006)

As social media platforms picked up steam in the mid-2000s, advertisers sought a way to integrate ad content in a way that was both effective and non-intrusive. Marketers wanted a plan of action to reach younger internet users who were increasingly **unswayed** by banner ads and spending most of their internet time on social networks. Targeting consumers with **relevant** ads -- rather than **bombarding** them with a large volume of ad content -- has become a standard practice for online advertisers, particularly on social media. Beyond Facebook's targeting efforts, other social networks such as Twitter, YouTube, and Google+ focus on providing an advertising experience for users that doesn't feel aggressive or impersonal.

[6] Marketers find value in native ads (2010 – present)

Around this time, a new group of media companies began to emerge. Websites like BuzzFeed and Mashable presented advertisers with new opportunities to connect with their audiences through sponsored content and native advertising. Advertisers pay to produce articles, videos, and other types of content for news and media sites. The nature of the content itself is promotional, but the format looks less like an ad and more like a regular piece of content on the host's website. Instead of relying on ads that **disrupt** their target audience's online experience, native advertising allows marketers to create promotional content that **supplements** a user's online experience. Websites that traditionally generated revenue from display ads began to realize that they could create a better user experience by relying primarily on native ads -- rather than traditional display ads -- without compromising on ad **revenue**.

1. proven, beyond question =
2. disgusting, repulsive =
3. in advance =
4. press, drive, make =
5. cross over, travel =
6. tasteless, tacky =
7. chaotic, disorganized =
8. unrestricted =
9. set free, release =
10. enrich, complement =
11. fitting, appropriate =
12. income, earnings =
13. disturb, interfere with =
14. protest, complaint =
15. flooded, overrun =
16. rising, emerging =
17. unaffected, unconvinced =
18. slowly but surely =

2. Discuss the following points about online advertising.

1. How has online advertising changed since the first online ad was displayed in 1994?

2. How can or can't advertising improve the surfing on the Internet?

3. Does modern advertising do more harm than good?

4. As there are more ads online, people start using ad-blockers (software that removes online advertising content). Is it ethical to use ad-blockers as it is sometimes the only funding for some websites that provide free content?

5. Can you remember an online advertising campaign that caught your attention?

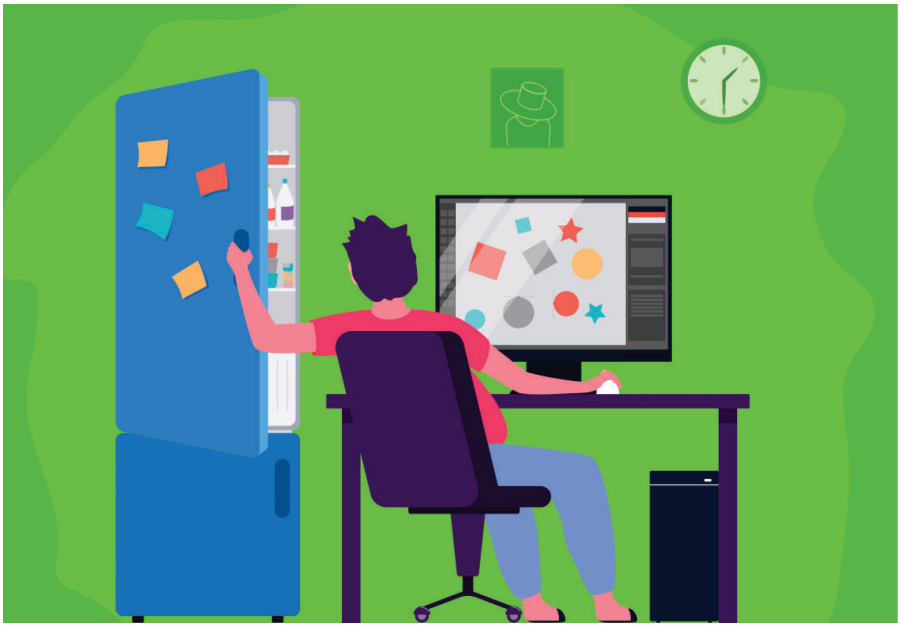
6. How much do ads influence your shopping decisions?

7. It is said that the Internet is the future of advertising. Would you agree? Does it mean that TV ads will be gone soon?

3. Watch the video *Why advertising are tracking your emojis* and discuss the following questions.

1. Are targeted ads intrusive and unethical in your opinion?
2. Should Twitter stop making emojis people use available for advertisers?
3. Are you concerned about the fact that we are being constantly tracked online?
4. What can we do about it?
5. How targeted ads could be beneficial to consumers?

TELECOMMUTING



1. Read the text *Working from Home* by Paul Campbell and choose whether the sentences are TRUE or FALSE.

a) Telecommuters have more job security compared to other workers. – **TRUE / FALSE**

b) Traffic is not a problem for a telecommuter. – **TRUE / FALSE**

c) Paul was looking for a job on the Internet. – **TRUE / FALSE**

d) Paul has regular meetings with his employer in Texas. – **TRUE / FALSE**

e) Paul doesn't have a fixed salary. – **TRUE / FALSE**

f) Telecommuting provides more work opportunities for Paul. – **TRUE / FALSE**

2. Read the text again and find synonyms for the words below (par. 1 and 2)

a) to dismiss (an employee) from a job

b) the state or situation of being alone

c) to find something by chance

d) to find particularly interesting, noticeable or impressive

e) to persuade someone to accept something

Firing a telecommuter is a lot easier than doing the same with an "in-house" employee, and working alone in remote solitude is not for everyone. It does have the advantage of avoiding the proverbial "rat race" on the motorway every day, and it does allow you to have more flexibility in your schedule. Telecommuters are not substantially different from any other type of employee, with the exception that you don't see them while they are working; only what they produce. I've had a particular good experience with telecommuting.

Last fall, I happened to come across a site while looking for opportunities to telecommute and freelance write. One add struck me, and I contacted the editor of that website through an e-mail message. At the time they were looking for writers and I pitched a column idea to them. Within a few days I was contacted and told that I could start writing a column on a biweekly basis. My column, *Technosporting*, was instantly welcome with great enthusiasm. Within a month it was increased to weekly.

From that day on I've been asked to contribute with several articles in addition to my regular column. My employer is in Texas and I live in Florida. Although we've only met personally once, we have a wonderful working relationship. Now, what I do is not like working hourly. I get paid by what I turn in, but that's fine by me, and it works well for my employer as well. It also allows me to work for more than one employer and I can earn as much as I am willing or able to work.

