




LA CYBERCULTURE

Computer Metaphors & Reality

- *People are just sitting on the curb of the information highway*
- *Old browsers are roadblocks, detouring the surfer from third-generation sites.*
- Examples
 - OS, graphical OS: Desktop, Windows, copy&paste, open, close, tiles, scrapbook, drag & drop, bootstrapping
 - Computer medicine: virus, worm, antivirus, infection,...
 - Web - ocean: navigation, surfing, browser, piracy
 - Networking: mail, client/server, peer-to-peer, star, token ring network
 - Process control: Semaphore, traffic control, mutex, round-robin, killing a process, stack (LIFO), queue (FIFO), flags, handshaking
 - Social interaction: network native, flamewar, flamebait, elf, troll, phishing, mail, chat
 - Resource management: starvation, deadlock, idle, busy, sleeping, sandbox, data mining, writers and readers
 - IT humour: more/less, BASH (Bourne-again shell), GNU (Gnu's not UNIX)




Internet

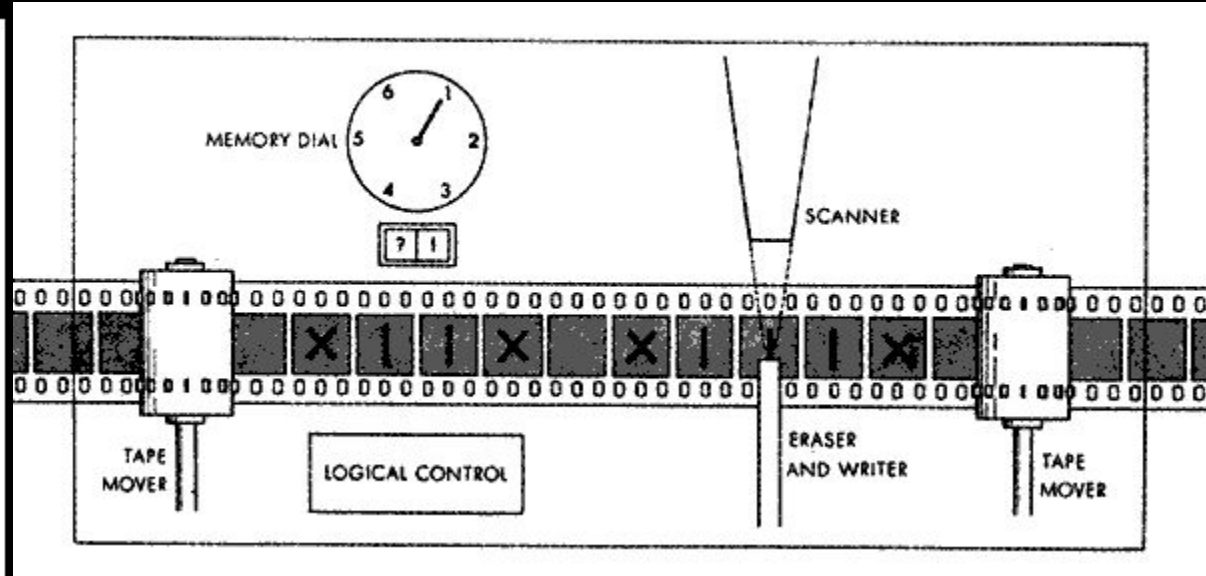
- Global, worldwide
 - Network of networks
 - Run on TCP/IP, a suite of accessory standards
 - Heterogeneous & homogeneous
 - Media aggregation
 - No centralized governance
 - Robust, fault-tolerant, distributed
- 



