

<epam>

Morse code

Binary number system

Computer Science Basics



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Signal lamp communication

A .

B ..

C ...

D

E
.....

F
.....

G
.....

$$26/2 = 13$$

HELLO > 52
1111
85121215



Morse code

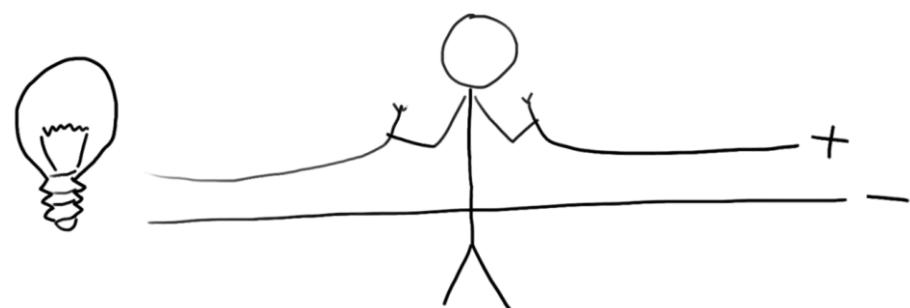
A	• -
B	- - . . .
C	- - : :
D	- - - .
E	.
F	• - - -
G	- - - -
H	• • •
I	• •
J	• - - - -
K	- - : :
L	- . . .
M	- - -
N	- -
O	- - - .
P	• - - - .
Q	- - - : :
R	- . . .
S	• • •
T	-

U	• • -
V	• • • -
W	• - -
X	- - - .
Y	- - : :
Z	- - - -
1	• - - - -
2	• - - - - -
3	• - - - - - -
4	• - - - - - - -
5	• - - - - - - - -
6	• - - - - - - - - -
7	• - - - - - - - - - -
8	• - - - - - - - - - - -
9	• - - - - - - - - - - - -
0	• - - - - - - - - - - - - -

HELLO ! → 16

Telegraph key transmitter

• • • . . - - - -



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Binary number. Bit.

Binary number system

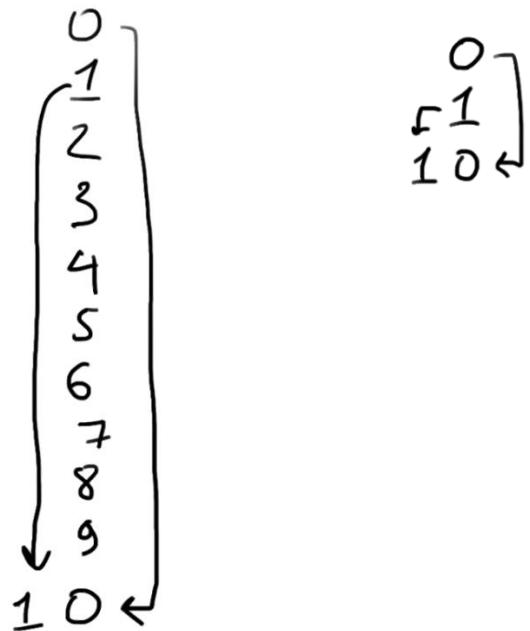
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Binary number system



Binary numbers capacity

$$\boxed{0}, \boxed{1} = 2$$

$$\boxed{00}, \boxed{01}, \boxed{10}, \boxed{11} = 4$$

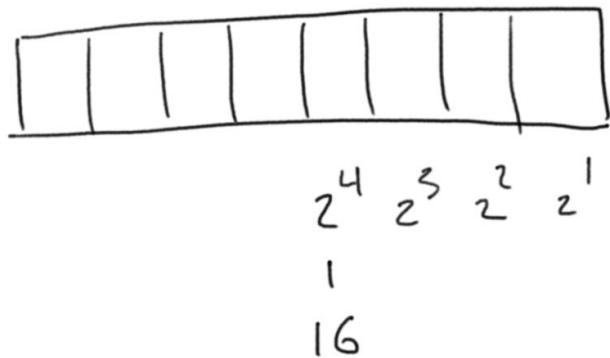
$$\begin{matrix} 000, & 001, & 010, & 011 \\ 100, & 101, & 110, & 111 \end{matrix} = 8$$

$$\begin{array}{l} 1 \rightarrow 2^1 = 2 \\ 2 \rightarrow 2^2 = 4 \\ 3 \rightarrow 2^3 = 8 \\ 4 \rightarrow 2^4 = 16 \\ 5 \rightarrow 2^5 = 32 \end{array}$$