Of course, anybody considering getting into telecommuting had better think long and hard about it. While in examples like my case you can set your own hours, you'd better have the self-discipline to get your work done, and deliver things on deadline. There are no exceptions, no bad days, and failure is simply not an option. As for me, I'm quite proud of what I have accomplished as a

Source: https://en.islcollective.com/english-esl-worksheets/search/telecommuting

3. "on a biweekly basis" means:

a) twice a week b) every week c) every two weeks d) every month

4. Explain with your own words.

What advice does Paul give people who want to become telecommuters?

5. Read the text and answer the questions that follow.

Before the coronavirus pandemic, the world's largest cities had thousands of workers commuting from their homes to office towers every day. Now many large companies have decided that it is highly unlikely that all their workers will permanently return to office work. Company executives were forced by the crisis to figure out how to function effectively with workers operating from home — and realized surprisingly that it was not all bad.

"Is office work necessary?" said an executive of a large company, which has several thousand employees. "I'm thinking very seriously about it. In the future, are people going to want to crowd into offices?''. Many companies are studying jobs that would be most adaptable to working remotely and many employees could be required to turn up in the office less frequently. In fact, some major technology companies, including Twitter and Google, have extended work-from-home policies to the end of the year and beyond, raising the idea that many workers may never return to the office.

However, there are a number of factors to consider. For instance, the number of workers who actually prefer to be in an office because of the need for social interaction is an unknown factor. "The absence of face-to-face communication is not sustainable," John Malkovich, a property developer said. "Can you pay the bills from home? Yes. But can you work as a team from home? That could be challenging." Moreover, cities might start to die. Many cities have been built around the flow of people to and from offices, through subways, buses and rail systems and past the cafes, restaurants, bars, grocery stores and shops that depend on commuters for their survival.

On the other hand, many people feel liberated working from home. New technologies have made it unexpectedly easy. Workers are free from repetitive routines that stifled their creativity. They save the money they once spent commuting. A reader of the Financial Times commented, "Change is uncomfortable, but with change comes opportunity. We lessen the need for costly and carbon generating travel and costly commercial office space."

In the words of a leading company's chief executive, "The world is going to be different when we come out of lockdown, and our habits will change. It really took the quarantine and self-isolation, to accelerate those trends."

Source: eslflow.com

1. What are large companies thinking about?
2. Why might companies prefer people to work in the office?
3. What might happen to cities if most people work from home?
4. What do you think are the main benefits of working at home?
5. Do you think you could work at home forever? Explain.

6. Complete the sentences with an appropriate word.

social interaction **distraction**

isolation **working remotely**

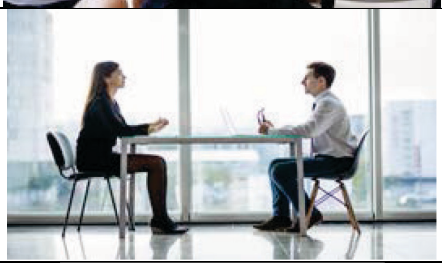
stressed **motivation**

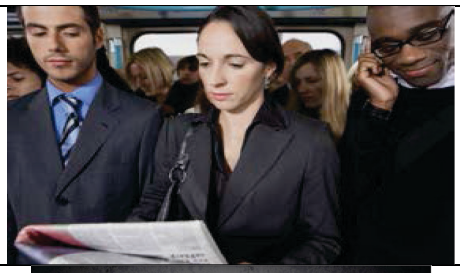
flexible **save money**

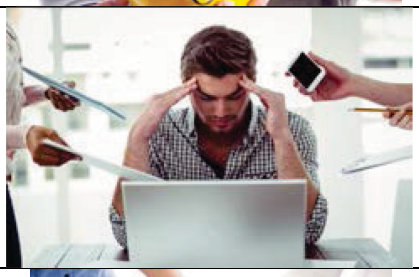
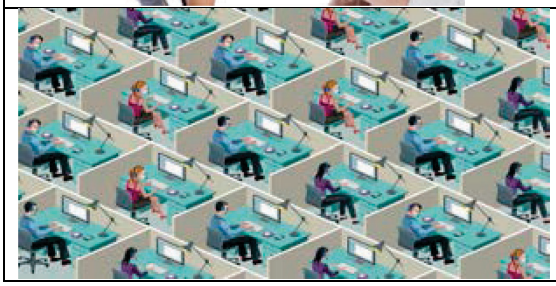
office space **commuters**

work as a team **face to face**

collaboration

	1. People are happier when they have lots of _____.
	2. You need to talk to people _____ to really understand them.
	3. There might be many _____when working at home.

	4. _____ face crowded trains and buses everyday.
	5. Your life is much more _____if you work at home.
	6. These days _____ is unexpectedly easy.
	7. Companies worry that staff at home might not _____. .
	8. One problem of working at home is social _____.
	9. Another problem of working at home might be _____.

	10. You will _____ if you work at home.
	11. People are more _____ in an office.
	12. _____ is easier in the office.
	13. Companies will need less _____ if people work from home.

7. Complete the sentences below with your own ideas.

1. _____is an example of a distraction at home.

2. I feel social isolation when _____

3. I like/don't like working in a team because _____

4. I feel stressed when _____

5. My favorite technology for working remotely is _____

6. My favorite kind of social interaction is _____

7. I would prefer a flexible/fixed work schedule because _____

8. Match the words with their definitions.

WORDS	DEFINITIONS
1. a mindset 2. supervision 3. employee retention 4. to commute 5. to work remotely 6. to micromanage 7. to hang around 8. a boundary	a. to stay or spend time in a place b. to travel regularly between work and home c. to work outside a traditional office environment, e.g. to work from home d. watching someone to make sure they do something correctly e. to manage people through excessive control and attention to detail f. a person's way of thinking g. a real or imaginary line that marks the limit of something h. an organisation's ability to keep its staff and not have them leave the company

9. Read the text and choose whether the sentences are TRUE or FALSE

1. Fred's director doesn't want Fred working remotely because he sees Fred making small talk and not working when he's in the office. **– TRUE / FALSE**

2. If Fred was allowed to work from home, he'd work less and spend more time with his children. **– TRUE / FALSE**

3. It is easy for a manager to know if a remote worker is not working effectively. **– TRUE / FALSE**

4. Bosses who are very controlling get better results from their team. **– TRUE / FALSE**

5. Giving employees more flexible working conditions doesn't really benefit the company. **– TRUE / FALSE**

6. People who work from home often end up working longer hours than when working in the office. **– TRUE / FALSE**

Fred works for a traditional company that expects him to start at 8.30 a.m. and leave at 5.30 p.m. or later every day. Most of his work is done on a project basis and, as a manager, he is responsible for the quality of work that is produced and for meeting deadlines. On most days of the week, there is often extra work to be done on a project, and Fred stays late in the office or brings his work home. Occasionally, when he finishes all his work before 5.30 p.m., he finds himself hanging around, chatting with colleagues and waiting for the time he can officially leave.