Visionaries

- Kurt Gödel (1906-1978), Bertrand Russell
 - Norbert Wiener (1894-1964)
 - Alan Turing (1912-1954)
 - John von Neumann (1903-1957)
 - Claude Shannon (1916-2001)
 - Douglas Engelbart (1925)
 - Ted Nelson (1937)
 - Tim Berners-Lee (1955)
 - Vinton Cerf (1943) & Robert Kahn (1938)
 - Steve Jobs (1955-2011)
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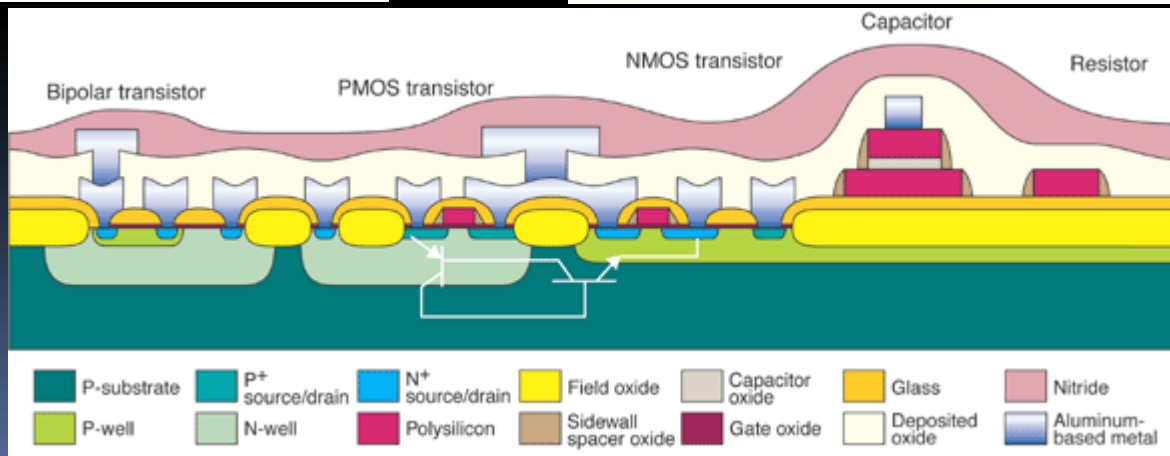
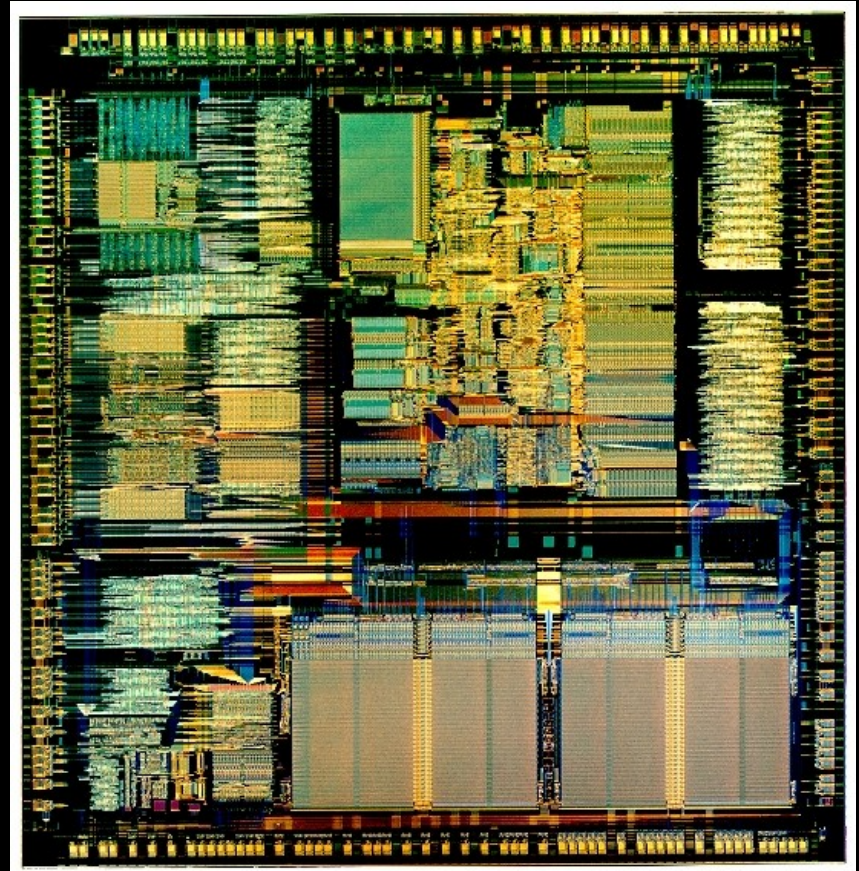
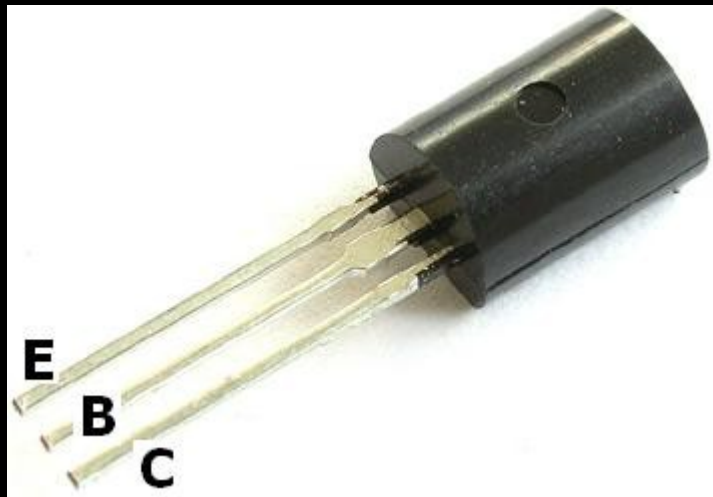
Alan Turing