1|0|0|1|0|1|1|0

$$2^8 = 256$$

Hexadecimal number system



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Logical gates

Binary number system

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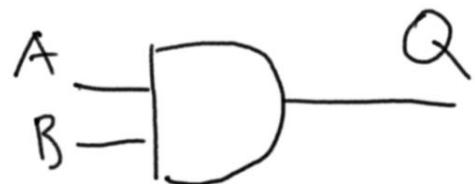
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Logical gates. NOT, AND

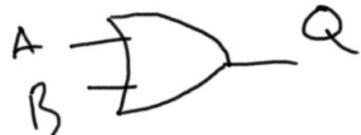


A	Q
0	1
1	0

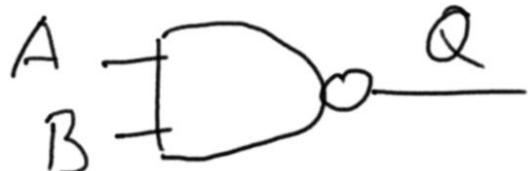


A	B	Q
0	0	0
0	1	0
1	0	0
1	1	1

Logical gates. OR, NAND



A	B	Q
0	0	0
0	1	1
1	0	1
<u>1</u>	<u>1</u>	<u>1</u>



A	B	Q
0	0	1
0	1	1
1	0	1
1	1	0

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Relay. Transistor.

Binary number system

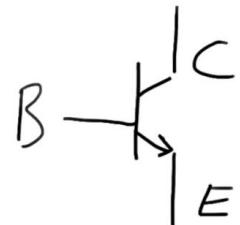
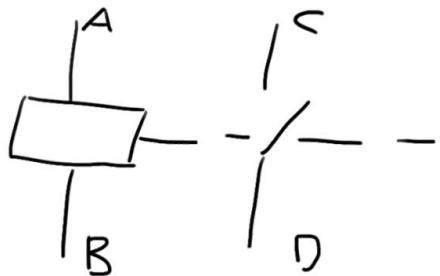
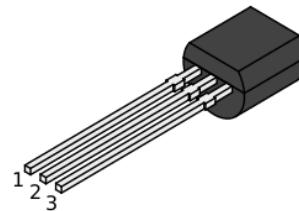
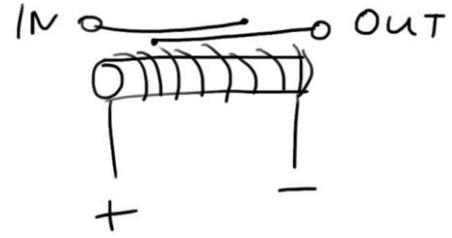
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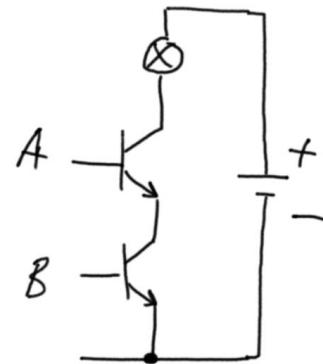
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Relay. Transistor