With two small children at school, Fred has to use up his annual leave in order to take time off when his children are ill, when he wants to attend their sports day or any time the kids have a half-day at school. Fred also lives an hour's drive from his office and therefore spends two hours a day commuting.

In the interest of increasing productivity and making better use of his time, Fred suggested the idea of flexible working to his director. His director, however, rejected his suggestion, saying that he saw flexible working as problematic for the company.

Fred's director isn't alone in this thinking. In many organisations, there is still a culture in which the employee who arrives the earliest and leaves the latest is considered the most hard-working, and many bosses still believe that they can't trust their employees to work remotely. They worry that there are too many distractions for workers at home or that team working and communication won't be as good if workers are physically disconnected from each other. Some employers think management is about the close supervision of employees to direct and control not just what is done but also exactly how it is done.

However, the nature of a lot of work today involves meeting deadlines, achieving certain objectives and hitting targets. As most people who've worked in these kinds of environments know, productivity is less about how many hours you spend in the office and more about how well you meet those goals. Even though they're outside the office, the remote worker who is not meeting targets is quickly noticed. Micromanaging bosses don't help productivity either. In fact, research shows that controlling bosses can have a negative effect on their employees' performance.

In contrast, giving employees the freedom to organise their working schedule to fit with their personal life means they are working when they are best able to engage fully with their work and are therefore more efficient and productive. Having choices in their working environment and timetable creates responsible and motivated workers who are likely to get better results, knowing they can meet the demands of both their job and their personal life.

Whether it is giving employees the right to work remotely, offering job sharing or part-time working, or allowing non-fixed start and finish times, flexible working is not just about practical working arrangements but also about a culture and a mindset. For example, many remote workers find themselves working past their working hours, partly because there is no commuting to mark the boundaries between work and personal life, making it hard to switch off from work. Companies might need to consider training both workers and management staff to help them better understand what flexible working is, how to implement it and how to encourage a results-driven approach. Only then can flexible working truly result in happier employees, increased productivity and better employee retention.

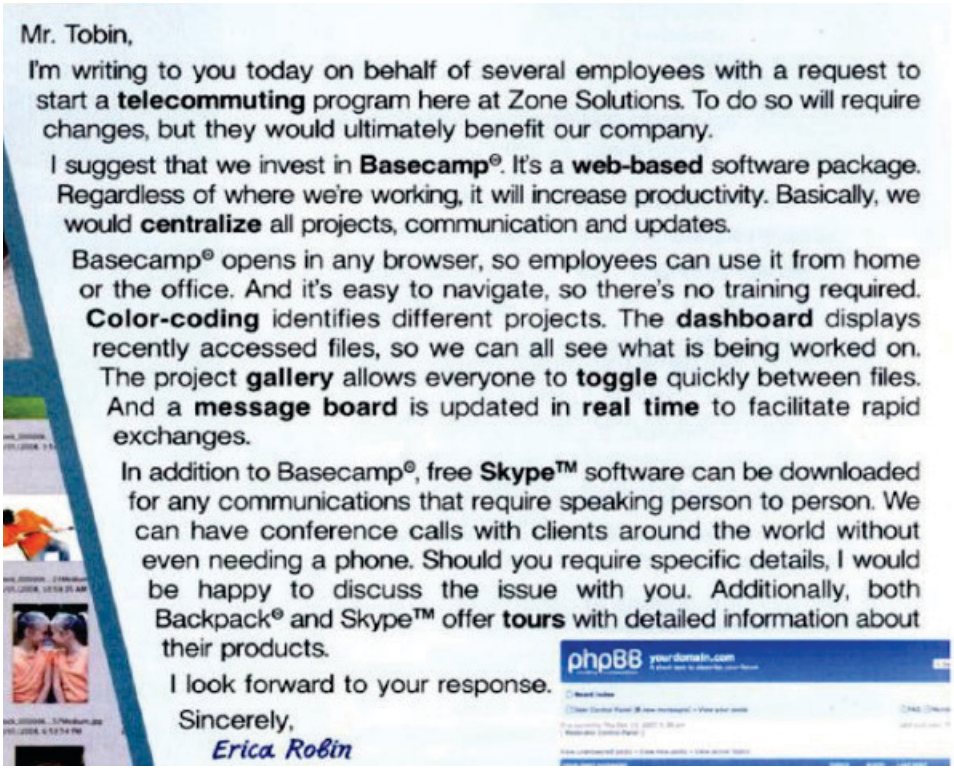
Source: https://learnenglish.britishcouncil.org/business-english/business-magazine/flexible-working

10. Complete the sentences with the words given below.

boundary retention remotely freedom mindset hours

1. Working …… means that employees can use their commuting time to work.
2. Flexible working gives employees more ……to make their own decisions and they become more engaged with their work.
3. Remote workers are more motivated and may work past their normal working …….
4. If employees are happier, they are less likely to leave for another company. Flexible working can improve employee …… rates.
5. One disadvantage for remote workers may be that there is less of a …… between work and personal life.
6. For flexible working arrangements to work well, staff who are used to traditional ways of working may need to change their …… .

11. Read the letter from an employee to a business owner. Then choose the right answer.



Mr. Tobin,

I'm writing to you today on behalf of several employees with a request to start a **telecommuting** program here at Zone Solutions. To do so will require changes, but they would ultimately benefit our company.

I suggest that we invest in **Basecamp©**. It's a **web-based** software package. Regardless of where we're working, it will increase productivity. Basically, we would **centralize** all projects, communication and updates.

Basecamp© opens in any browser, so employees can use it from home or the office. And it's easy to navigate, so there's no training required. **Color-coding** identifies different projects. The **dashboard** displays recently accessed files, so we can all see what is being worked on. The project **gallery** allows everyone to **toggle** quickly between files. And a **message board** is updated in **real time** to facilitate rapid exchanges.

In addition to Basecamp©, free **Skype™** software can be downloaded for any communications that require speaking person to person. We can have conference calls with clients around the world without even needing a phone. Should you require specific details, I would be happy to discuss the issue with you. Additionally, both Backpack© and Skype™ offer **tours** with detailed information about their products.

I look forward to your response.

Sincerely,

Erica Robin

Source: https://www.liveworksheets.com/le2865977si

1. What is the employee doing in the letter?

a) Requesting that the company reorganize projects.
b) Proposing an expansion of the telecommuting programme.
c) Suggesting that the company create web-based software.
d) Explaining how employees could work from home.

2. According to the letter, the dashboard

a) identifies projects by colour.
b) helps users toggle between files.
c) shows what is being worked on.
d) allows communication without a phoner.