- *Logicien, mathématicien, chercheur en cryptanalytique, fondateur de l'informatique théorique moderne*
- *Machine de Turing*
- *A Bletchley Park, il a décrypté le code de la machine allemande Enigma – exploit qui a probablement rapproché a victoire des Alliés Deuxième guerre mondiale*


Transistor, IC

1947 (Bardeen, Brattain, Shockley)






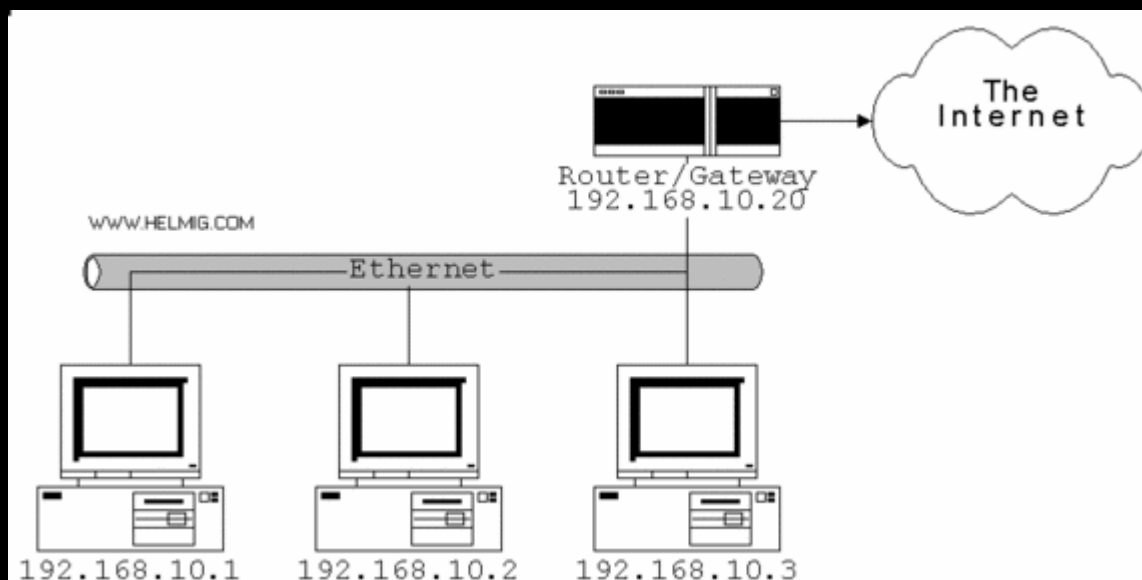
WWW (Web)

- Founder: Tim Berners-Lee, CERN (1989)
 - Global set of documents, texts, images and other resources
 - Connected by hyperlinks
 - URI (URL) references
 - HTTP
 - Browser dependence
- 



