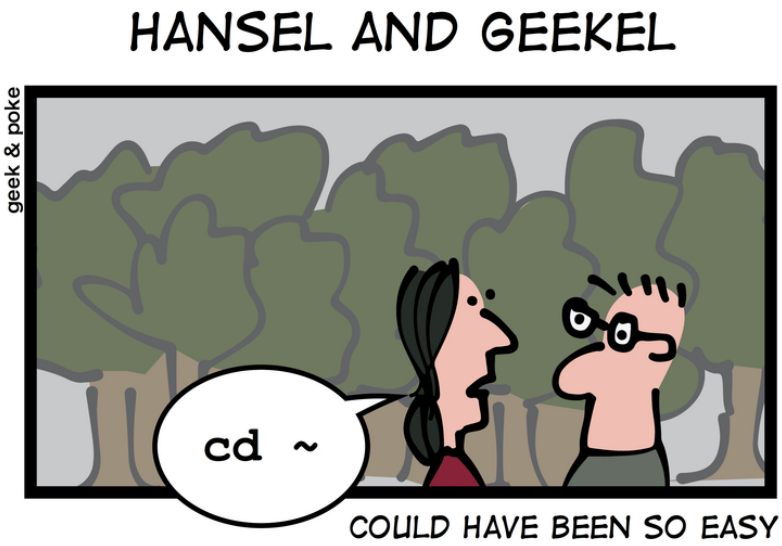
COMPUTER SCIENCE



http://geek-and-poke.com/geekandpoke/2014/7/31/hansel-and-geekel

X31 ENGLISH HANDOUT

Université de Nantes
2020-2021

X31A060
cecile-marie.lereste@univ-nantes.fr

PROGRAM

1	Listening skills: Big-O Notation
	Speaking skills: Pronunciation of technical terms
2	Listening and writing skills: Note-taking and summarizing
3	Listening skills: Press reviews
4	Listening skills: Enigma
	Speaking skills: Stress
	Vocabulary building: Colloquial vocabulary for presentations
5	Writing skills: Process descriptions
	Vocabulary building: Explaining the structure of presentations
6	Listening and speaking skills: Points of view / Debating
	Writing skills: Punctuation
7	Listening and reading skills: Algorithms
	Speaking skills: Intonation
8	Listening skills: Digital Art
	Presentation skills: Effective delivery
9	In-class prep
Project Presentations	
Sessions 10 through 12, or 9 through 12 if necessary	

ASSESSMENT: The module is assessed through 100% continuous assessment. You will be assessed on

- two written tests (50% of the final grade)
  - One multiple-choice language test for which you will prepare using the distance learning activities on MADOC. This will count for 10% of the final grade (20% of the written grade) and will be taken on MADOC. Your group teacher will tell you when to take the test.
  - One written test that will combine listening comprehension and writing. You will be given an audio document that will be between 15 and 30 minutes long. You will have to write a summary on the contents of the document in your own words (250 words, +/- 10%). The document will be made available on MADOC at a date your group teacher will specify. You will have two days from then to upload your text on the submission space on MADOC. (40% of the final grade, 80% of the written grade)
- your presentation (see opposite page) (50% of the final grade)

ATTENDANCE

Attendance is, of course, **compulsory**. Please remember to **notify your group teacher** (preferably in advance) if you cannot attend a lesson **AND to fill in the questionnaire on MADOC**. Please note that, if unaccounted for, **absences will lead to direct penalty** on your grade.

VERY IMPORTANT: TESTS AND JUSTIFIED ABSENCES

For any justified absence you will **have to take a resit** (or get zero for the corresponding mark).

To make sure you attend that resit, it is **your responsibility** to justify your absence on MADOC AND get in touch with the head of the module when you miss a test (cecile-marie.lereste@univ-nantes.fr).

MADOC DISTANCE LEARNING ACTIVITIES

The distance learning activities are compulsory and **must be completed by session 6** at the latest.

IMPORTANT: A NOTE TO NON-ATTENDEE STUDENTS (*étudiant-e-s dispensé-e-s d'assiduité*)

Assessment procedures for non-attendee students are specific. If you have or acquire this status in the course of the semester, **you cannot be assessed through continuous assessment**. If you have or acquire this status in the course of the semester and wish to **audit** the lessons, you must contact christine.foucat@univ-nantes.fr as early as possible to discuss your situation. This cannot be arranged directly with your group teacher.

TOEIC PREPARATION DISTANCE LEARNING COURSE

If you are considering taking the TOEIC test this semester, a training course is available on MADOC.

SCIENCE IN ENGLISH PROJECT

ASSIGNMENT

In groups of three, you will be asked to prepare a LITERATURE REVIEW on a topic of your choice.

1. You will prepare and present an oral presentation on a topic of your choice related to your field of study: your presentation should give an overview of the question, putting various sources in perspective. It should be structured, documented and personal (i.e. in your own words).

   You will have approximately 15 minutes (per group) to present your work and will be expected to use appropriate presentation tools.

   Following your presentation, you will be expected to answer questions from the audience.

   According to the "Dublin descriptors" that define international standards for learning outcomes at university, completion of a Bachelor's degree means that students should be able to "communicate information, ideas, problems and solutions to both specialist and nonspecialist audiences." Your presentation should therefore be clear even to non-specialists.

2. You will be asked to ask questions after one of your fellow students' group presentation. You will not present yourselves but should be sufficiently prepared to react to the proposed presentation.

3. For all oral presentations: you will have to make notes during the presentations and ask questions.

AIM & LEARNING OBJECTIVES

Language and communication:

- Developing your knowledge of specific vocabulary in context
- Improving oral and presentation skills

Scientific communication

- Practicing oral synthesis
- Interacting with a speaker/an audience

ASSESSMENT

Presentations will take place in the last 3 to 4 sessions.

You will receive individual marks based on your oral presentation (assessing content, communication, and language) as well as on your involvement in questioning.

INTERNATIONAL PHONETIC ALPHABET

Key to phonetic symbols for English

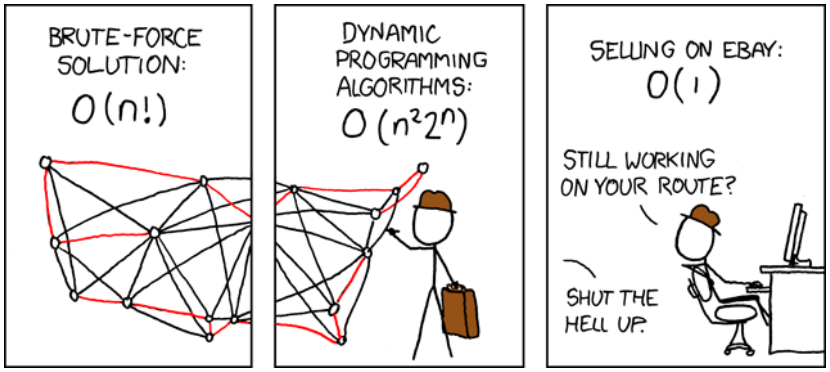
RP	Gen Am	Consonants	
•	•	p	pen, copy, happen
•	•	b	back, bubble, job
•	•	t	tea, tight, button
	•	ɾ	city, better
•	•	d	day, ladder, odd
•	•	k	cup, kick, school
•	•	g	get, giggle, ghost
•	•	tʃ	church, match, nature
•	•	dʒ	judge, age, soldier
•	•	f	fat, coffee, rough
•	•	v	view, heavy, move
•	•	θ	thing, author, path
•	•	ð	this, other, smooth
•	•	s	soon, cease, sister
•	•	z	zero, zone, roses, buzz
•	•	ʃ	ship, sure, station
•	•	ʒ	pleasure, vision
•	•	h	hot, whole, behind
•	•	m	more, hammer, sum
•	•	n	nice, know, funny, sun
•	•	ŋ	ring, long, thanks, sung
•	•	l	light, valley, feel
•	•	r	right, sorry, arrange
•	•	j	yet, use, beauty
•	•	w	wet, one, when, queen
In foreign words only:			
•	•	x	loch, chutzpah
•		ɬ	Llanelli, Hluhluwe

RP	Gen Am	Vowels	
•	•	ɪ	kit, bid, hymn
•	•	e	dress, bed
•	•	æ	trap, bad
•		ɒ	lot, odd, wash
•	•	ʌ	strut, bud, love
•	•	ʊ	foot, good, put
•	•	iː	fleece, sea, machine
•	•	eɪ	face, day, steak
•	•	aɪ	price, high, try
•	•	ɔɪ	choice, boy
•	•	uː	goose, two, blue
•		əʊ	goat, show, no
	•	oʊ	goat, show, no
•		ɒʊ	*variant in* cold
•	•	aʊ	mouth, now
•		ɪə	near, here, serious
•		eə	square, fair, various
•	•	ɑː	start, father
	•	ɑː	lot, odd
•	•	ɔː	thought, law, north, war
•		ʊə	cure, poor, jury
•		ɜː	nurse, stir
	•	ɜʳː	nurse, stir, courage
•	•	i	happy, radiation, glorious
•	•	ə	about, comma, common
•			father, standard
•	•	u	influence, situation, thank you
•	•	ɪ	intend, basic
•		ʊ	stimulus, communist
In foreign words only:			
•		ɒ̃	grand prix, chanson
	•	ɑ̃ː	grand prix, chanson
•	•	æ̃	vingt-et-un
•		ɜ̃ː	vingt-et-un

Source: Longman Pronunciation Dictionary

TECHNICAL VOCABULARY

VIDEO: BIG-O NOTATION



Travelling Salesman Problem
Source: https://xkcd.com/399/

1. Pre-viewing Vocabulary Activity: Match the following words with their definition

Word	*Definition*
1. Array	a. Data or similar information fed into a program
2. Runtime	b. The period during which a program is executing or length of time it takes to execute
3. Scaling	c. A collection of elements that all have the same data type and are stored contiguously in memory
4. Input	d. The fact of becoming bigger

2. Watch part 1 of the video and answer the questions
   a. What does Big-O notation describe?
   b. The South African company that set up the 2009 data race between a pigeon and the country's internet service provider was frustrated by ...

A. Data corruption when internet access is lost just before a download completes

B. Data transfer speeds

C. Data loss due to hard drive crashes

D. Data corruption when transferring large files

   c. How far apart were the two offices they used for their 2009 stunt?
   d. Why is this test ridiculous?
   e. True or False? The variable used in big-O notation represents the rate of growth of the input.

3. Watch part 2 of the video and answer the following questions
   a. Complete the following sentences with words or expressions from the video to explain the four rules of Big-O notation:

Rule 1: If you have two different steps in your algorithm, you ..... those steps. This will happen, for example, if you have an algorithm that first ..... one array and then ..... another array.

Rule 2: You ..... constants. So for instance if you want to print out the min and max ..... in an array and you have two algorithms, one that finds the min ..... and then finds the max ....., and the other that finds the min and max simultaneously, those two algorithms will both get ..... as O(n) if n is the size

TECHNICAL VOCABULARY

of the array. The fact that there are two different ..... does not mean that you will describe the first algorithm as O(2n) because you are looking at how things ..... roughly.

Rule 3: If you have different inputs, they will usually get represented by different ....., so if you have two arrays and you're ..... them to ..... the number of elements they have in common, the runtime is O(a * b) where a and b represent the sizes of the two arrays. The runtime is not $O(n^2)$ because then n would not represent anything.