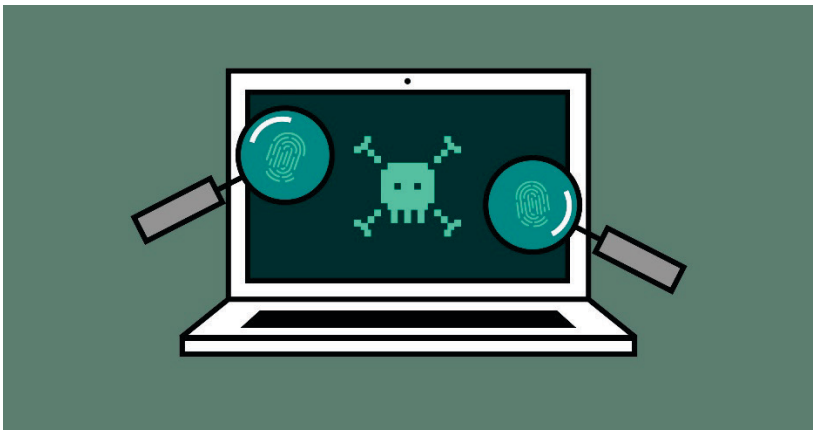
3. What can be inferred about Skype?

a) It is a part of Basecamp software package.
b) It requires users to pay a monthly subscription.
c) It provides better sound quality than phones.
d) It allows users talk to each other on computers.

12. Match the words with their definitions.

WORDS	DEFINITIONS
1. toggle	a. to work away from the office using technology
2. dashboard	b. being updated as new information arrives
3. real time	c. a series of pages that offer information about a product
4. telecommute	d) to switch from one file to another
5. web-based	e) available on the Internet
6. message board	f) a display that shows recently used files

HACKERS AND VIRUSES



1. Read the profiles of the first hackers and complete the sentences with *Draper*, *Morris* or *Poulsen*.

1. _____ didn't use a computer to hack something.
2. _____ now teaches students.
3. _____ is now a journalist.
4. _____ shared his hacking secrets with some famous people.
5. _____ went to prison after the police arrested him in a store.
6. _____ wasn't trying to commit a crime.

2. Read the text again and answer the questions below.

1. What did Draper learn to do?
2. How did the police discover his hacking?
3. How many computers were using the Internet when Morris wrote his worm?
4. Why didn't Morris go to Prison?
5. What did Poulsen win?
6. Where did the police catch him?

Early Hackers

John Draper was one of the first hackers. He discovered how to hack the U.S. phone system with ... a toy whistle, free in a box of cereal! With the whistle, Draper could make free phone calls. After an article about the discovery appeared in a popular magazine, the police arrested Draper. But he didn't go to prison, that time.

Later Draper taught two young computer students to hack the phone system. Who were they? Steve Jobs and Steve Wozniak – the founders of Apple computers! Draper now organizes hacking conferences.

In the 1960s and 1970s, phone companies used sounds to control the phone system. Draper used a toy whistle to make these sounds. The result? Free phone calls!

Robert Tappan Morris was studying in college when he wrote the first computer "worm." A worm is a type of computer virus. Over 6,000 computers got the Morris worm – 10% of the computers on the Internet at that time. The Morris worm only caused computers to work slowly. It didn't take any information from them, so he didn't go to prison. But he had to pay $10,050. Morris is now a computer science professor at a university.

Early Hackers

Like Draper, **Kevin Poulsen** was interested in hacking phone systems. But he used a computer to control the phone system. One day, there was a radio competition: the 102nd person to phone the radio station won a Porsche car! Kevin used his hacking skills and won the car easily. In total, Poulsen won two Porsches, two vacations in Hawaii, and $20,000! The police tried to arrest Poulsen, but he escaped. They caught him eighteen months later while he was shopping in a supermarket. He spent five years in prison. Poulsen now writes for a magazine.

Source: *https://www.liveworksheets.com/worksheets/en/English_as_a_Second_Language_%28ESL%29/Reading_comprehension/The_early_hackers_dn1249580qq*

3. Put these words into the spaces in the paragraphs below.

TEXT 1a

happened experts ransom military safe blocks safe originally

The technology company Microsoft is (1) _____ with America's National Security Agency (NSA). Microsoft said the WannaCry ransomware cyber-attack (2) _____ because the NSA keeps lots of cyber-weapons on its computers. Ransomware is a type of harmful software that (3) _____ access to a computer until the owner of the computer pays money (a (4) _____) to the hackers. The NSA is America's (5) _____ intelligence organization. It helps to keep America's communications and information systems (6) _____. It is also responsible for stopping cyber-attacks against the USA. However, (7) _____ say the WannaCry ransomware used computer spying tools (8) _____ designed by the NSA.

TEXT 1b

yet storing caused affected operations stealing wave such

Microsoft president Brad Smith said governments needed to wake up to the problem of (9) _____ cyber-weapons that hackers can steal. He said it was as big a problem as someone (10) _____ missiles from the USA. When talking about the WannaCry attack, he said: "This attack provides (11) _____ another example of why the stockpiling of [these things] by governments is (12) _____ a problem." The European police agency Europol said WannaCry has (13) _____ 200,000 computers in 150 countries. In the UK, WannaCry (14) _____ many problems with the work of Britain's National Health Service. Many (15) _____ were cancelled. Experts warned people to back up their files because a second (16) _____ of attacks could come.

Source: https://breakingnewsenglish.com/1705/170518-ransomware.html#google_vignette

4. Answer the questions below.

a) How dangerous are cyber-attacks?

b) How could cyber-attacks be used in wars?

c) What cyber-attacks do you know about?

d) What do you do to protect your computer?

e) Why can't governments stop hackers?

5. Match the following synonyms from the above texts.

A	B
1. angry	a. presents
2. happened	b. furious
3. harmful	c. keeping
4. responsible for	d. occurred
5. originally	e. created
6. storing	f. first
7. stealing	g. in charge of
8. provides	h. advised
9. caused	i. thieving
10. warned	j. dangerous

6. Put these words into the spaces in the paragraphs below.

TEXT 2a

altered breached compromised access charged profile funds former

Three people have been (1) _____ for their alleged involvement in the massive hacking attack on Twitter that took place on July the 15th. Hackers hacked into 130 high- (2) _____ accounts, including those of (3) _____ US President Barack Obama, presidential candidate Joe Biden, rapper Kanye West, Amazon CEO Jeff Bezos and SpaceX and Tesla CEO Elon Musk. The accounts of companies like Apple and Uber were also (4) _____. The hack was part of a bitcoin scam. The perpetrators (5) _____ Twitter's administrative tools to gain (6) _____ to the accounts. They then (7) _____ the accounts to post legitimate-looking tweets that informed followers they could double any (8) _____ sent to a bitcoin account.