Networking, TCP/IP

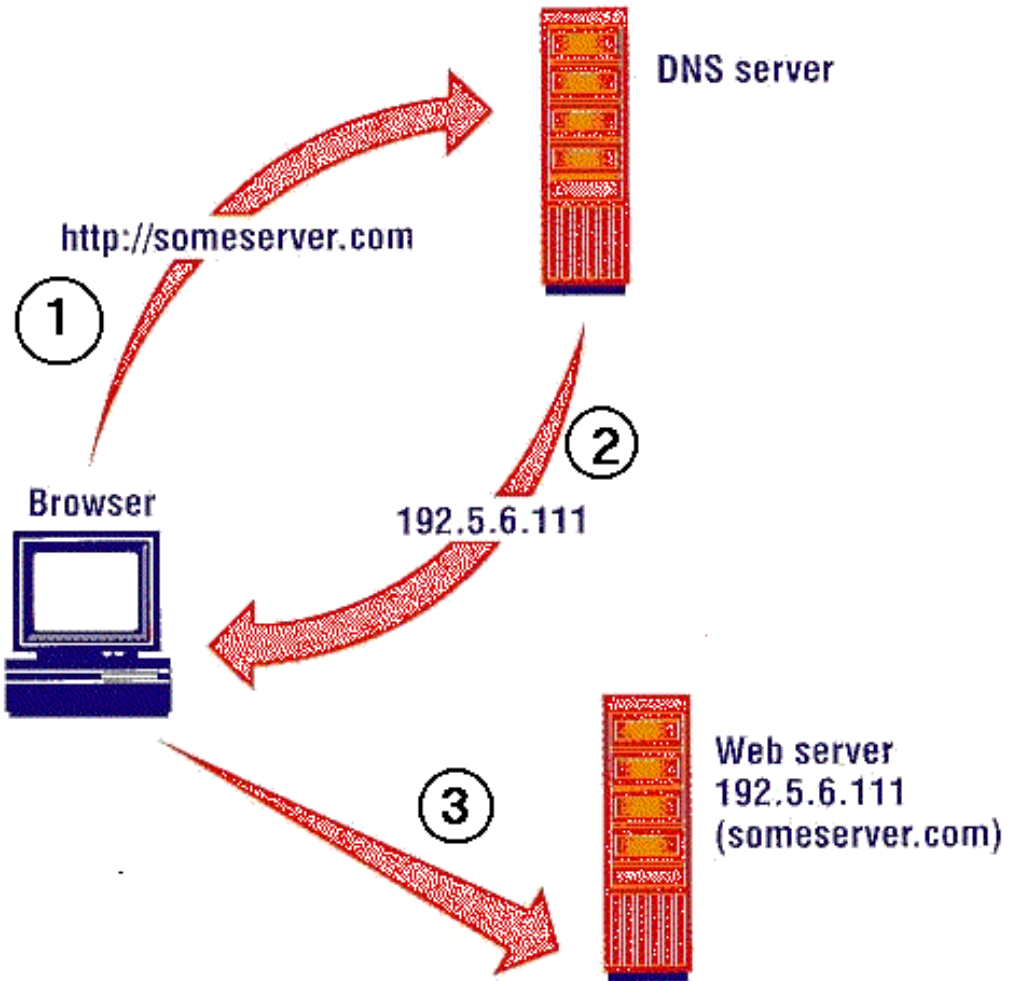
- No central governing body
 - Origins in the USA/USSR military race
 - DARPA net
 - Reliability, disaster survivability
 - Packet switching technology
 - Complex system of IP addressing (IPv4, IPv6)
 - Stateless protocol
- 



Tracing route to ntdwwaaf.compuserve.com [149.174.213.39]
over a maximum of 30 hops:

1	240 ms	209 ms	214 ms	lon-dial-29.compuserve.net [195.232.1.48]
2	253 ms	237 ms	219 ms	lon-gw.compuserve.net [195.232.1.1]
3	208 ms	231 ms	215 ms	fddi1-border2.lon.compuserve.net [195.232.0.35]
4	337 ms	319 ms	285 ms	hssi2-border1.ar1.compuserve.net [206.175.73.29]
5	305 ms	290 ms	303 ms	fddi1-ar1-cis.ar1.compuserve.net [205.156.223.57]
6	356 ms	316 ms	286 ms	fddi0-ar1-7k-transcenter.compuserve.com [149.174.5.133]
7	317 ms	293 ms	295 ms	149.174.6.2
8	329 ms	319 ms	319 ms	149.174.5.171
9	352 ms	372 ms	369 ms	ntdwwaaf.compuserve.com [149.174.213.39]

Trace complete.