Rule 4: You drop ..... If you have an algorithm that prints out the biggest element in an array and them prints all ..... in the array, the runtime of the algorithm is going to be $O(n^2)$ because it's the n^2 that is going to determine how the runtime changes here.

b. What are the Big-O representations of the following operations?

Finding an element in a sorted collection of items using binary search: .....

Finding the first element of an array: .....

Performing linear search in a matrix: .....

Finding an item in an unsorted collection of elements: .....

Source: Video tutorial by Gayle Laakmann McDowell, https://www.hackerrank.com/challenges/ctci-big-o/problem

For a little bit of fun reading, turn to Appendix C to read an excerpt of *Computational Fairy Tales* on Big-O Notation.

PRONUNCIATION OF TECHNICAL TERMS IN ENGLISH

1. How do you think those words and tech companies' names are pronounced? Watch the video to find out.

Xiaomi	Cyan	Cache	Verbatim
Yosemite	Meme	Adobe	Linux
OS X	Bose	Tag Heuer	Nokia
Huawei	Analytics	Quark	GIF
Asus	Patent	LaCie	

Source: https://www.macworld.co.uk/feature/apple/how-do-i-pronounce-3606383/

2. A few more: How are the following terms pronounced?

!	Array	Hierarchical	Niche
#	Bandwidth	Inheritance	Pwned
#!	Bin	Int	Regex
*	BIOS	Iteration	Router
^	Char	LaTeX	SQL
|	Daemon	Lib	Sudo
Algorithm	Data	Locale	

TECHNICAL VOCABULARY

SPEAKING PRACTICE: The Code Cards game

This game will be played in groups of 4 people.

The cards are from http://codecards.io/, where you can download and print your own set if you wish. There are four decks of cards, each with questions dealing with a different language: CSS, HTML, Javascript, or Ruby (although there will soon be an updated version of the game with an additional Python deck).

All students in each group will receive 5 cards from the same deck (no questions repeat within a deck). Make sure you do not look at the answers on the black side of the cards when you receive your cards!

In each round, students will read one question from their cards and answer it. If they answer correctly, they get 1 point. If they don't, they get 0 points. If they have a card that says "Give away X cards if you get me wrong," they will not give away any cards if they are wrong, but they will deduct X points from their total (even if that takes them into negative points).

At the end of the 5 rounds, the winner is the student with the most points in the group.

Once you've played a game, you can swap cards with another group. Just make sure the cards are a different color from those you've already played so that you get questions from a different deck.

DISTANCE LEARNING ALTERNATIVE: Coding Game

Log onto MADOC and click on the Coding Game link. You can play the game without creating an account.

NOTE-TAKING AND SUMMARIZING

SUMMARIZING METHODOLOGY

There is a good chance you will get to attend trade conferences in the future. If participants come from a large array of countries, the medium of expression will probably be English.

If you want to take anything away from such an event, you will have to write many things down. Taking notes during a live event like a lecture or speech requires method… especially if the lecturer is speaking in a language that is not yours. Below you will find a few tips and you will apply them by watching a Ted talk video and producing a summary of it from the notes you took while watching it. This will also be a practice exercise for the written test.

Credit: www.worldcitiessummit.com.sg

Tips on taking notes:

1. **Prepare in advance**
2. **Follow a note-taking method**
3. **Don't capture everything**
4. **Review and summarize your notes**

1. Prepare in advance:

Look at the title of the video you are about to watch and try to anticipate what it is going to be about.

TED Ideas worth spreading

TED 3 ways to make better decisions -- by thinking like a computer

Credit: Ted.com

→ What content do you expect from this title?

→ Do you have any previous personal knowledge or experience of the subject?

→ Do you have any personal interest in the subject? If so why?

→ Do you know some of the questions and problems related to the subject that scientists and engineers are still conducting research on right now?

You can use the following prompts to help you talk about your expectations:

I'm expecting the talk to be about…

I guess the speaker is going to offer/present/demonstrate…

Personally, I'm interested in the subject, mainly because…

I have read/watched a number of things on this, my takeaway (= conclusion) is that…

What I especially would like to learn more about is…

I'm hoping they're going to say they have solved…

NOTE-TAKING AND SUMMARIZING

2. Follow a note-taking method

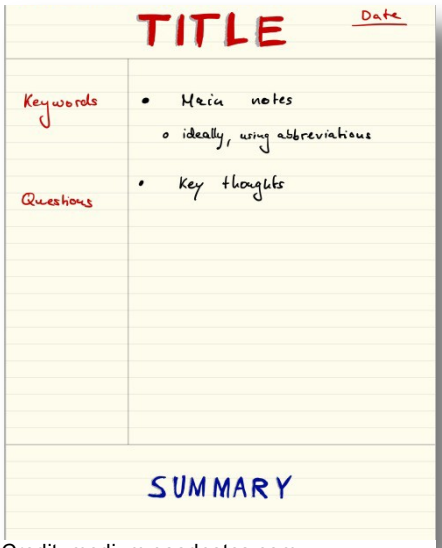
One critically acclaimed method is the **Cornell Note-Taking method**. It is a system for taking, organizing and reviewing notes and was devised by Prof. Walter Pauk of Cornell University in the 1950s.

The page will be divided into 4 — or sometimes only 3 — different sections: Two columns, one area at the bottom of the page, and one smaller area at the top of the page.

The idea behind this is very easy. All actual notes from the lecture go into the main note-taking column.

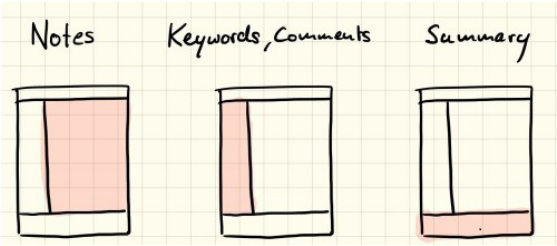
The smaller column on the left side is for questions about the notes that can be answered when reviewing and keywords or comments that make the whole reviewing and exam preparation process easier. When reviewing the notes, a brief summary of every page should be written into the section at the bottom.

There is a pdf on MADOC with more examples of Cornell notes if you want to explore the system a little bit more.



Credit: medium.goodnotes.com

- Use your answers to the previous exercise to write down items in the "Keywords and questions" section on the following page. This will help you check whether your expectations were correct, limited or incorrect while you are watching the video.



Credit: medium.goodnotes.com

3. Don't capture everything

- Now watch the video and jot down notes along the way.

→You cannot write down full sentences.

→You must select the 2-3 words that will enable you to produce a whole sentence again, once the video is over

→Ideally, you should use abbreviations

4. Review and summarize your notes

- Once you have watched the video, review your notes and add keywords, comments, and a very general summary.
- **Using all this, write an organized 250-word text summarizing the talk. Make sure that your summary follows the instructions below.**

The aim of your summary is to give the readers a condensed, structured, and objective account of the original document. After reading your text, readers should know what the overall point of the discussion is and should be able to identify the general ideas that run through the entire discussion. Those ideas must be expressed using precise and specific language. You must rephrase the audio/video using your own words and you must give an overview of the points raised in the discussion while avoiding overly general, vague language. Your summary must be structured, which means you may have to reorganize your notes. You do not have to follow the order in which the key ideas are mentioned in the audio/video. You must also decide which ideas are not important enough to warrant inclusion, so it is important to establish a clear hierarchy between the ideas discussed while you are taking notes.
The format of your summary must include a mention of the source of the audio/video in the first sentence. You must also establish the central concept at the beginning of your summary. Because your summary is an objective account of the discussion, you must not include your own opinions in the text. In general, you will use the present tense to summarize the central points of the discussion.

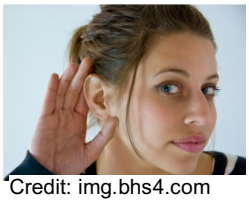
Adapted from medium.goodnotes.com, https://advice.writing.utoronto.ca/researching/summarize/, https://www.thoughtco.com/summary-composition-1692160

NOTE-TAKING AND SUMMARIZING

KEYWORDS / QUESTIONS	**MAIN NOTES**
SUMMARY	

NOTE-TAKING AND SUMMARIZING

IMPLEMENT YOUR COMPREHENSION SKILLS


Credit: img.bhs4.com

Understanding the meaning of spoken English is just like understanding the meaning of written English. When you encounter words you do not know, you can apply the same methodology:

- ✓ Make a hypothesis, i.e. try to guess
- ✓ Decompose to find the root
- ✓ Skip the word and use a broader context
- ✓ Use a dictionary properly, i.e. check which meaning is the correct one
- ✓ Understand the word's relation to the rest of the sentence by noting its grammatical nature and function

This video, like any other, offers an opportunity to learn some new vocabulary. In the list below there may well be a few words or expressions you do not know. Using the methodology described above, make an educated guess as to their meaning.

1'30 dismal: .....

2'08 scale up: .....

2'54 sheer: .....

3'20 arise: .....

3'48 trade-off: .....

4'38 insight: .....

6'28 turns out: .....

8'02 furthest: .....

8'52 filing: .....

9'26 dash: .....

10'13 solace: .....

10'30 removing constraints: .....

10'21 outcome: .....

Useful resources:

Good general online dictionaries include https://www.macmillandictionary.com/, https://www.lexico.com/, or https://www.wordreference.com/. It is good practice to look up words in English-to-English dictionaries as well as English-to-French dictionaries.

If you need to look up more specialized vocabulary, you can use http://gdt.oqlf.gouv.qc.ca/ (Le grand dictionnaire terminologique), or https://www.btb.termiumplus.gc.ca/tpv2alpha/alpha-eng.html?lang=eng&index=alt (Termium Plus), which are both Canadian resources.

If you want to practice summarizing texts, you can have a look at the tips and examples on the following website:

http://www.uefap.com/reading/notetake/summary.htm

CREATING A REVIEW

VIDEO: CITING SOURCES RESEARCH GUIDE: LITERATURE REVIEWS

This video from NCSU Libraries gives a helpful overview of literature reviews. Even though it says it's "for graduate students," the principles are the same for undergraduate students too!

1. DEFINING A REVIEW

   a. There are several contexts in which you might be requested to create a literature review. Can you **match the ones mentioned in the video** with the appropriate definition?

	They usually take the form of written pieces of work that are set by your course tutors. They also usually contribute towards your final course mark or grade. The types depend on the course you are studying. The most common are essays or reports. However, it is also possible that you will be set other kinds such as a group project or an oral presentation in your subject area, which may also be assessed. (adapted from prepareforsuccess.co.uk)
	Also called culminating project, or senior exhibition, among many other terms, it is a multifaceted assignment that serves as a culminating academic and intellectual experience for students, typically during their final year of high school or middle school, or at the end of an academic program or learning-pathway experience. (..) It is generally designed to encourage students to think critically, solve challenging problems, and develop skills such as oral communication, public speaking, research skills, media literacy, teamwork, planning, self-sufficiency, or goal setting. (adapted from edglossary.org)
	A document submitted in support of application for an academic degree or professional qualification presenting the author's research and findings. Depending on context, the terms can be used to refer either to part of a bachelor's or master's course, or to a doctorate. (adapted from Wikipedia.org)

   b. What are the **3 main functions** of a literature review as part of the research process?