Put these words into the spaces in the paragraph below.

TEXT 2b

worth **felony** **citizens** **mastermind** **perpetrated** **suspects** **multiple** **false**

The three (9) _____ were arrested on Friday. One is a 19-year-old from the United Kingdom, the other two are American (10) _____ aged 17 and 22. The 17-year-old is a resident of Florida. State investigators believe him to be the (11) _____ of the hack. A state attorney has filed 30 (12) _____ charges against him for "scamming people across America". The teen faces (13) _____ charges, including 10 counts of fraudulent use of personal information. A lawyer told CNN: "There is a (14) _____ belief within the criminal hacker community that attacks like the Twitter hack can be (15) _____ anonymously and without consequence." The hack resulted in 415 transfers being made into the suspects' bitcoin accounts, (16) _____ nearly $118,000.

7. Match the words from the above texts with their definitions..

TEXT 2a

WORDS	DEFINITIONS
1. alleged 2. involvement 3. candidate 4. breached 5. scam 6. perpetrator 7. legitimate	a. The fact or condition of being part of an event or situation. b. A dishonest scheme; a fraud. c. Made a gap in and break through a wall, barrier, security system or defense. d. A person who applies for a job or is nominated for election. e. Said, without proof, to have taken place or happened. f. Conforming to the law or to rules. g. A person who carries out a harmful, illegal, or immoral act.

TEXT 2b

WORDS	DEFINITIONS
1. suspect 2. resident 3. attorney 4. felony 5. fraudulent 6. anonymously 7. consequence	a. In a way that prevents a person from being identified by name. b. A person thought to be guilty of a crime or offense. c. Obtained, done by, or involving deception, especially criminal deception. d. A result or effect of an action or condition. e. A lawyer f. A crime. g. A person who lives somewhere permanently or on a long-term basis.

8. Translate the text below.

The terms "**virus**" and "**malware**" are often used interchangeably. However, they are technically different, so the question of malware vs. viruses is an important one.

Malware is a catch-all term for any type of malicious software, regardless of how it works, its intent, or how it's distributed. A virus is a specific type of malware that self-replicates by inserting its code into other programs. Computer viruses have been prominent since almost the beginning of the commercial internet: The first one was created in 1982 for the Apple II, and other versions quickly followed.

Viruses spread by attaching themselves to legitimate files and programs, and are distributed through infected websites, flash drives, and emails. A victim activates a virus by opening the infected application or file. Once activated, a virus may delete or encrypt files, modify applications, or disable system functions.

Examples of malware vs. viruses

There are many different types of viruses. These are the three most common examples:

- The file infector can burrow into executable files and spread through a network. A file infector can overwrite a computer's operating system or even reformat its drive.
- The macro virus takes advantage of programs that support macros. Macro viruses usually arrive as Word or Excel documents attached to a spam email, or as a zipped attachment. Fake file names tempt the recipients to open the files, activating the viruses. An old but still prominent type of malware, macro viruses, remain popular with hackers.

- Polymorphic viruses modify their own code. The virus replicates and encrypts itself, changing its code just enough to evade detection by antivirus programs.

Malware encompasses all types of malicious software, including viruses, and may have a variety of goals. A few of the common objectives of malware are:

- Trick a victim into providing personal data for identity theft
- Steal consumer credit card data or other financial data
- Assume control of multiple computers to launch denial-of-service attacks against other networks
- Infect computers and use them to mine bitcoin or other cryptocurrencies

The five types of malware

Besides viruses, multiple other types of malware can infect not only desktops, laptops, and servers, but also smartphones. Malware categories include the following:

- Worms. A worm is a standalone program that can self-replicate and spread over a network. Unlike a virus, a worm spreads by exploiting a vulnerability in the infected system or through email as an attachment masquerading as a legitimate file. A graduate student created the first worm (the Morris worm) in 1988 as an intellectual exercise. Unfortunately, it replicated itself quickly and soon spread across the internet.
- Ransomware. As the name implies, ransomware demands that users pay a ransom—usually in bitcoin or other cryptocurrency—to regain access to their computer. The most recent category of malware is ransomware, which garnered headlines in 2016 and 2017 when ransomware infections encrypted the computer systems of major organizations and thousands of individual users around the globe.
- Scareware. Many desktop users have encountered scareware, which attempts to frighten the victim into buying unnecessary software or providing their financial data. Scareware pops up on a user's desktop with flashing images or loud alarms, announcing that the computer has been infected. It usually urges the victim to quickly enter their credit card data and download a fake antivirus program.
- Adware and spyware. Adware pushes unwanted advertisements at users and spyware secretly collects information about the user. Spyware may record the websites the user visits, information about the user's computer system and vulnerabilities for a future attack, or the user's keystrokes. Spyware that records keystrokes is called a keylogger. Keyloggers steal credit card numbers, passwords, account numbers, and other sensitive data simply by logging what the user types.
- Fileless malware. Unlike traditional malware, fileless malware does not download code onto a computer, so there is no malware signature for a virus scanner to detect. Instead, fileless malware operates in the computer's memory and may evade detection by hiding in a trusted utility, productivity tool, or security application. An example is Operation RogueRobin, which was uncovered in July 2018. RogueRobin is spread through Microsoft Excel Web Query files that are attached to an email. It causes the computer to run PowerShell command scripts, providing an attacker access to the system. As PowerShell is a trusted part of the Microsoft platform, this attack typically does not trigger a security alert. Some fileless malware is also clickless, so a victim does not need to click on the file to activate it.

Source: https://www.trellix.com/en-us/security-awareness/ransomware/malware-vs-viruses.html

IDENTITY THEFT

1. Warm-up

What is identity theft? Identity theft is a serious crime. It happens when someone uses information about you without your permission. This can result in painful results for your life. Has this happened to you before? Do you think this can ever happen to you?

2. Below are some ways people can steal your identity. Read the words and try to guess their correct meaning.

A) Shoulder surfing

B) Skimming

C) Phishing

D) Dumpster diving

1. _____ Looking through trash to locate documents containing sensitive personal information or account information, such as Social Security Numbers, credit card or bank account numbers, etc.