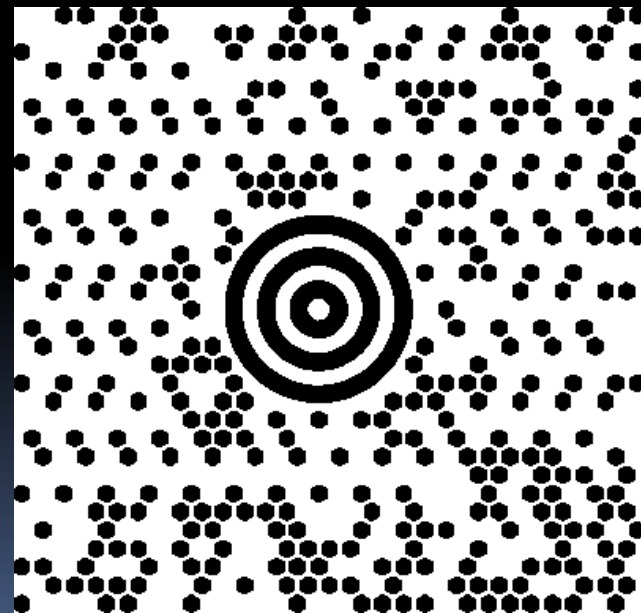
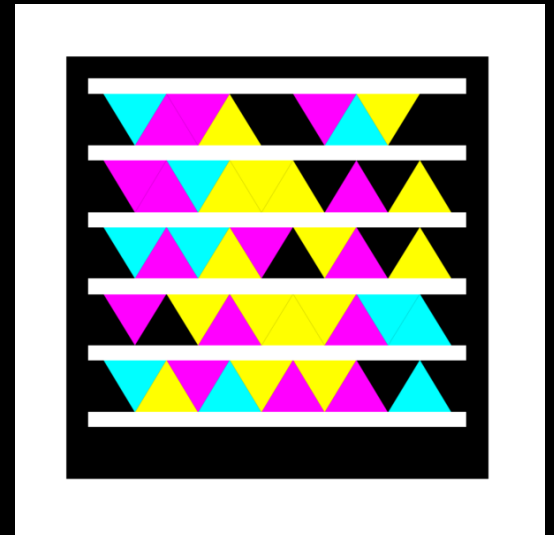
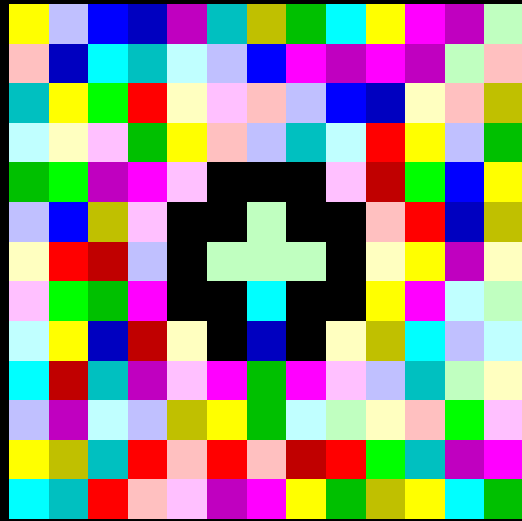
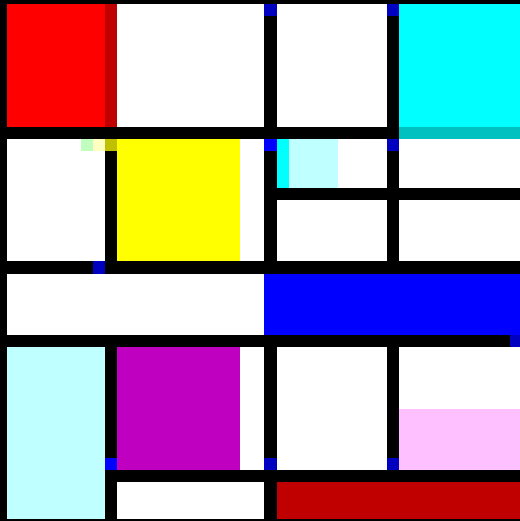