.....

.....

   c. What is "the literature"?

Can you think of other sources of information on a given topic, besides those mentioned in the video?

.....

.....

   d. The literature needs to be seen as "a continuously evolving network of works that interact with each other".

Can you explain what this means? Why is the interaction process important?

.....

.....

   e. How can you ensure coherence?

.....

.....

CREATING A REVIEW

2. HOW?

Make notes on the different steps of the review process:

TOPIC	*RESEARCH AND INFORMATION COLLATION*	*BRAIN*	*CITATIONS*	*FINAL REVIEW*

3. A PRACTICAL APPROACH TO CREATING A REVIEW

a. Which of the listed skills correspond to each learning outcome?

DESCRIBE, SUMMARIZE, COMPARE AND CONTRAST, CRITICALLY EVALUATE, ANALYSE, ORGANIZE

Learning outcome	**Skills involved**
Collect and read relevant literature	
Provide an overview of relevant literature	
Highlight key concepts and papers	

b. Looking for links and relations between documents: what can they be?

……

……

c. Some sources can come in support of an argument. Some refute it. Can you think of examples of sources based on the following topics?

TOPIC	ARGUMENT	SOURCES THAT MIGHT SUPPORT THE ARGUMENT	SOURCES THAT MIGHT REFUTE THE ARGUMENT
Vaccines	Vaccines cause autism		
Nuclear energy	Nuclear power is a clean and sustainable energy		

d. What is the main pitfall you want to avoid?

But don't fall into the trap of making your review a larger list of …….. of the works you read. A literature review is not an annotated …….. Your goal should be to go one step further and …….. and …….. what you find in that literature into …….. . Ideally, you will create your own conceptual map or outline of the literature on …….. .

e. To conclude: what does your review need to consist in besides direct use of sources?

……

……

CREATING A REVIEW

EXAMPLE: THE PRESS REVIEW

An exercise similar to the literature review is the very French Revue de Presse*, or Press Review*

Watch the following video from France 24 and answer questions about it.

- General comprehension

Which French papers are mentioned by the journalist?

What can you say about the general structure of the presentation?

What types of issues did the journalist choose to report about? Why?

- Creating coherence

About the budget crisis: how many papers are mentioned regarding that issue? How are they put in perspective?

About the Nice jewellery shooting: what types of articles from *Liberation* does the journalist report on? Why choose such articles for a press review?

About the power crisis inside the UMP: what is the connection/ transition with the previous item? How is the article about Alain Juppé brought up by the journalist?

About prostitution: in what way is the treatment of that issue different from the three previous ones? What is the main purpose here for the journalist / benefit for viewers?

About ducks in Villotran: what would you call that sort of news item? Why include it in the report?

- Transcript

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VIDEO: ENIGMA

STARTER: SECRET MESSAGES

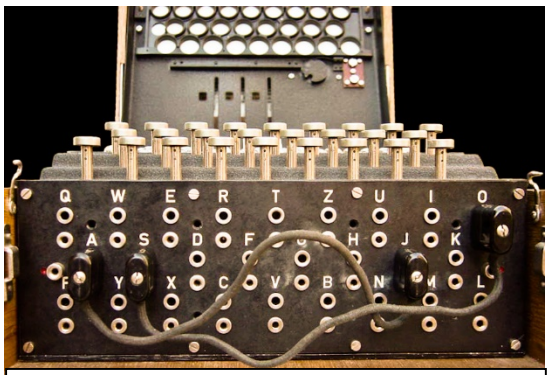
1. Think of at least one easy technique (accessible to anyone) for you to use code messages with a friend.
2. Think of a more elaborate technique based on your studies and explain how it would work.
3. How can we try to decode a secret message today?

VIDEO: CRACKING THE ENIGMA CODE (FROM "THE CODEBREAKERS," NATIONAL GEOGRAPHIC SPECIAL, 2009)

1. Fill in the blanks

In post WWI Europe, secrecy between paranoid nations becomes **……** The growth of international commerce creates a need for companies to keep their information secret from **……** Germany's Arthur Sherbius develops the Enigma machine as a means of keeping those business transactions **……** It works by generating an **……** when a letter key is pressed. A number of moving mechanical parts then **……** the path of the current, producing a different letter each time the key is pressed. The Enigma machine is about to become the German army's most powerful **……** in WWII, a weapon they're confident can keep their secret military codes … secret.

2. What happened if the enemy captured an enigma machine?
3. How many different configurations for the machine are estimated?
4. How often did the setting of the machine change?
5. How is a coded message created?
6. Who is Alan Turing?
7. What did Enigma coded messages allow the Germans to do in the North Atlantic?
8. What flaw (=weakness) in the machine allowed Turing to eliminate thousands of permutations in his deductions?
9. What human weakness also helped to crack the code?
10. What type of German message was used to finally crack the code? Why?
11. What machine did Turing develop?
12. What was Jean Valentine's job and what made it unusual?
13. What did the capture of U-boats make possible?
14. The war was won by soldiers, not code breakers, but what did code breakers make possible?



Original Author: Bob Lord at Wikipedia.org

VIDEO: ENIGMA

SPEAKING PRACTICE: Password

This game is played in groups of 4 people (two teams of two). On each team of two, one player is the guesser and the other is the clue-giver. The clue-givers on both teams are given a word and their goal is to get the guesser on their team to guess the word before the other team's guesser does.

First, place the cards in a pile face down. Then the two clue-givers take the first card on the pile (they are both working with the same word). Taking turns, each clue-giver gives a **one-word clue** to their guesser partner, who tries to guess what the word on the card is. The clue-giver and guesser on the other team can hear what the clue and the guess are. You then go back and forth between the two teams until either one team guesses the right word or five clues have been given by each clue-giver.

The number of points a team gets by guessing right starts at 10 and decreases by 1 every time one clue is given. You should change the team that goes first every two rounds.

Word list from https://www.thegamegal.com/printables/

DISTANCE LEARNING ALTERNATIVE: Mastermind

Log onto MADOC and follow the "Online Mastermind Game" link. Can you break the code in 5 moves or fewer?

PHONOLOGY: STRESS

SYLLABLE STRESS: IDENTIFY THE STRESSED SYLLABLE IN THESE WORDS AND UNDERLINE IT.

adorn	jester	cushion	
even	rugged	protest	people
support	parent	appeal	kidnap

SENTENCE STRESS: CONTENT WORDS VS FUNCTION WORDS

*GENERALLY **STRESSED***

***Content** words (also called lexical words)*

- Nouns
- Verbs
- Adjectives
- Adverbs

*GENERALLY **NOT STRESSED***

***Function** words (also called structure words)*

- (most) Determiners
- (most) Auxiliaries
- (most) Prepositions
- (most) Conjunctions
- (most) Pronouns

Read the following sentences and decide if the words are CONTENT or FUNCTION words (circle the content words). Then listen to the audio track and check your answers.

1. Put the flowers on the table.
2. The meeting ended with a vote.
3. The worst problem was the matter of status.
4. The effect of these gases is growing daily.
5. I had never spoken to her before.

WEAK VS STRONG FORMS

Normal meaning + normal situation = probably unstressed (weak form)
Normal meaning + emphatic situation = probably stressed (strong form)
Special meaning = almost inevitably stressed (strong form)

For the following featured words, decide, in each pair, which one is weak (unstressed) and which one is strong (stressed). Read the sentences and mark your answers, then listen to the audio track and check.

1. THAN
   a. She's better than I am.
   b. 'Than' comes between 'texture' and 'thanks' in my dictionary.
2. THERE
   a. Is there any milk left?
   b. There's an old mill by the stream, they tell me.
3. OF
   a. He's the only one I've ever heard of.
   b. A box of matches please.
4. WAS
   a. Bobby Charlton was a marvellous striker.
   b. "Was there anything else, Sir?"

PHONOLOGY: STRESS

5. CAN
    a. "YOU CANNOT BE SERIOUS!"
    b. I can see clearly now the rain has gone.
6. AND
    a. I ate a full English breakfast, a five-course lunch and a substantial dinner.
    b. I love fish and chips but I'm on a diet.
7. FROM
    a. Where's he coming from?
    b. He came from a long line of aristocrats.
8. US
    a. Give us this day our daily bread…
    b. He didn't give it to us, he gave it to them.
9. SOME
    a. Some hope!
    b. I'd love some cream on these strawberries.
10. TO
    a. He came to the party after all.
    b. After the party he was some time coming to.

Source: Ray Parker & Tim Graham. *The Phonology of English: An Introduction for Teachers of ESOL*. ELB Publishing: Brighton, 2009 (First published 1994).

PRESENTATION SKILLS: VOCABULARY BUILDING

PRESENTATION PRACTICE: COLLOQUIAL VOCABULARY

Complete each sentence with the appropriate preposition.

1. Are you ..... me?
2. Could you just pick ..... where we left ..... yesterday?
3. And there are a few others that I'll just run ..... really quickly.
4. That goes ..... saying.
5. I'll talk about that ..... due course.
6. Let's leave it ..... that.
7. I'll first give you the framework, and then I'll flesh it .....
8. I'll probably touch ..... this subject only briefly.
9. There were hardly any data to fall back on, so we had to start ..... scratch.
10. It is difficult to pin ..... the factors involved.
11. This kind of problem has cropped ..... before.
12. We're still struggling to figure ..... how we might be able to integrate this in the research.

Source: Blanpain, Kristin, and An Laffut. *Academic Spoken English: A Corpus-Based Guide to Lectures, Presentations, Seminars and Tutorials.* Acco: Leuven, 2012 (2nd edition).

PROCESS DESCRIPTIONS

PROCESS DESCRIPTIONS: A FEW POINTERS

How Compilers Work

A compiler is a program that translates human readable source code into computer executable machine code. To do this successfully the human readable code must comply with the syntax rules of whichever programming language it is written in. A compiler's complexity depends on the syntax of the language and how much abstraction that programming language provides. A compiler is likely to perform many or all of the following operations: lexical analysis, preprocessing, parsing, semantic analysis, code generation, and code optimization. Let's look at the different phases of the compiling process.