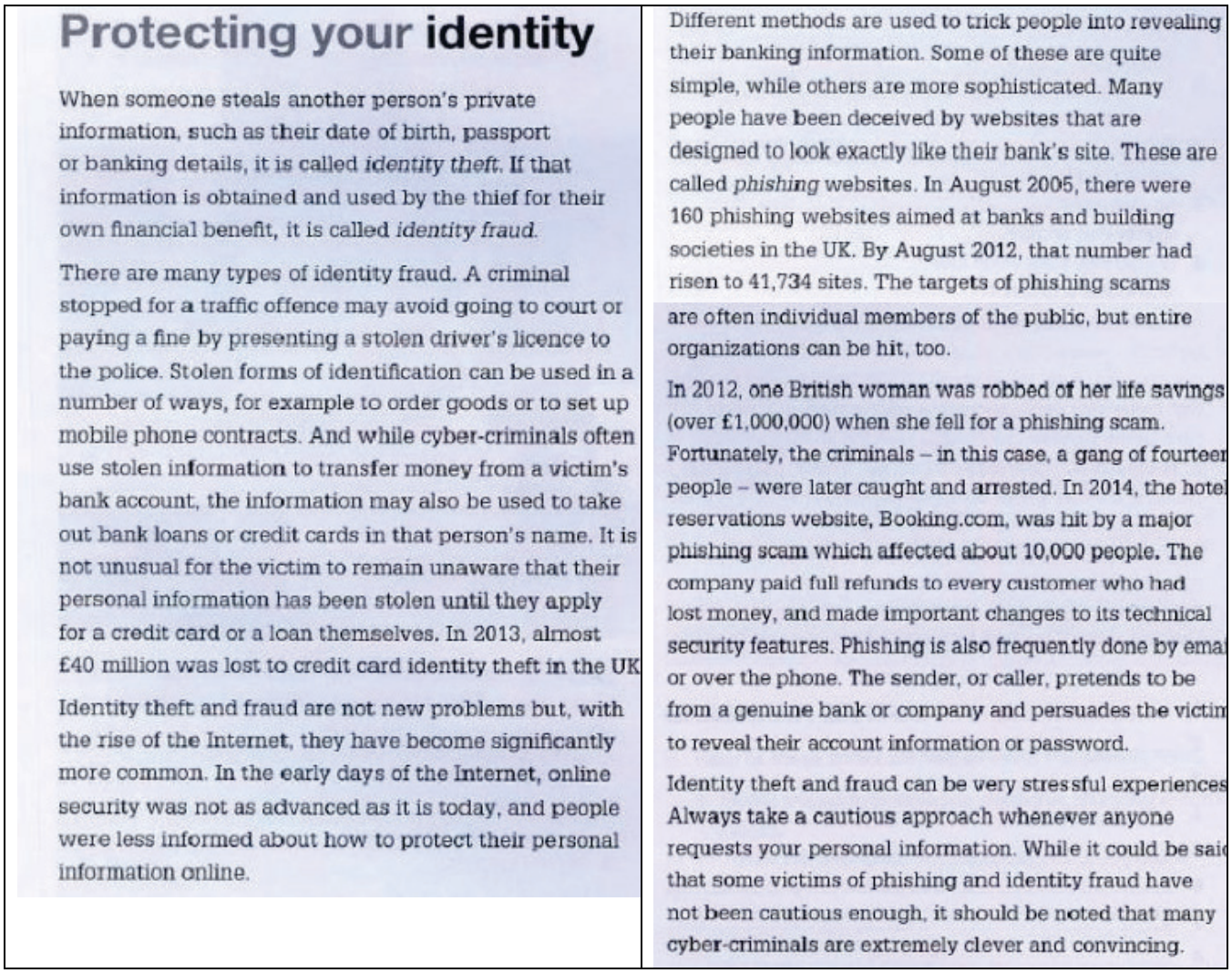
2. _____ A practice where a special storage device is used to “swipe” your card.

3. _____ The practice of sending e-mail messages or displaying browser pop ups that appear to be generated by a real financial institution.

4. _____ When a criminal observes you completing a transaction to see or hear sensitive personal information such as PIN or Social Security Numbers.

3. Read the text and mark the statements as TRUE or FALSE.

STATEMENTS	TRUE	FALSE
1. According to the article, the criminal could get away without paying a traffic fine by presenting a stolen driver's licence to the police.		
2. Most victims of identity theft never find out that their information has been stolen.		
3. The arrival of the Internet has increased the cases of identity theft and fraud.		
4. Phishing scams are limited to individual members of the public		
5. All phishing scams are carried out by phone.		
6. It's important to be extremely careful because cyber-criminals are usually very smart.		



Protecting your identity

When someone steals another person's private information, such as their date of birth, passport or banking details, it is called *identity theft*. If that information is obtained and used by the thief for their own financial benefit, it is called *identity fraud*.

There are many types of identity fraud. A criminal stopped for a traffic offence may avoid going to court or paying a fine by presenting a stolen driver's licence to the police. Stolen forms of identification can be used in a number of ways, for example to order goods or to set up mobile phone contracts. And while cyber-criminals often use stolen information to transfer money from a victim's bank account, the information may also be used to take out bank loans or credit cards in that person's name. It is not unusual for the victim to remain unaware that their personal information has been stolen until they apply for a credit card or a loan themselves. In 2013, almost £40 million was lost to credit card identity theft in the UK.

Identity theft and fraud are not new problems but, with the rise of the Internet, they have become significantly more common. In the early days of the Internet, online security was not as advanced as it is today, and people were less informed about how to protect their personal information online.

Different methods are used to trick people into revealing their banking information. Some of these are quite simple, while others are more sophisticated. Many people have been deceived by websites that are designed to look exactly like their bank's site. These are called *phishing* websites. In August 2005, there were 160 phishing websites aimed at banks and building societies in the UK. By August 2012, that number had risen to 41,734 sites. The targets of phishing scams are often individual members of the public, but entire organizations can be hit, too.

In 2012, one British woman was robbed of her life savings (over £1,000,000) when she fell for a phishing scam. Fortunately, the criminals – in this case, a gang of fourteen people – were later caught and arrested. In 2014, the hotel reservations website, Booking.com, was hit by a major phishing scam which affected about 10,000 people. The company paid full refunds to every customer who had lost money, and made important changes to its technical security features. Phishing is also frequently done by email or over the phone. The sender, or caller, pretends to be from a genuine bank or company and persuades the victim to reveal their account information or password.

Identity theft and fraud can be very stressful experiences. Always take a cautious approach whenever anyone requests your personal information. While it could be said that some victims of phishing and identity fraud have not been cautious enough, it should be noted that many cyber-criminals are extremely clever and convincing.

Source:https://www.liveworksheets.com/worksheets/en/English_as_a_Second_Language_%28ESL%29/Passive_voice/Reading_comprehension_and_passive_voice_rp1326052ap

4. Watch the video where you will see a victim of identity theft (*Metro Detroit woman wanted for identity theft*). Then answer the questions below.

1.What is the name of the woman who had her identity stolen?

2.How old is the woman who had her identity stolen?

3.How much money was stolen?

4.Who took her money?

5.Where did the identity thief take the money from?