Transistor-transistor logic



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Transistor logic

Binary number system

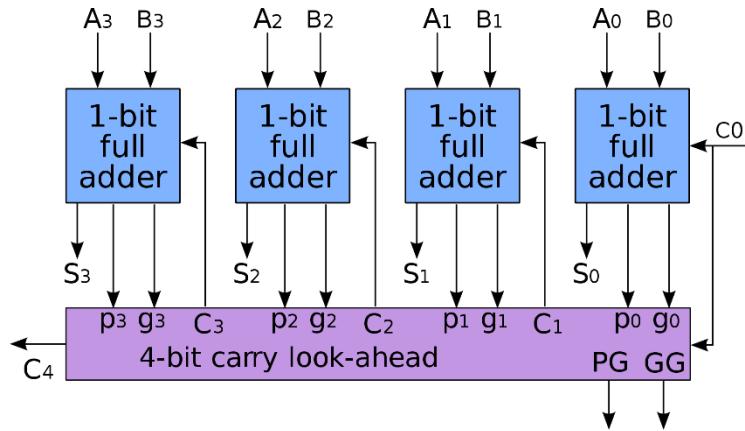
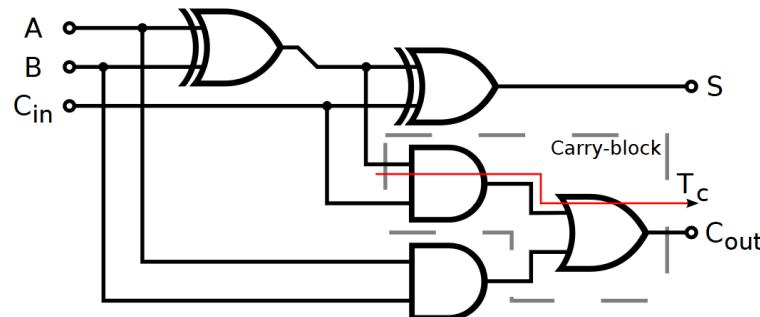
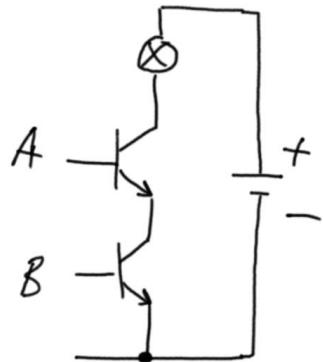
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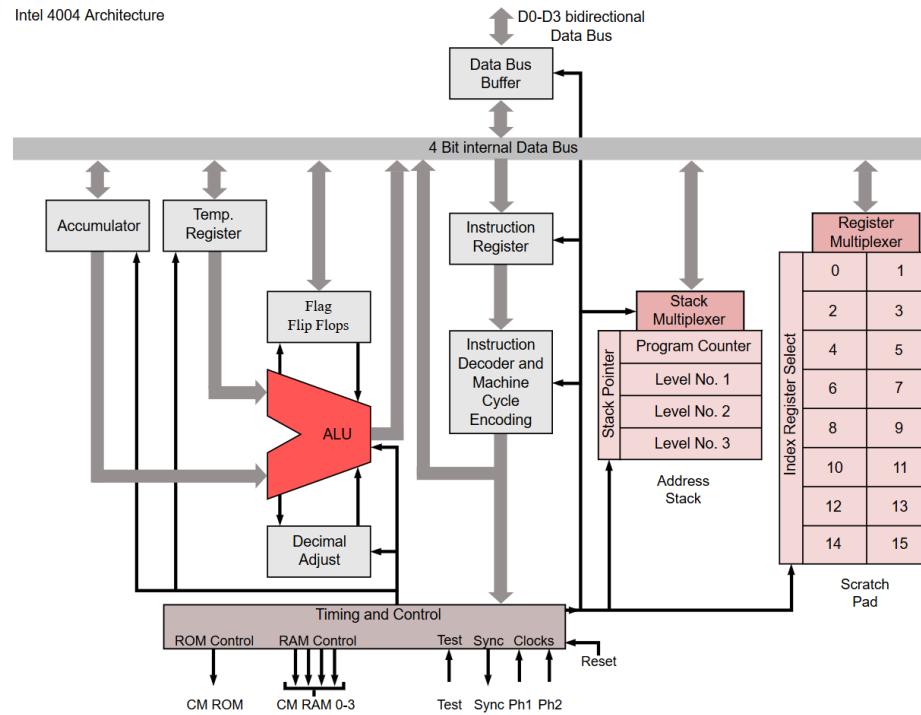
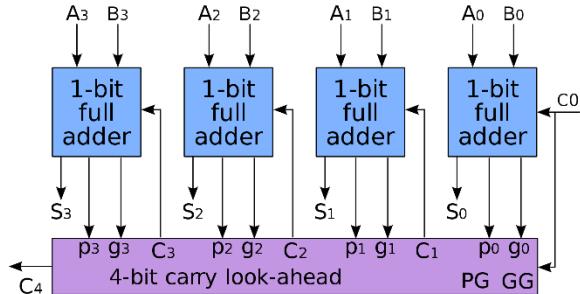
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TTL