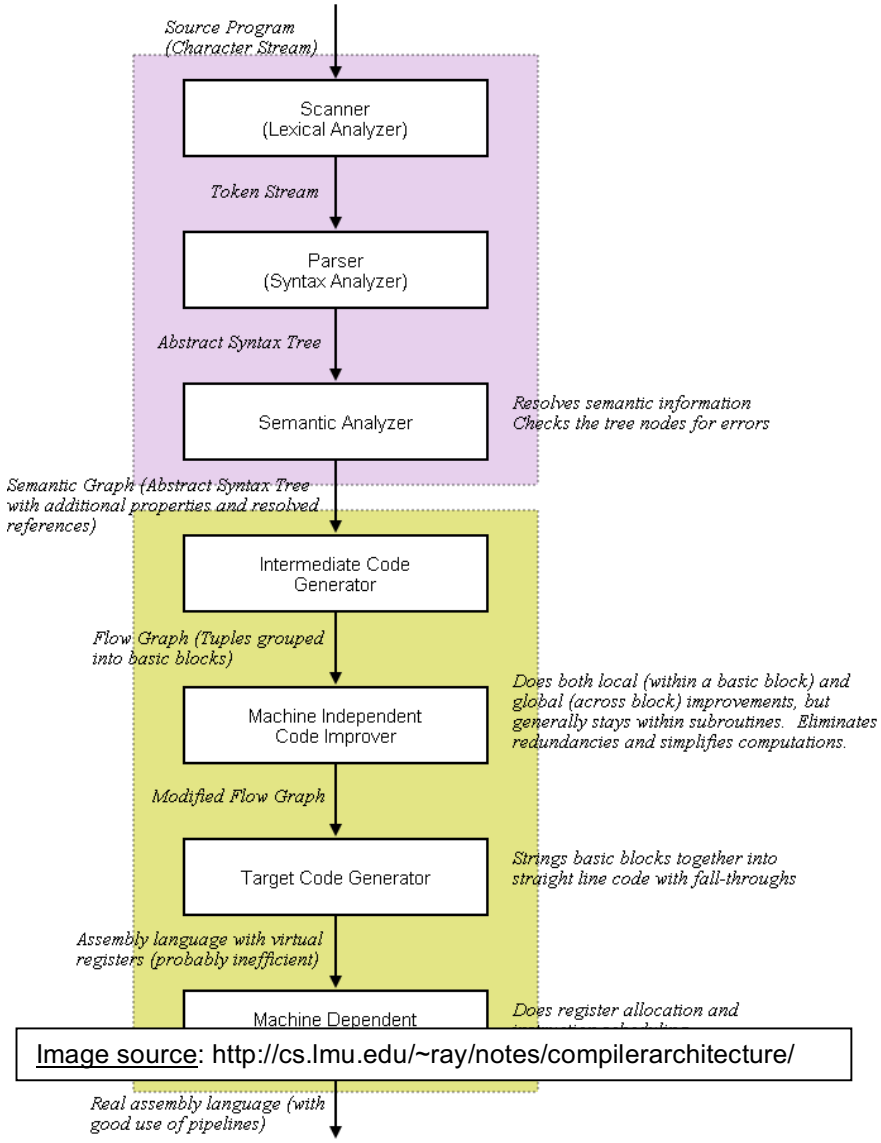


Image source: http://cs.lmu.edu/~ray/notes/compilerarchitecture/

Lexical analysis happens first: this is where the compiler reads a stream of characters (usually from a source code file) and generates a stream of lexical tokens. Each token is a single atomic unit of the language, for instance a keyword, identifier or symbol name. The sequence of tokens is transformed by the parser into a syntax tree. The parse tree is often analyzed, augmented, and transformed by later phases in the compiler. Lexing and parsing comprise the syntactic analysis (word syntax and phrase syntax, respectively). The semantic analysis phase is generally more complex and written by hand, but can be partially or fully automated using attribute grammars. Semantic analysis is the phase in which the compiler adds semantic information to the parse tree and builds the symbol table. This phase performs semantic checks such as type checking, object binding (associating variable and function references with their definitions), or definite assignment (requiring all local variables to be initialized before use), rejecting incorrect programs or issuing warnings. Semantic analysis usually requires a complete parse tree.

The final stage is generating machine code. This can be an extremely complicated process. . .

Adapted from http://cplus.about.com/od/introductiontoprogramming/p/compiler.htm
http://en.wikipedia.org/wiki/Compiler
http://cs.lmu.edu/~ray/notes/compilerarchitecture/
http://cs.lmu.edu/~ray/notes/ir/

PROCESS DESCRIPTIONS

1. Notice that most of the verbs in process descriptions are in the simple present tense and that the passive voice is common.
2. Now focus on the subject of the second sentence in the first paragraph. Notice that this subject, "the human readable code," is a repetition of what was mentioned toward the end of the previous sentence. You could not in this case replace "human readable code" with "it" because that "it" could be referring back to either "human readable source code" or "computer executable machine code."

> ⇨ Always make sure that your pronouns have a **clear and unambiguous antecedent** (see the next exercise for practice on pronouns).

3. Look at the second, third, and fourth sentences in the second paragraph: "Each token is a single atomic unit of the language, for instance a keyword, identifier or symbol name. The sequence of tokens is transformed by the parser into a syntax tree. The parse tree is often analyzed, augmented, and transformed by later phases in the compiler."

Consider the following way of writing this sequence of sentences: ""Each token is a single atomic unit of the language, for instance a keyword, identifier or symbol name. The parser transforms the sequence of tokens into a syntax tree. Later phases in the compiler often analyze, augment, and transform the parse tree."

The original version is better: starting the third sentence with "The parser" is more confusing for the reader, since it is new information. Starting with "The sequence of tokens" helps ensure text cohesion, which means that the reader can understand the logic of the text straight away since one idea leads to the next one organically. The same holds true for the flow between the third and fourth sentences.

> ⇨ Generally speaking, the flow of information in a text should be **from old information to new information**; this allows you to ensure your texts are cohesive and logical without having to use too many link words.

This is one of the reasons why the passive voice can be very useful to help you start your sentence with a piece of information that has already been mentioned.

In the next two exercises, we will work on pronoun issues and on building up your link-word vocabulary before you apply this information to the writing practice.

PRONOUNS: FIND THE PROBLEMS IN THE FOLLOWING SENTENCES AND FIX THEM.

1. When it was first developed, recursive compilation was impractically slow and required too much memory.
2. The user can then drag his files into a folder.
3. The use of free-format tables for writing software specifications may seem counter to the general trend. However, this gives the developer certain advantages.
4. In the first volume of this book, it presents and analyzes a number of algorithms in depth.
5. These friend of mine really dislikes the Ubuntu GUI.
6. On the podcast I listened to last night it said that some of the most in-demand tech jobs at the moment are software developer and DevOps engineer.
7. The next stage was the test of the complete system, but it failed.

Adapted from:

Vardan Grigoryan. *How to think in graphs: An illustrative introduction to Graph Theory and its applications*. https://medium.freecodecamp.org/i-dont-understand-graph-theory-1c96572a1401

Anne Stilman. *Grammatically Correct: An Essential Guide to Punctuation, Style, Usage, & More*. Writer's Digest: Cincinnati, 2004.

Adrian Wallwork. *English for Academic Research: Writing Exercises*. Springer: New York, 2013.

Adrian Wallwork. *English for Writing Research*. Springer: New York, 2011.

Justin Zobel. *Writing for Computer Science*. Springer: London, 2014 (3rd edition).

PROCESS DESCRIPTIONS

LINK WORDS

1. Look at the following sentence from the text: "If the IR is fairly independent of the source and target languages, its ability to be used in a retargetable compiler is maximized." How could you rephrase it using "unless"?
2. Choose one of the following link words to complete the sentences below. (Source: Sue Blattes, Véronique Jans & Jonathan Upjohn. Minimum Competence in Scientific English. EDP Sciences: 2003.)

doubtless – whereas – besides – thereby – namely – despite – obviously – as a rule – nevertheless

a. **……** using rechargeable batteries, what other ways are there of storing energy?

b. The combustion of methane can produce an undesirable product, **……** carbon dioxide, which is responsible for global warming.

c. **……** its numerous spectacular successes, magnetic resonance imaging is not entirely satisfactory when applied to proteins.

d. The evidence has often been contradictory. **……**, hypnosis is finding numerous medical uses.

e. **……**, animals who survive in desert habitats tend to be small.

f. Oral administration of insulin does not reduce blood sugar, **……** orally administered corosolic acid can.

g. **……**, when dealing with toxic and hazardous material, robots offer great advantages.

h. The gas containers are kept underground, **……** minimising temperature changes.

i. Environmental concerns will **……** be heightened in the years to come.

3. In the following text where possible choose (c). Where not possible, choose the most appropriate link word (a or b).

A buffer overflow is a common mistake made by software developers that can be used by attackers to gain access to a computer system. [**(1) (a) Namely, a buffer (b) First, a buffer (c) A buffer]** is a sequential section of memory that may contain anything from an array of integers to a string of characters. **[(2) (a) So, in a buffer overflow, (b) In a few words, in a buffer overflow, (c) In a buffer overflow,**] more data is allocated to a fixed-length buffer than the buffer can accommodate. **[(3) (a) Therefore, the extra data (b) Due to the extra data (c) The extra data]** overflows into an adjacent memory space, overwriting or corrupting the data that already exists there. [**(4) (a) As a consequence, a system crash (b) Sad, a system crash (c) A system crash]** is a typical result, **[(5) (a) in plus, a buffer overflow (b) but a buffer overflow (c) a buffer overflow]** presents other opportunities for attackers, [**(6) (a) such (b) like (c) despite]** running arbitrary code or using these coding errors to initiate malicious actions.

Adapted from Veracode. *Buffer Overflow*. https://www.veracode.com/security/buffer-overflow

PROCESS DESCRIPTIONS

WRITING PRACTICE: WORK IN GROUPS OF THREE. USING THE DIAGRAMS AND YOUR OWN KNOWLEDGE, CHOOSE ONE OF THE FOLLOWING TOPICS AND WRITE A TEXT ABOUT IT.

First, contextualize by briefly defining the process/tool/method and outlining its purpose or function.

Then, depending on the topic you chose, you may want to explain:

a) the steps in the process

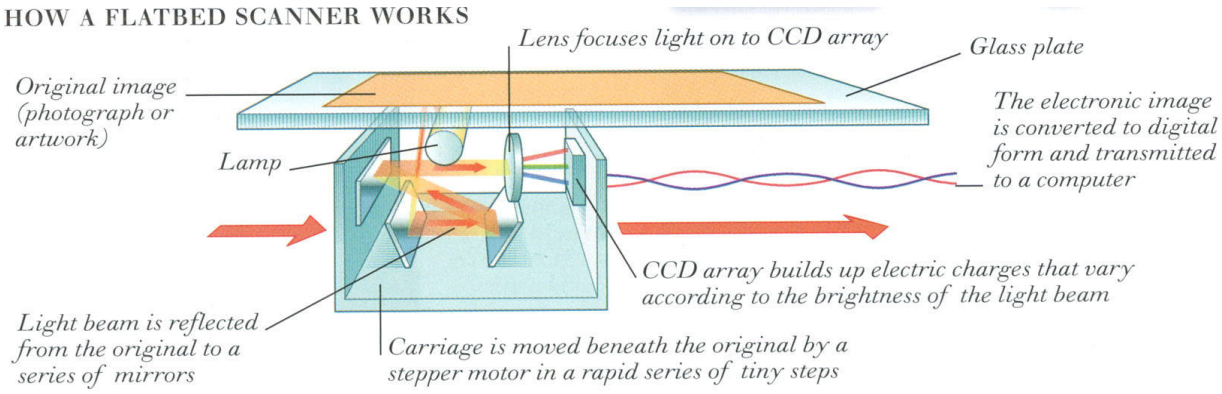
b) how the process/tool works or how it is performed/used

c) what the advantages of the process/tool are over other processes/methods

d) some of the problems associated with misuse or misunderstanding of the process/tool

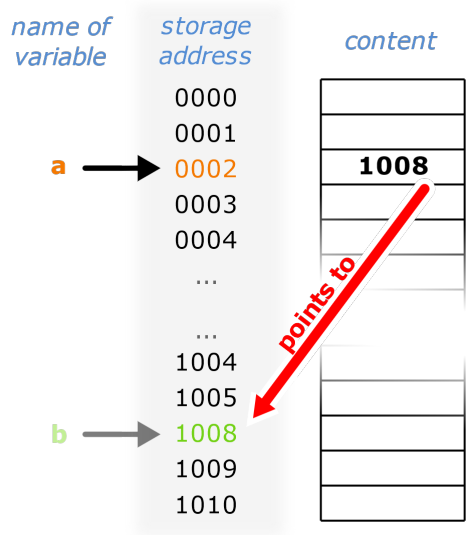
Always keep your reader in mind and try to apply the principles we have discussed.