5. Watch the video *Secrets of An Identity Thief* and answer the questions below.

1. What are some steps that people can take to avoid exposing their personal data to thieves?

2. How many Americans are affected by identity theft annually?

3. What is the estimated annual cost of the value of identity theft losses?

4. What are some well-known companies whose data was hacked by criminals?

5. What are some ways that identity theft occurs? (four specific strategies are mentioned)

6. What do identity thieves do with stolen information?

7. What can people do to reduce their risk of becoming an identity theft victim? (four specific strategies are mentioned)

6. Translate the following types of fraud and identity theft.

Data breach: The unauthorized movement or disclosure of sensitive information to a party, usually outside the organization, that is not authorized to have or see the information. Someone who gets the data might use it for identity theft.

Elder financial exploitation: The illegal or improper use of an older adult's funds, property, or assets by family members, caregivers, friends, or strangers who gain their trust.

Foreclosure relief scam: Scheme to take your money or your house often by making a false promise of saving you from foreclosure; includes mortgage loan modification scams.

Fraud: An illegal act that occurs when people try to trick you out of your personal information and your money.

Identity theft: Using your personal information — such as your name, Social Security number, or credit card number — without your permission.

Imposter scam: An attempt to get you to send money by pretending to be someone you know or trust, like a sheriff; local, state, or federal government employee; a family member; or charity organization.

Mail fraud scam: Letters that look real but contain fake promises. A common warning sign is a letter asking you to send money or personal information now to receive something of value later.

Phishing scam: When someone tries to get you to give them personal information, such as through an email or text message, often by impersonating a business or government agency. This can be thought of as “fishing for confidential information.”

Romance scam: When a new friend says they like or love you, but they really just want your money—and may not be who they say they are.

Scam: A dishonest trick used to cheat somebody out of something important, like money. Scams can happen in person, through social media, or by phone, email, postal mail, or text.

Spoofing: When a caller disguises the information shown on your caller ID to appear as though they are calling as a certain person or from a specific location.

Tax-related identity theft: When someone steals your Social Security number to file a tax return claiming a fraudulent refund; may also be called tax-filing-related identity theft.

Wire transfer fraud: Tricking someone into wiring or transferring money to steal from them. One common example of a wire transfer fraud is the “grandparent scam.” This is when a scammer posing as a grandchild or a friend of a grandchild calls to say they are in a foreign country, or in some kind of trouble, and need money wired or sent right away.

PREVENTIVE MEASURES

1. Translate the text.

Best Antivirus 2023

Choosing the best antivirus solution for your computer can be a daunting task due to the number of criteria that must be considered. You may want a basic security solution for your PC or laptop or a highly advanced protection system for the entire family, capable of shielding your devices from viruses, hacker attacks, and fraud. If you're having trouble making up your mind, then the following reviews are just for you. *What's The Best Antivirus Solution?*

Bitdefender, the antivirus brand trusted by 500 million-plus users across 150 countries, is one of the world's leading providers of consumer cybersecurity products and a pioneer in antivirus protection. This brand has won multiple antivirus awards from leading online test laboratories, including AV-Comparatives, AV-Test, PCMag, and The Anti-Malware Testing Standard Organization.

Bitdefender → Compatibility: iOS	✓ Highly-rated virus detection capability ✓ Includes a basic package with premium features ✓ Chat safely in popular social networks ✓ Surf the web safely and anonymously ✓ Extends battery life on laptops and tablets ✓ Protects mobile devices from physical theft ✓ **60% discount between 20-27 January** ✓ Award-winning detection recognized by:

TOTAL AV → Compatibility: iOS	✔ Quickly eliminates viruses, trojans, adware, spyware, ransomware, and more ✔ Features real-time antivirus protection that displays daily virus definition updates ✔ Compatible with desktop computers, laptops, smartphones & tablets ✔ Provides remote access to your device's firewall settings ✔ Trusted by millions of people across the globe ✔ Free Safe Site browser extension which analyzes and blocks suspicious websites
norton → Compatibility: iOS	✔ Detects viruses without raising false flags ✔ Backs up data and stores it in the cloud ✔ Protects usernames and passwords ✔ Prevents hackers from infiltrating your system ✔ Allows you to manage your devices from an online portal ✔ Prevents and helps you to recover from identity theft
McAfee → Compatibility: iOS	✔ Protects an unlimited number of devices ✔ Allows you to fix security issues remotely ✔ Removes malware or your money back ✔ Almost no false/positives were recorded ✔ Prevents scam attempts in their tracks ✔ Includes an encrypted folder for document storage
kaspersky → Compatibility: iOS	✔ Features a robust scanning and detection system ✔ Undoes damage caused by virus infection ✔ Protects children from harmful content ✔ Cleans and optimizes your computer ✔ Protects data from theft and accidental loss or damage ✔ Feature-rich, mid-range package

panda → Compatibility: iOS	✓ Prevents virus infections from USB drives ✓ Spots dangerous processes with ease ✓ Identifies potential security risks in public Wi-Fi networks ✓ Strong encryption for your private files ✓ Allows you to store essential documents in the cloud ✓ Cleans and optimizes your computer
intego → Compatibility: iOS	✓ Highly rated on Mac from independent testers ✓ Features a powerful firewall that prevents hackers ✓ Blocks and eliminates the latest Mac threats ✓ Blocks suspicious websites and phishing attempts ✓ Cleans, optimizes, and fine-tunes your Mac ✓ Prevents virus infections from USB drives
eset → Compatibility: iOS	✓ Blocks and eliminates the latest virus threats ✓ Allows you to use your device with limited interruption ✓ Secure browser for safe online shopping ✓ Prevents hackers from stealing personal data ✓ Allows you to store passwords in a secure database ✓ Encrypts photos and protects your private memories
AVIRA → Compatibility: iOS	✓ Recipient of high ratings from independent testers ✓ Scans removable devices for malware threats ✓ Blocks suspicious websites and phishing attempts ✓ Prevents zero-hour threats in real-time ✓ Cleans and optimizes your computer
avast → Compatibility: iOS	✓ Locates and eliminates viruses ✓ Prevents hackers from exploiting vulnerabilities ✓ Minimal impact on your computer's performance ✓ Protects against online scams ✓ Prevents credit card theft ✓ Removes unwanted browser extensions

Source: https://www.antivirusguide.com/best-antivirus/

2. Match the underlined words in the text with their definitions below.

a) to make s’th last longer
b) to make small changes to something in order to make it as good or as effective as possible
c) very difficult
d) ability of being physically or emotionally wounded
e) able to be used together
f) neither the most expensive nor the cheapest of their type
g) to protect
h) to remove
i) to enter secretly in order to spy