Code

- code, in communications, an unvarying rule for replacing a piece of information such as a letter, word, or phrase with an arbitrarily selected equivalent. The term has been frequently misapplied and used as a synonym for cipher. In the past this blurring of the distinction between code and cipher was rather inconsequential; in fact, many historical ciphers would be more properly classified as codes according to present-day criteria.
- In modern communications systems, information is often both encoded and encrypted (or enciphered), and so an understanding of the difference between the two is important. Both codes and certain kinds of ciphers—substitution ciphers—replace elements of a message with other symbols; however, unlike codes, ciphers do so in accordance with a rule defined by a secret key known only to the transmitter of the information and the intended receiver. Without this secret key, a third party cannot invert the replacement to unscramble the cipher.
- During the early years of the 20th century, elaborate commercial codes were developed. One such system was the Baudot code, which encoded complete phrases into single words (five-letter groups) for use by telegraphers. This type of code proved inadequate for radio, however, and other, more advanced forms of communications subsequently developed. In recent years various codes have been introduced to accommodate computer data and satellite communications. See also cryptology; cipher.

Code - properties

- **Conventional** (symbolic) – no link to real world whatsoever
- **Homogeneous** – twofold: inside & outside the code
- “Double **(multiple) articulation**”: bit, byte, kB, ...
- **Unambiguous** – 1:1 correspondence – 255 is coded as 11111111, 11111111 gives 255
- Code translation (**homomorphism**): e.g. bin2hex 1011 0101 = B5.





QR code generator

- <http://qrcode.kaywa.com/>

Binary, hexadecimal, ASCII code

	0	1	2	3	4	5	6	7
0	NUL	DLE	space	0	@	P	`	p
1	SOH	DC1 XON	!	1	A	Q	a	q
2	STX	DC2	"	2	B	R	b	r
3	ETX	DC3 XOFF	#	3	C	S	c	s
4	EOT	DC4	\$	4	D	T	d	t
5	ENQ	NAK	%	5	E	U	e	u
6	ACK	SYN	&	6	F	V	f	v
7	BEL	ETB	'	7	G	W	g	w
8	BS	CAN	(	8	H	X	h	x
9	HT	EM	)	9	I	Y	i	y
A	LF	SUB	*	:	J	Z	j	z
B	VT	ESC	+	;	K	[	k	{
C	FF	FS	,	<	L	\	l	|
D	CR	GS	-	=	M	]	m	}
E	SO	RS	.	>	N	^	n	~
F	SI	US	/	?	O	_	o	del

Exercices

- Write in hex: 1101 1001 1100 0010 1111 1010 0101
1000 1010
- Decode into ASCII:
43:41:52:50:45:20:44:49:45:4d
 - %4C%61%20%76%69%65%20%65%73%74%20%62%65%6C%6C%65
- Add 1101 + 111 = ...
- Compare by size: 1000 ? 1011
- Multiply 11000
 - by 2
 - by 4

Projekt - prezentace

- Představit prototyp projektu, nápad, umělecké dílo, didaktický materiál...
- Ve stylu grantové přihlášky
- Prezentace bude obsahovat
 - Typologické zařazení (viz nt2.uqam.ca), jasné položení problému a cílového publika
 - Požadované prostředky a „lidské zdroje“
 - Přibližná cena
 - Představení prototypu samotného, včetně základní kostry (např. série obrázků bez nutnosti vytvořit hypertext samotný)
 - Zhodnocení přínosů a omezení daného díla
- Prezentace česky, francouzsky, anglicky

Příklady:

- Cvičení na spojení jazyka a vyhledávání v Googlu
 - <http://google.isnotthemap.net/>
 - <http://www.iterature.com/life/>
- Hypertextové dílo (didaktické či literární)
- Poesie – vhodné spojení slova a hypermédií, kinetická poesie
- Slovo & obraz
- Cvičení / testy na daný jazykový jev s vhodným využitím hypermédií
- Návrh na zpracování jednu z kategorií NLP ve francouzštině