THEME 1: Flatbed scanner



Source: *The Visual Dictionary*, London: Dorling Kindersley, 2011, p. 570

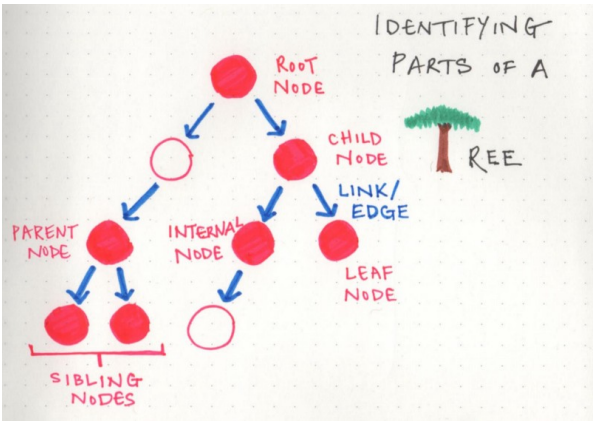
THEME 2: Pointers

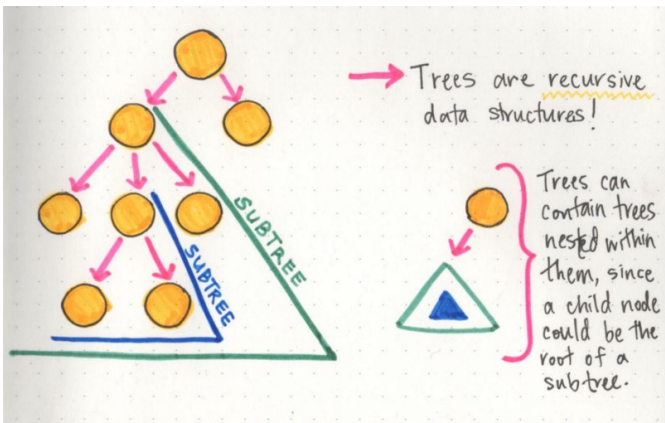


*Pointer **a** pointing to the memory address associated with variable **b**. In this diagram, the computing architecture uses the same address space and data primitive for both pointers and non-pointers; this need not be the case.*
Image by Sven, source: https://en.wikipedia.org/wiki/Pointer_(computer_programming)#/media/File:Pointers.svg

PROCESS DESCRIPTIONS

THEME 3: Binary trees





Identifying parts of a tree data structure (Left) and *Tree truths: trees are recursive data structures* (Right), https://medium.com/basecs/how-to-not-be-stumped-by-trees-5f36208f68a7

PRESENTATION SKILLS: VOCABULARY BUILDING

STRUCTURE: BELOW ARE A NUMBER OF WAYS TO STATE THE PURPOSE OF YOUR PRESENTATION. COMPLETE THE SENTENCES USING THE WORDS GIVEN.

IN THIS PRESENTATION/LECTURE, I'D LIKE TO…

TALK – INTRODUCE – EXPLORE – TAKE – REPORT – TELL

1. **……** to you about our project.
2. **……** you about my research.
3. **……** you to the fascinating topic of data protection.
4. **……** a look at the impact of social media on our everyday lives.
5. **……** on the results of a study on risk analysis.
6. **……** the issue of algorithmic efficiency.

I'LL START BY…

MAKING – DESCRIBING – BRINGING – GIVING – FILLING – LOOKING

1. **……** you in on the general background.
2. **……** a few preliminary remarks on the methodology I used.
3. **……** you up-to-date on developments at the EU level.
4. **……** recent technological developments.
5. **……** you an overview of current theories.
6. **……** at the main indicators of school effectiveness.

AND THEN I'll GO ON TO

PUT – DISCUSS – MAKE – HIGHLIGHT – TAKE

1. **……** you through a couple of practical applications.
2. **……** the implications of my results.
3. **……** a number of recommendations to improve existing legislation.
4. **……** the situation into some kind of perspective.
5. **……** three key methodological features.

Source: Blanpain, Kristin, and An Laffut. *Academic Spoken English: A Corpus-Based Guide to Lectures, Presentations, Seminars and Tutorials.* Acco: Leuven, 2012 (2nd edition).

POINTS OF VIEW

DOXING

1. What was "Gamergate"?
2. What is "doxing"?
3. What happened in Charlottesville in August 2017 and what has happened in the wake of Charlottesville that's relevant to the debate surrounding doxing?
4. Complete the following table with the arguments mentioned in the audio for or against doxing

PRO	CON

Source: On the Media, "Fire with Fire," NPR, 22 Dec 2017. https://www.npr.org/podcasts/452538775/on-the-media.

TABS VS SPACES: WATCH THE FOLLOWING EXTRACT FROM SILICON VALLEY AND WRITE DOWN ONE ARGUMENT IN FAVOR OF AND ONE ARGUMENT AGAINST USING TABS OVER SPACES. CAN YOU THINK OF OTHER ARGUMENTS?

PRO	CON

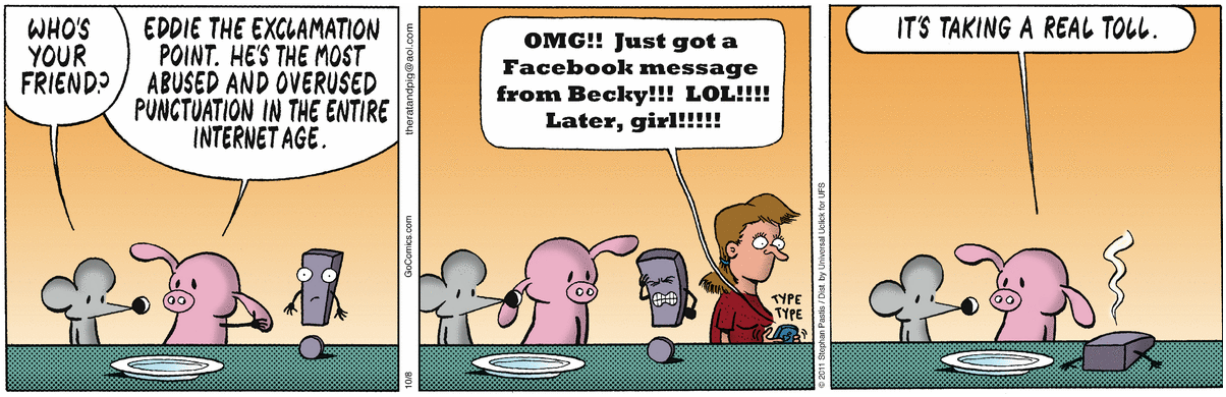
Source: From *Silicon Valley*, Season 3, Episode 6.

SPEAKING PRACTICE: Debating (in groups of 3 people)

Choose an issue that sparks controversy or debate in your field. The debate can be serious, as with doxxing, or not so serious, as in the tabs vs spaces debate.

One of you will moderate the debate, ensuring that it goes forward, that everybody gets to talk, defend their opinion and respond to the other person's talking points. The moderator will also choose the winner of the debate at the end.

PUNCTUATION



Stephan Pastis, *Pearls Before Swine*, https://www.gocomics.com/pearlsbeforeswine/2011/10/08/

Punctuation matters! Here are two examples of legal cases whose resolution revolved around comma use:

One of the latest examples of the tricky use of commas in legal cases is regarding a recent lawsuit in Maine. Delivery drivers from Oakhurst Dairy, a local milk and cream company, were engaged in litigation with their employers for some time over whether they were entitled to overtime pay. A U.S. court of appeals determined on March 13, 2017 that Maine's overtime law was grammatically ambiguous in some of its clauses. Due to that ambiguity, the drivers from Oakhurst Dairy won the appeal.

The Maine case is not the only one to have proved the importance of commas in legal cases. Back in 2006, a dispute in Canada over a comma in a 14-page long contract signed between Rogers Communications of Toronto and Bell Aliant cost 1 million Canadian dollars to Rogers. It would seem that paying attention in grammar class has become essential to avoid potential lawsuits.

Adapted from https://www.languageconnections.com/blog/legal-grammar-rules-and-translation/

INDICATE THE VISUAL REPRESENTATION OF THE FOLLOWING PUNCTUATION MARKS AND THEN MATCH EACH MARK WITH THE CORRECT DESCRIPTION OF ITS USE.

Punctuation mark	Representation	Use
1. Comma		a. To introduce an explanation of preceding statements or to introduce a list
2. Colon		b. To join independent clauses in the absence of a coordinating conjunction and signal that the statements are closely related
3. Semi-colon		c. To indicate an interruption and add emphasis
4. Hyphen		d. To separate and define parts of a sentence, especially where two words or parts of a sentence coming together could lead to misunderstanding
5. Dash		e. To provide additional information
6. Parentheses		f. To join words together, for instance in compound words
7. Apostrophe		g. To form possessives and contractions

Sources: https://www.cosc.canterbury.ac.nz/additional/technical-writing/punctuation.shtml
http://www.thepunctuationguide.com/
https://www.grammarbook.com/punctuation_rules.asp

PUNCTUATION

CORRECT THE FOLLOWING SENTENCES BY ADDING, CHANGING, OR REMOVING PUNCTUATION MARKS.

1. When presenting data tables and graphs can be useful.
2. Those who supported the plan, agreed that the most important task was to have a realistic implementation timeframe.
3. These small additional structures allow a large saving, the worst case is reduced from 0 (n) to O(log n).
4. There are three phases; accumulation of distinct symbols in a hash table; construction of the tree, using a temporary array to hold the symbols for sorting; and the compression itself.
5. In a multicore system, each of the CPU's can work together on the same program or work on different programs at the same time.
6. Performance deteriorated after addition of resources!
7. Even though our findings are based on a small scale-study, we believe our results can be replicated in other situations.

Examples adapted from Zobel, Justin. *Writing for Computer Science*. Springer: London, 2014 (3rd edition).

ADDITIONAL ACTIVITY: PUNCTUATE THE FOLLOWING LETTER TO FIND OUT ITS MEANING:

Dear John I want a man who knows what love is all about you are generous kind thoughtful people who are not like you admit to being useless and inferior you have ruined me for other men I yearn for you I have no feelings whatsoever when we're apart I can be forever happy will you let me be yours Jane

WRITING PRACTICE: Groups of 2 people

Each student chooses one of the following concepts: the kernel of an operating system, an algorithm, artificial intelligence, top-down or bottom-up programming, object-oriented programming, declarative programming, imperative programming, functional programming.

Next individually write an explanation of that concept **aimed at a general audience**. Then compare your definitions, correct each other's language (paying special attention to punctuation) and see the different strategies you used to make that concept clear to non-specialists.