CLOUD COMPUTING

1. Fill in the blanks with the words given below.

1. _____ is a technology that provides resources and services over the internet.
2. _____ includes accessing software and storing files online.
3. _____ is an online office suite, in which you can create ,edit and share documents.
4. _____ cloud offers the services to a limited and well defined number of parties.
5. _____ provides a cloud platform and allows developers to create, test, and run their program, website, web app, etc.
6. _____ include email messages, schedules, music, photos, video games, storage etc.

service | hybrid | PAAS | Cloud computing | resources | Google docs

2. Watch the video *Cloud Services Explained* and mark the statements below as TRUE or FALSE.

STATEMENTS	TRUE	FALSE
1. In the video 2 cloud service platforms are mentioned – Amazon Web Services and Microsoft Azure.		
2. Cloud services are told super technical solutions.		
3. Cloud services are compared to building a new house because it helps to visualize.		
4. When you have a new house, you can get electricity in 3 ways.		
5. It's cheap to generate your own electricity.		
6. If you throw a massive party, you will need a lot more electricity.		
7. You can try to build your own nuclear plant in your attic.		
8. When you buy electricity from the power company, you should pay a weekly fee.		
9. Cloud service platforms don't work the same way as a power company.		
10. Instead of building and maintaining everything yourself you can use cloud service platforms.		

3. Questions to reflect on.

1. What is *Cloud Computing*?

2. Could you name some well-known hosting companies that provide cloud services?

3. What are the benefits of cloud storage?

Benefits	Explanation
Cost and convenience	
Availability	

4. What are the concerns that evolve around cloud storage?

Concerns	Explanation
Reliability of the network	
Software	

5. What does **'ubiquitous'** mean?

6. Write down a definition for **ubiquitous computer systems**.

4. Translate the text.

What is cloud computing?

"Cloud is a model of computing where servers, networks, storage, development tools, and even applications (apps) are enabled through the internet." – Accenture. The cloud is a virtual space where connected users can access different computing services at any given time and place. Software and applications that are not located or stored in the user's personal devices and need the internet to operate are considered as cloud services. Streaming services like Netflix and Spotify are popular cloud services nowadays. Users enjoy a huge catalog of shows and songs without the burden of downloading and storing the media in their personal devices. Most users find web-based email and messaging services essential to daily life. These cloud services like Gmail and Messenger make communication faster and easier for all. Users can store important files, pictures and videos in the cloud. Services like Google Drive, Dropbox, and iCloud help users do as such and also allow them to instantly share these files with authorized people. Productivity applications are also available in the cloud. Google came up with Google Workspace so users can access different productivity applications in one place. It includes several tools like a word processor, presentation builder, spreadsheets, survey builder, and more. The workspace also encourages users to collaborate with others. Users can instantly share their work with other individuals or their teams. They can allow these people to edit and add comments. Web-based design and editing platforms like Canva and Fotor are also part of the cloud. Users can instantly edit photos and create graphic designs online. There is no need for them to buy and download expensive creative apps or software to accomplish these things. Social networking services like Facebook and Instagram allow users to share thoughts, pictures, and videos on their online profile and help them stay connected with friends and family.

5 Major Attributes of Cloud Computing

- Internet Access. Users can only **acquire** cloud services by connecting to the internet, so internet access is an essential part of cloud computing.

- Measured Service. In this context, users only pay for the service or resource they acquire in the cloud. This idea is somehow similar to how phone companies monitor users' activity (e.g., number of calls) and bills them accordingly. This type of model is called pay-per-use.

- **On-Demand** Self-Service. Users access services or resources they need on their own at any given time and place. For example, connected users can access their email using any web browser. They can easily send emails using their account in the Gmail website.

- Shared Resource Pooling. Cloud service providers **pool** resources that several clients can **tap into**, even if they have different sets of needs.

- Rapid Elasticity. The cloud is expected to be **resilient**. It should efficiently serve users, quickly adapt to changes, and immediately recover from any disruption or damage.

3 Major Types of Cloud Computing

Private cloud services are delivered from a business's data center to internal users. With a private cloud, an organization builds and maintains its own underlying cloud infrastructure. This model offers the **versatility** and convenience of the cloud, while preserving the management, control and security common

to local data centers. Internal users might or might not be billed for services through IT **chargeback**. Common private cloud technologies and vendors include VMware and OpenStack.

In the public cloud model, a third-party cloud service provider (CSP) delivers the cloud service over the internet. Public cloud services are sold on demand, typically by the minute or hour, though long-term commitments are available for many services. Customers only pay for the central processing unit cycles, storage or bandwidth they consume. Leading public CSPs include AWS, Microsoft Azure, IBM and Google Cloud Platform (GCP), as well as IBM, Oracle and Tencent.

A hybrid cloud is a combination of public cloud services and an **on-premises** private cloud, with **orchestration** and automation between the two. Companies can run mission-critical workloads or sensitive applications on the private cloud and use the public cloud to handle workload bursts or spikes in demand. The goal of a hybrid cloud is to create a unified, automated, **scalable** environment that takes advantage of all that a public cloud infrastructure can provide, while still maintaining control over **mission-critical** data.

Advantages of cloud computing

- Self-service provisioning. End users can spin up compute resources for almost any type of workload on demand. An end user can provision computing capabilities, such as server time and network storage, eliminating the traditional need for IT administrators to provision and manage compute resources.

- Elasticity. Companies can freely scale up as computing needs increase and scale down again as demands decrease. This eliminates the need for massive investments in local infrastructure, which might or might not remain active.

- Pay per use. Compute resources are measured at a granular level, enabling users to pay only for the resources and workloads they use.

- Workload resilience. CSPs often implement **redundant** resources to ensure resilient storage and to keep users' important workloads running -- often across multiple global regions.

- Migration flexibility. Organizations can move certain workloads to or from the cloud -- or to different cloud platforms -- as desired or automatically for better cost savings or to use new services as they emerge.

- Broad network access. A user can access cloud data or upload data to the cloud from anywhere with an internet connection using any device.

- Multi-tenancy and resource pooling. **Multi-tenancy** lets numerous customers share the same physical infrastructures or the same applications yet still retain privacy and security over their own data. With resource pooling, cloud providers service numerous customers from the same physical resources. The resource pools of the cloud providers should be large and flexible enough so they can service the requirements of multiple customers.

5. Match the underlined words in the text with their definitions below.

a) the return of funds

b) excessive

c) an arrangement of events/things that attempts to achieve a maximum effect

d) to get something, for example by buying it or being given it

e) to put together, combine

f) the situation in which a single instance of software, running in a server, serves multiple tenants

g) essential for an organization to function successfully

h) when requested

i) strong, not easily damaged

j) local

k) dynamic, flexible

l) multifunctionality, flexibility

m) to access