ALGORITHMS

STARTER: SORTING AND SEARCHING ALGORITHMS

Bubble Sort Illustrated through Hungarian Folk Dance
Source: http://flowingdata.com/2011/04/14/sorting-algorithms-demonstrated-with-hungarian-folk-dance/

Watch the video and answer the questions

1. Match the following words with their correct definition

Word/Expression from the video	*Definition*
1. Array	a. To exchange one thing for another
2. To sort	b. To move an object to a different place
3. To swap	c. A collection of elements that all have the same data type and are stored contiguously in memory
4. To shift	d. To break something into smaller pieces
5. To split	e. An approach that consists in breaking a problem down into ever smaller pieces and solving recursively
6. To merge	f. To repeat
7. To iterate	g. To arrange elements in a particular order
8. Divide and conquer	h. To combine

2. Explain how selection sort, bubble sort, and insertion sort work and what their best-case and worst-case run times are.

3. What is the difference between linear search and binary search? Is binary search always the best option?

ALGORITHMS

READING

Read the text on page 7 and say whether the following statements are true or false.

1. Deborah Gordon is especially interested in the possibility that studying ants' behavior could help us imagine new solutions to problems posed by human networks.
2. The ability of ants to adapt to their environment is due to the highly centralized nature of their colonies.
3. Redundancy in large colonies of ants means that each ant can be given more complex information.
4. The feedback process of the Argentine ants relies on how much food each ant finds: if an ant encounters another ant that has found food, it changes its search pattern.
5. Dual ring networks make it possible to avoid complete breakdown in a system in the event that some part of the system fails.

Fill in the following table with words from the text that correspond to the definitions.

Line	Synonyms/definitions	Words from the text
	To make something happen, to cause	
	The amount of information that can be sent each second over a network connection	
	To increase something in size	
	To be more important or significant than	
	The inclusion of extra components which are not strictly necessary in case other components fail	
	A result	
	Very carefully, completely	
	Having a random probability distribution or pattern that may be analyzed statistically but may not be predicted precisely	
	To put into effect	
	To interrupt something and prevent it from continuing by creating a problem	

Answer the following questions on the text.

1. Explain the similarities between the "Anternet" and the TCP protocol.
2. What can ants teach us about how to scale up from small to large systems?
3. What about in the area of computer security?

Log onto MADOC to watch Deborah Gordon's TED talk on "What ants teach us about the brain, cancer and the Internet."

ALGORITHMS

What Do Ants Know That We Don't?

Adapted from Deborah Gordon, *Wired*, 7 June 2013

Ever notice how ant colonies so successfully explore and exploit resources in the world? You may find it annoying. But as an ecologist who studies ants and collective behavior, I think it's intriguing.

What's especially remarkable: the close parallels between ant colonies' networks and human-engineered ones. One example is "Anternet", where we, a group of researchers at Stanford, found that the algorithm desert ants use to regulate foraging is like the Traffic Control Protocol (TCP) used to regulate data traffic on the internet. Both ant and human networks use positive feedback: either from acknowledgements that trigger the transmission of the next data packet, or from food-laden returning foragers that trigger the exit of another outgoing forager.

But insect behavior mimicking human networks — another example are the ant-like solutions to the traveling salesman problem provided by the ant colony optimization algorithm — is actually not what's most interesting about ant networks. What's far more interesting are the parallels in the other direction: *What have the ants worked out that we humans haven't thought of yet?*

What Ant Colony Networks Can Tell Us About What's Next for Human-Engineered Ones

Ant colonies use dynamic networks of brief interactions to adjust to changing conditions. No individual ant knows what's going on. Each ant just keeps track of its recent experience meeting other ants, either in one-on-one encounters when ants touch antennae, or when an ant encounters a chemical deposited by another.

Dealing with High Operating Costs

Harvester ant colonies in the desert must spend water to get water. The ants lose water when foraging in the hot sun, and get their water by metabolizing it out of the seeds that they collect. Since colonies store seeds, their system of positive feedback doesn't waste foraging effort when water costs are high.

In this way, the Anternet allows the colony to deal with high operating costs. In the internet, the TCP protocol also prevents the system from sending data out on the internet when there's no bandwidth available. Effort would be wasted if the message is lost, so it's not worth sending it out unless it's certain to reach its destination.

Scaling Up from Small to Large Systems

What happens when a system scales up? Like human-engineered systems, ant systems must be robust to scale up as the colony grows, and they have to be able to tolerate the failure of individual components.

Since large systems allow for some messiness, the ideal solutions utilize the contributions of each additional ant in such a way that the benefit of an extra worker outweighs the cost of producing and feeding one.

The tools that serve large colonies well, therefore, are redundancy and minimal information. Enormous ant colonies function using very simple interactions among nameless ants without any address.

In engineered systems we too are searching for ways to ensure reliable outcomes, as our networks scale, by using cheap operations that make use of randomness. Elegant top-down designs are appealing, but the robustness of ant algorithms shows that tolerating imperfection sometimes leads to better solutions.

Optimizing for First-Mover Advantage

When operating costs are low and colonies seek an ephemeral delicacy, searching speed is essential if the colony is to capture the prize before it dries up or is taken away.

Since ant colonies compete with each other and many are out looking for the same food, the first colony to arrive might have the best chance of holding on to the food.

How does a colony achieve this first-mover advantage without any central control? The challenge in this situation is for the colony to manage the flow of ants so it has an ant almost everywhere almost all the time.

One strategy ants use (familiar from our own data networks) is to set up a circuit of permanent highways — like a network of cell phone towers — from which ants search locally. The invasive Argentine ants are experts at this; they'll find any crumb that lands on your kitchen counter.

The Argentine ants also adjust their paths, shifting from a close to random walk when there are lots of ants around, leading each ant to search thoroughly in a small area, to a straighter path when there are few ants around, thus allowing the whole group to cover more ground.

Like a distributed demand-response network, the aggregated responses of each ant to local conditions generates the outcome for the whole system, without any centralized direction or control.

Addressing Security Breaches and Disasters

In the tropics, where hundreds of ant species are packed close together and competing for resources, colonies must deal with security problems. This has led to the evolution of security protocols that use local information for intrusion detection and for response.

Rather than attempting to prevent incursions completely, however, ants create loose, stochastic identity systems in which one species regulates its behavior in response to the level of incursion from another.

There are obvious parallels with computer security. It's becoming clear that we too will need to implement local evaluation and repair of intrusions, tolerating some level of imperfection. The ants have found ways to let their systems respond to each others' incursions, without attempting to set up a central authority that regulates hacks.

Some of our networks seem to be moving toward using methods deployed by the ants.

Take the disaster recovery protocols of ants that forage in trees where branches can break, so the threat of rupture is high. A ring network, with signals or ants flowing in both directions, allows for rapid recovery here; after a break in the flow in one direction, the flow in the other direction can re-establish a link.

Similarly, early fiber-optic cable networks were often disrupted by farm machinery and other digging: one break could bring down the system because it would isolate every load. Engineers soon discovered, as ants have already done, that ring networks would create networks that are easier to repair.

PHONOLOGY: INTONATION

INTONATION GROUPS: UNDERLINE THE NUCLEUS IN THE FOLLOWING SENTENCES, AS SPOKEN IN A NEUTRAL WAY.

1. My name's Fred.
2. I'm a tourist.
3. What do you mean?
4. What's your name?
5. Is it time to go?
6. How do you do?
7. Can I come in?
8. Would you like some tea?
9. What would you like to drink?

Source: Ray Parker & Tim Graham. *The Phonology of English: An Introduction for Teachers of ESOL*. ELB Publishing: Brighton, 2009 (First published 1994).

CONTRASTIVE AND EMPHATIC INTONATION: LISTEN AND UNDERLINE THE NUCLEUS IN THE FOLLOWING SENTENCES.

1. Please be sure to always lock the door.
2. I said to turn to the right!
3. My father likes to cook.
4. You definitely need to change your tyres.
5. Let's buy vanilla ice-cream for once.
6. I really prefer classical music.

Source: Paul Larreya & Wendy Schottman. *A Pronunciation Guide*. Nathan: Paris, 2013.

VIDEO: DIGITAL ART

STARTER: "WHAT IS DIGITAL ART?" (from https://www.britishcouncil.org/voices-magazine/can-digital-art-be-called-art)

Watch the video and answer the following questions

1. How does Margot Bowman define digital art at the beginning of the video?
2. According to Conrad Bodman, how long has digital art been around for?
3. What has changed recently according to him?
4. What was Digital Revolution?
5. What is the Pinokio lamp?
6. What is *Treachery of the Sanctuary*?
7. What is 15 Folds?

VIDEO: THE WOODEN MIRROR (from https://www.youtube.com/watch?v=BZysu9QcceM&list=PL42CBF685AE29AEFC&index=1)

Complete the following transcript

OK, so this is *The Wooden Mirror*. It's a large **(1)** ....., it's made out of 835 of these wooden tiles. Optically, the way you get the image is, when the little tiles **(2)** ....., they get to be dark, and when they **(3)** ....., they hit the light, like this one here, and they get to be bright.

These are all motorised, so they can move up and down, controlled by the computer, like so. And on top of the piece, on the ceiling, are **(4)** ..... That's how we get a good contrast on the display. **(5)** ...., you can position them from very down, probably 30 degrees pointing down, to about 30 degrees pointing upwards.

In the centre of the piece, more or less at eyesight of a typical average person, there's a tiny camera. It's hiding here between four of the wooden chips. That video camera is capturing the image of whoever or whatever stands in front. **(6)** .....
.....
.....

A video signal usually contains, like, 500,000 pixels - a lot of pixels, and my system only uses 835 of those. That is done by the digitiser on the computer. The system is quite fast, so it refreshes itself probably 15 or 20 times a second, so it yields sort of a smooth animation.

VIDEO: DIGITAL ART

Watch the video showing the back of The Wooden Mirror. In the following script, indicate

*(a) the primary stress (in underlined words), and (b) the phonetic transcription of the **boldfaced** words*

In the back of the piece you can see all the components that make it work. You can see the back of the **camera**. So this is where the signals begin. The camera is connected through two wires, the power and the video signal going out to the desktop computer which is hiding in a different room. After the computer processes the signals, it sends commands back to the board. These commands come back through these ten lines of serial communications on the floor. These are then feeding, daisy chained, from one to the other, these serial-servo **controller** circuits. Each one of these serial-servo controllers is, in turn, wired to eight servo motors. A nice effect that comes with these serial controllers is that they blink a little green LED every time any of the motors associated with that board moves. So that gives me a very good way to debug the system. I move in front of, or I move something in front of the camera, and I see if all the boards are actually blinking. If one of the boards is not blinking, I know there is some sort of a problem and I can go and solve it. Also, it's nice just to look at them. You can see them all blinking together. Some people **suggest** that the back of the mirror is more beautiful than the front and I should hang it backwards.

LANGUAGE:

Here is a small excerpt adapted from an article that explains how The Treachery of Sanctuary *works. Find the 5 errors that have been introduced in the text. (from* https://www.vice.com/en_us/article/3dpg9v/how-it-works-chris-milks-ithe-treachery-of-sanctuaryi)

Technical Approach

The implementation of *Treachery* stitched together several differents technologies. We needed a way to visualize the viewer as a silhouette in front of the display so that we could augment his shadow, selectively removing parts or attaching wings. This meant we needed both the outline of the viewers, as well as datas points describing their actual posture in terms of torsos, arms, and legs.

For to create a flock of birds, we needed a way of efficiently animating hundreds of 3D models flying together and interacting directly with the silhouettes.

We chose to use both a 3D game development environment called Unity and a creative coding platform called openFrameworks. openFrameworks was using to access a Kinect camera sensing the presence of people.

On MADOC, you can watch additional videos on the Barbican exhibition and on Daniel Rozin's work.

PRESENTATION SKILLS

EFFECTIVE PRESENTATION DELIVERY

The following examples are taken from the excellent website *http://www.ruf.rice.edu/~comcoach/.*
We will not cover everything that they do, so you should visit the website to get more advice on delivering great presentations.

1. Eye contact: In which video does the presenter use eye contact most effectively? Why?
2. Gestures: In which video does the presenter use gestures most effectively? Why?
3. Nonverbals: In which video does the presenter use nonverbals most effectively? Why?
4. Voice: In which video does the presenter use his voice most effectively? Why?
5. Visual aids: In which video does the presenter use visual aids most effectively? Why?

SPEAKING PRACTICE: Impromptu speeches (Groups of 4)

Each group member picks up a statement card from the pile. You will then get 5 minutes to plan a 2-minute speech in support of the statement on the card.

After the preparation time, you will each deliver your speeches to the rest of the group. At the end of each round, you vote on whether or not you were convinced by each presentation.

DISTANCE LEARNING ALTERNATIVE (Individual practice)

Follow the “Impromptu Speech Topic Generator” link on MADOC to generate a list of topics. Choose one and give yourself five minutes to plan your 2-minute presentation. You will then deliver your speech in front of a mirror or webcam, trying to use your intonation and body language to deliver a convincing presentation.

PRESENTATION GRADING CRITERIA

The following table summarizes the main points you will be graded on in your end-of-term presentations. Make sure you apply what we've discussed today!

CONTENT	
Structure	Your presentation has to be structured AND your structure has to be made apparent (announcing outline in intro, using transitions)
Thoroughness	Even if you do not have much time, you can and should be thorough: focus on the most important things you have to say and be straightforward
Accuracy	Do not assume that your audience is ignorant: be precise and accurate.
COMMUNICATION	
Body language	When standing in front of an audience, remember your body says as much as your tongue: do not slouch, fidget, or keep your back to the board. Engage in communication with the whole group!
Volume and speed	Do not read/ hide behind your notes! Articulate and speak loud enough. Remember you WANT (remember TO want!) your message to be understood!
Eye contact	Look at everyone!
Visual aid	Communication tools may include ppt slideshows, diagrams, or other props (experimental setup). Either way, they remain TOOLS that need to be fully integrated in your communication plan. Simple approaches can help enhance the quality of your work!
LANGUAGE	
Grammar	Even though grammar mistakes are more acceptable in an oral than written context, basic errors must be eliminated (see L1+2 forbidden mistakes)
Pronunciation	It is crucial to check the pronunciation of new vocab as well as key (and therefore recurring) elements in your presentation: not only will mistakes hinder communication, they also discredit your performance
Vocabulary	Use simple language (both in terms of syntax and lexis). But make sure you DO have the right lexical references.

TRANSLATION EXERCISES

GRAMMAR: Translate the following sentences from French into English

1. Cette augmentation de 70% s'explique par le fait qu'aucune vaccination systématique n'a été effectuée pendant cette période.

2. Ce montage comprend 5 parties. Les différents éléments sont reliés à un ordinateur, équipé/muni d'un scanner.

3. Ce nouvel appareil de détection de fumée sera bientôt commercialisé.

4. Ce robot, qui a la forme d'un être humain et qui résiste à l'eau, a une intelligence artificielle qui s'adapte rapidement.

5. Les données sont en train d'être traitées, mais il semble que l'érosion est restée stable depuis près d'un siècle.

6. Regarde-le ! Pourquoi porte-t-il un T-shirt « Einstein avait tort » ? – C'est parce qu'il écrit une thèse sur le sujet.

7. Les scientifiques travaillent sur ce projet depuis deux ans, mais n'ont fourni aucun résultat fiable.

8. Les ventes d'ordinateurs portables ont augmenté de façon spectaculaire ces trois dernières années, tandis que les ordinateurs de bureau se vendent de moins en moins dernièrement.

9. Il s'est spécialisé dans l'étude du mode de reproduction de cette espèce en voie de disparition.

10. L'expérience de Miller, qui est censée expliquer l'origine de la vie, est très controversée.

11. Ils seraient capables de comprendre la physique quantique s'ils pensaient à acheter les bons livres.

12. Nous sommes heureux de vous annoncer que vous avez réussi à découvrir un nouvel élément.

13. Les scientifiques de la NASA se sont peut-être trompés ; ils n'auraient pas dû publier leurs résultats aussi tôt.

14. D'ici 2020, la température de l'océan aura augmenté de 0,5°, ce qui risque de provoquer des disparitions d'espèces marines.

15. Beaucoup de fausses informations ont circulé sur les implications de ces recherches.

16. De moins en moins d'étudiants choisissent d'étudier les mathématiques fondamentales ; l'attrait des mathématiques appliquées s'explique en partie par les nombreux débouchés de ces filières, notamment dans la finance. Pourtant, l'expérience prouve que peu de ces étudiants toucheront beaucoup d'argent.

FURTHER PRACTICE

Choose the best answer to complete the following sentences.

1. The deadline for … an abstract was in November.
   a. submit
   b. sustaining
   c. submitting
   d. submitted
2. Did they comment … her performance?
   a. on
   b. about
   c. Ø
   d. to
3. They wished to participate … the conference.
   a. to
   b. with
   c. at
   d. in
4. More than two … people attended the conference.
   a. thousands
   b. thousand of
   c. hundreds
   d. hundred
5. The aim of my presentation is to describe … our process for recycling polymers.
   a. you
   b. at you
   c. to you
   d. with you
6. I am going to present … an overview of the physics of smart materials.
   a. you
   b. at you
   c. to you
   d. you to
7. Let me show … this graph.
   a. you
   b. at you
   c. to you
   d. you to
8. I would like to introduce … a new approach.
   a. you
   b. at you
   c. you to
   d. you at
9. We had been requested to limit one slide … one main idea.
   a. for
   b. at
   c. to
   d. on
10. Don't leave a slide on the screen after … its subject.
    a. discussing
    b. discussed
    c. to explain
    d. to discuss
11. Each poster session author will be provided … a horizontal poster board and chair.
    a. of
    b. on
    c. Ø
    d. with
12. Use duplicates if you need to refer … the same slide at several different times in your talk.
    a. at
    b. to
    c. back
    d. for
13. This course is a general introduction … the history of science.
    a. to
    b. in
    c. at
    d. on
14. This course is designed to provide … an overview of the theory of Fourier transform.
    a. with
    b. over
    c. Ø
    d. by
15. He undertook a … undergraduate course in 2005.
    a. two-year
    b. two-yeared
    c. two years
    d. two year's
16. She had been admitted … ISIA in 1991.
    a. at
    b. Ø
    c. to
    d. for
17. They entered … Cambridge University in 2013.
    a. at
    b. into
    c. in
    d. Ø
18. They had pursued studies … Computer Science.
    a. of
    b. for
    c. in
    d. to

FURTHER PRACTICE

19. I was advised … Physics.
    a. not choose
    b. choose not
    c. not to choose
    d. not choosing
20. Our training … 5 months ago.
    a. has started
    b. has begun
    c. started
    d. begin
21. They requested … before the end of the academic year.
    a. us to get in touch with them
    b. us get in touch with them
    c. that we'll get in touch with them
    d. we got in touch with them
22. This course will introduce students … the phenomenon of light scattering.
    a. over
    b. Ø
    c. at
    d. to
23. This course will end … a general discussion.
    a. at
    b. with
    c. by
    d. into
24. Attendance … the first class meeting is mandatory.
    a. at
    b. for
    c. in
    d. to
25. Enrollment is limited … 60 students.
    a. at
    b. on
    c. to
    d. by
26. For more … about the program, please contact the administration office.
    a. informations
    b. detail
    c. items
    d. information
27. Before …, make sure you have chosen the right program.
    a. enrolling
    b. you enrolled
    c. to enroll
    d. you'll enroll
28. Your chance of getting into a good school is very dependent … how you score on the Graduate Management Admission Test (GMAT).
    a. of
    b. over
    c. on
    d. by
29. Pr Dupont has been teaching cellular biology … over 12 years.
    a. in
    b. on
    c. during
    d. for
30. Dr Durand among others will acquaint students … the principles of computing.
    a. on
    b. about
    c. to
    d. with

Source: Lydie Navard, *Scientifically Yours: 400 tests d'anglais appliqués à la communication scientifique internationale,* Tec & Doc Lavoisier: Paris, 1999.

COMPUTATIONAL FAIRY TALES

Understanding Big-O Notation and the Wizards' War

Big-O notation is a method of specifying the worst case performance of an algorithm as the size of the problem grows. Big-O notation is important in understanding how algorithms scale and for comparing the relative performance of two algorithms.

Years ago, a ferocious wizards' war raged across the land. Initially sparked by a disagreement over the correct pronunciation of the word “elementary”, things quickly escalated. The battles lasted months, as the two sides fought to break the stalemate. Neither side could gain an upper hand. The strength of the two sides was almost perfectly matched, until a computational theorist shifted the balance of power forever.

Clare O'Connell was not a wizard. Her formal training was as an accountant. She worked in the Bureau of Farm Animal Accounting: Large Mammal Division, where she spent her days tracking the kingdom's cows, horses, sheep, and pigs. It was not an exciting job, but it left her plenty of time to pursue other interests.

Clare had never taken any notice of the war until she was caught in the middle of a battle. Wizards' wars tended to be well separated from daily civilian life. The wizards would bicker and fight amongst themselves, but would rarely resort to any spell that had an impact on the general population. In fact, they avoided spells that could cause any actual physical harm altogether. But during one early May morning, Clare had been accidentally caught in the crossfire. She had been leaving the baker's shop when a stray spell turned her bread into a frog. The true target, a loaf of pumpernickel held by the wizard behind her, remained unscathed and quite edible. Unfortunately, the same could not be said for Clare's bread, which promptly hopped out of her hand and down the street. Clare was furious.

That morning, Clare resolved to break the stalemate and end the war for good. So, she met with the commander of the closest faction. During a three hour meeting, she grilled him about the war’s progress. In the process, she learned how wizards thought about their spells. The interview ended with one, unmistakable conclusion: wizards knew nothing about computational complexity. Years of casting spells had made them lazy and inefficient.

Clare knew that the first side to relearn the importance of computational complexity would win the war. So, she called together all of the wizards from the faction for a tutorial at the local pub.

"Your problem," she began. "Is that your techniques are inefficient."

The wizards mumbled in protest. How dare this accountant lecture them on the art of casting spells? They threatened to transform her drink into oatmeal.

"But there is a solution!" Clare continued. "There is a new technique, called Big-O notation, that will shift the tides. This notation tells you how a spell scales as the size of the battle increases, allowing you to know which spell is most efficient. You simply ask: how many steps you need to cast a spell when facing N different enemies? Then you strip out all the constant factors and focus on just the parts that grow the fastest."

"For example," Clare continued. "If a spell takes 3 steps to cast, regardless of the number of enemies, then it is an O(1) spell -- constant cost. In contrast, if you need a single step for each pair of enemies then the cost is O(N^2) -- quadratic cost. In a large battle, you want spells that will scale well."

The wizards grumbled in protest. "That would never work." "It is simplifying the problem too much." "This accountant is crazy."

Clare was unfazed. "What is your favorite spell?" Clare asked a wizard in the front row.

He turned red at being singled out and mumbled: "The spell of Pairwise Protection."

"Which does?" prompted Clare.

"Well… if you cast it on an enemy and a friend, the friend is protected from that enemy for a full five minutes."

"How long does it take to cast?"

"Two seconds. It is a fast spell."

"But it also depends on how many people are in the battle. Doesn't it?" Clare pointed out. The wizard looked back blankly.

Clare sighed. "When you are in a large battle, you need to understand how the cost of using a spell increases as the number of people in the battle increases. Let's take the spell of Things Smelling Like Fish. You cast it once for each enemy in the battle and they smell rotting fish for the next half an hour. One step for each enemy, so it is a O(N) spell. It scales linearly with the number of enemies."

COMPUTATIONAL FAIRY TALES

"In contrast," Clare continued. "the spell of Pairwise Protection requires you to cast it on each pair of friends and enemies. If there are N enemies and M friends, you need to cast it M*N times. So the cost is O(M*N). If you have a lot of friends, that is going to take a while."

"Good thing Henry does not have many friends," someone joked from the back row. A few muffled laughs followed. Clare ignored the comment.

"The spell of Things Smelling Like Fish takes 15 seconds to cast," objected a wizard in the back row. "Your Big-O notation does not capture that!"

"You are correct," admitted Clare. "Big-O notation is only used to compare how spells scale as the size of the battle scales. This is where your strategy is lacking. You are still accustomed to the simpler world of dueling, where the number of enemies is always one. You focus too much on the constant factors."

"Let me assure you," Clare continued, "at some size of battle an O(N^2) spell will always take much much longer than an O(N) spell. At some point the constant factors just do not matter anymore. That is the value of Big-O notation."

The same wizard went back on the offensive. "Are you telling me that it is better to cast the spell of Loud Techno Music, which takes one hour and impacts all enemies, than the spell of Temporary Elevator music, which takes one minute but impacts only one emery? It would seem that that is what your Big-O notation would recommend."

"Yes," said Clare. "If there are more than 60 enemies, the spell of Loud Techno Music is more efficient the spell of Temporary Elevator Music."

The wizard was stunned. He repeated the math over and over in his head to check her answer. She was correct.

"What about the spell of Love Triangles? That takes only 1 second to cast," argued another wizard.

"You need to cast it on ALL triplets of people. So it is O(N^3). If you have twenty opponents, that is 20*20*20 = 8000 seconds! That is over two hours!"

The wizards gasped in unison. They had never though about it like that before.

"Consider the spell of Uncomfortably Long Toenails," suggested Clare. "This spell fell out of favor a few years ago, because it needs a 120 second preparation before casting it for the first time each day. It would not work well in duels. However, once you perform that preparation once, it only takes 5 seconds an enemy. So the spell takes 120 + 5*N seconds for N people. Big-O notation strips out all those constant factors and simply asks 'What happens to the cost as N gets really large?' In this case, the answer is: the spell of Uncomfortably Long Toenails scales linearly. It is an O(N) algorithm, because as N grows that is the term that dominates."

By the end of the night, Clare had convinced all of the wizards in the room to pay attention to the Big-O cost of the spells that they were using. It was a radical shift from the way they had always looked at their spells, where they had focused solely on the cost for each time they cast it. Spells of Broken Command Chains, which had to be cast on all possible orderings of opponents, O(N!), immediately fell out of favor. Spells that scaled well became new standards.

Tired, but satisfied, Clare went home for the night. On her way home, she stopped at the baker's again for a loaf of fresh bread. While standing behind the counter, she noticed the baker using an O(N^3) algorithm to make rolls. With a put-upon sigh, she interrupted the work. "You know that that is not the most efficient way to make rolls…" she began.

http://computationaltales.blogspot.com/2011/04/understanding-big-o-notation-and.html

Also in Kubica, Jeremy. *Computational Fairy Tales*. CreateSpace Independent Publishing Platform, 2012.

THE PRINCIPLES OF CLEAR WRITING

In the following pages, you will find some information to keep in mind when writing in English. Those principles will (hopefully) help you write clear, effective, and logical sentences and texts.

Make characters subjects and actions verbs

Compare the following sentences:

> *A: Researchers have identified the AIDS virus but have failed to develop a vaccine to immunize those at risk.*
>
> *B: Attempts by economists at defining full employment have been met with failure.*

Sentence A is clearer for two reasons:

- The characters in sentence B are not the subject. The subject is attempts but the characters are *economists*.
- The actions in sentence B are not verbs but abstract nouns (*attempts*, *failure*) and the verb (*have been met with*) expresses little meaning.

=> Sentence A is clearer because the characters are subjects and the actions are verbs. Also, the subjects are short, specific, and concrete.

So, when you match characters to subjects and actions to verbs in most of your sentences, readers are likely to think your prose is clear, direct, and readable.

Using that principle, sentence B could be rewritten as follows:

> *Economists have attempted but failed to define full employment.*

It does not follow that all nominalizations are bad, but French speakers tend to use too many of them, so keep that in mind when writing in English.

Old information goes before new information

We depend on the beginning of a sentence to give us a context of what we know before we read what's new. A sentence confuses us when it opens with information that is new and unexpected. For example, in this next passage, the subject of the second sentence gives us new and complex information (**boldfaced**), before we read more familiar information that we recall from the previous sentence (underlined):

> *We must decide whether to improve education in the sciences alone or to raise the level of education across the whole curriculum.* ***The weight given to industrial competitiveness as opposed to the value we attach to the liberal arts*** *will determine our decision.*

We could read the second sentence more easily if it were passive, because the passive would put the short, familiar information first and the newer, more complex information last:

> *We must decide whether to improve education in the sciences alone or to raise the level of education across the whole curriculum. Our decision will be determined by the weight we attach to industrial competitiveness as opposed to the value we attach to the liberal arts.*

So remember that sentences are cohesive when the last few words of one set up information that appears in the first few words of the next. That is what gives us our experience of flow. And in fact, that's one of the biggest reasons the passive is in the language: to let us arrange sentences so that they flow from one to the next easily.

In every sentence that you write, you have to balance principles that make individual sentences clear and principles that make a passage cohesive. But in that tradeoff, give priority to helping readers create a sense of cohesive flow. Fortunately, the principle of old before new cooperates with the principle of characters as subjects. Once you mention your main characters, readers take them as familiar information. So when characters are up front, so is familiar information.

Pay attention to the beginning of your sentences

Readers are more likely to judge as clear a unit of writing that opens with a short segment that they can easily grasp and that frames the longer and more complex segment that follows.

There are two rules of thumb about beginning a sentence: (1) Get to the subject quickly and (2) get to the verb and object quickly.

THE PRINCIPLES OF CLEAR WRITING

- Get to the subject quickly:

Avoid beginning more than a few sentences with long introductory phrases and clauses. When you find a sentence with a long introductory clause, try moving it to the end. If it doesn't fit there, try turning it into a sentence of its own.

> *Because of the growing use of computers to store and process corporate information, industrial spying is increasing rapidly.*
>
> *=> Industrial spying is increasing rapidly because of the growing use of computers to store and process corporate information.*

It is, however, a fact of English style that clauses beginning with *if*, *when*, and *although* tend to appear before main clauses rather than after. So if you cannot avoid opening with a subordinate clause, keep it short.

- Get to the verb and object quickly:
  - Avoid long, abstract subjects: revise long subjects into short ones.

The possibility that some termini have a base composition different from that of DNA simply because they are the nearest neighbors of termini specifically recognized by the enzymes can be checked by comparing the experimental results with those expected from the nearest neighbor data.

=> If we compare the experimental results with those expected from the nearest neighbor data, we can check the possibility that some termini have a base composition different from that of DNA simply because they are the nearest neighbors of termini specifically recognized by the enzymes.

  - Avoid interrupting the subject-verb connection: move the interruption to the beginning or end of its sentence, depending on whether it connects more closely to what precedes or follows it. However, short interruptions (for instance, one-word adverbs) are not a problem.

The continued and unabated emission of carbon dioxide gas into the atmosphere, unless there is a marked reduction, will eventually result in serious changes in the climate of the world as we know it today.

=> If we do not reduce our emissions of carbon dioxide, the current climate will be seriously changed//affected. OR Unless we reduce our emissions of carbon dioxide, the current climate will be seriously changed.

  - Avoid interrupting the verb-object connection: Move the interrupting element to the beginning or end of its sentence, depending on what comes next.

The Institute launched, in partnership with the University of Lisbon, a new Ecodynamics Award.

=> The Institute launched a new Ecodynamics Award in partnership with the University of Lisbon.

<u>Pay attention to the end of your sentences</u>

The first few words of a sentence are especially important because they state its topic, what the sentence is about or comments on. The last few words of a sentence are also particularly important because they receive special emphasis. This is what we will call the sentence stress. How you manage the emphasis in that stress position helps establish the voice readers hear in your prose. If you end a sentence on words that have little meaning, your sentence will seem to end weakly.

Three tactical revisions:

- Trim the end:

Sociobiologists claim that our genes control our social behavior in the way we act in situations we are in every day.

=> Sociobiologists claim that our genes control our social behavior.

THE PRINCIPLES OF CLEAR WRITING

- Shift peripheral ideas to the left:

The data offered to prove ESP are weak, for the most part.

=> For the most part, the data offered to prove ESP are weak.

Job opportunities in computer programming are getting scarcer, it must be remembered.

=> It must be remembered that job opportunities in computer programming are getting scarcer.

- Shift new information to the right:

Questions about the ethics of withdrawing intravenous feeding are more difficult [than something just mentioned].

=> More difficult [than something just mentioned] are questions about the ethics of withdrawing intravenous feeding.

Sources: Joseph M. Williams and Joseph Bizup, *Style: Lessons in Clarity and Grace,* Pearson: Boston, 2013.

https://cgi.duke.edu/web/sciwriting/index.php?action=lesson3#examples

https://owl.english.purdue.edu/owl/resource/600/01/

FUN WITH SPELL CHECKERS

ADDITIONAL ACTIVITY: *Read the following poem and correct all the mistakes in it*

A Little Poem Regarding Computer Spell Checkers...

Eye halve a spelling chequer
It came with my pea sea
It plainly marques four my revue
Miss steaks eye kin knot sea.

Eye strike a key and type a word
And weight four it two say
Weather eye am wrong oar write
It shows me strait a weigh.

As soon as a mist ache is maid
It nose bee fore two longs
And eye can put the error rite
Its rare lea ever wrong.

Eye have run this poem threw it
I am shore your pleased two no
Its letter perfect awl the weigh
My chequer tolled me sew.

From http://www.latech.edu/tech/liberal-arts/geography/courses/spellchecker.htm