Microchips



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Processor

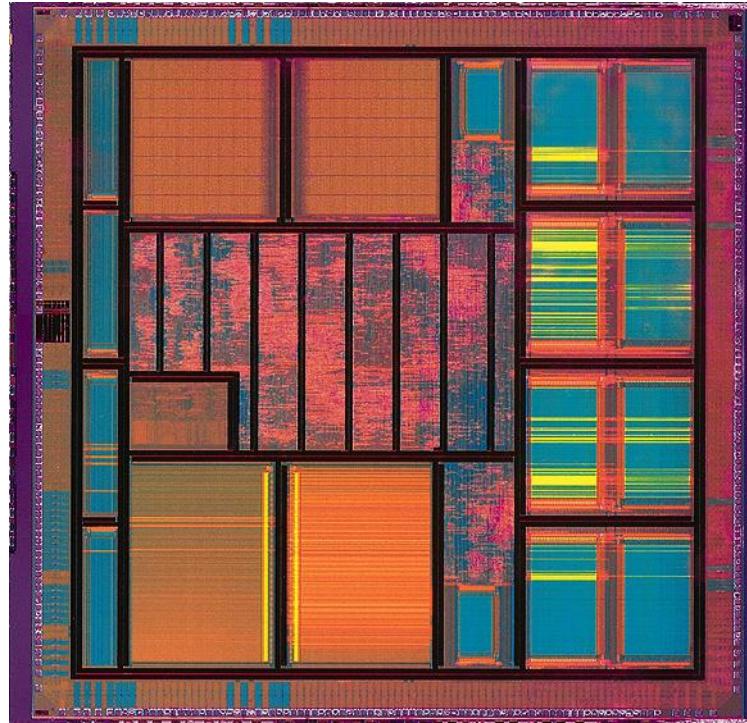
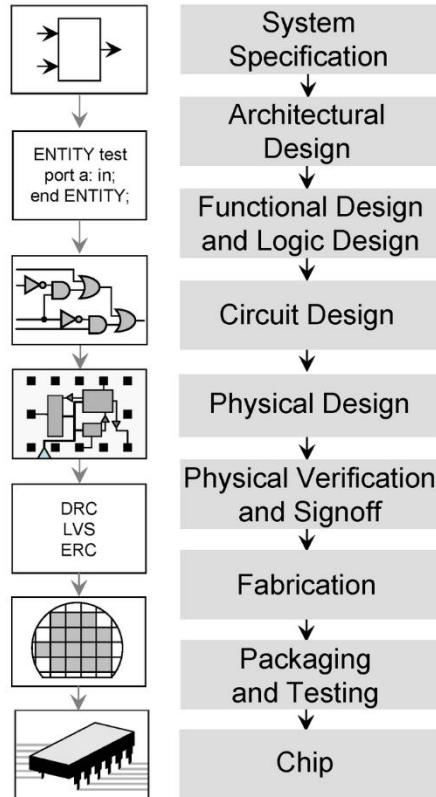
Binary number system

Computer Science Basics

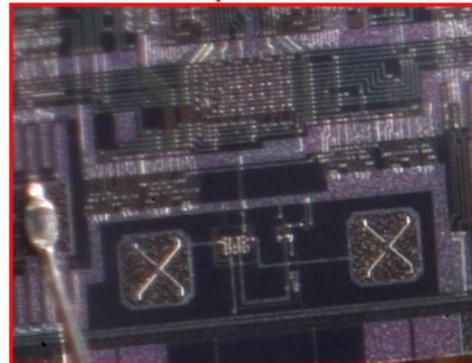
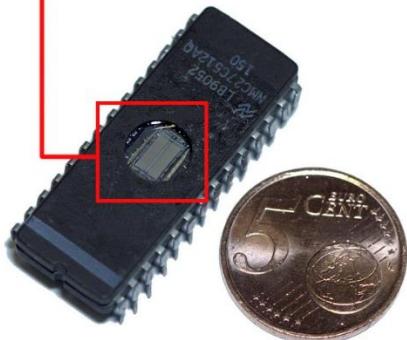
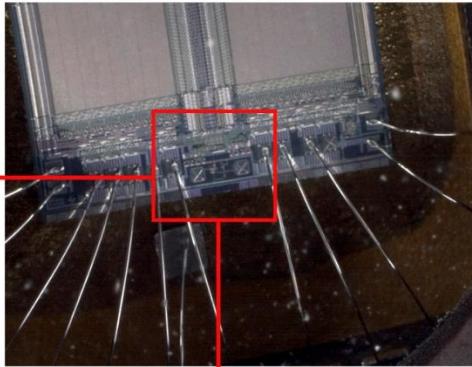
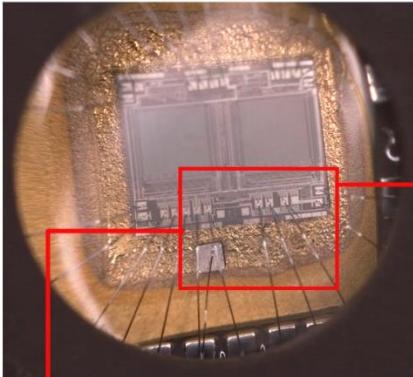


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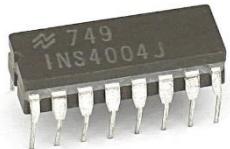
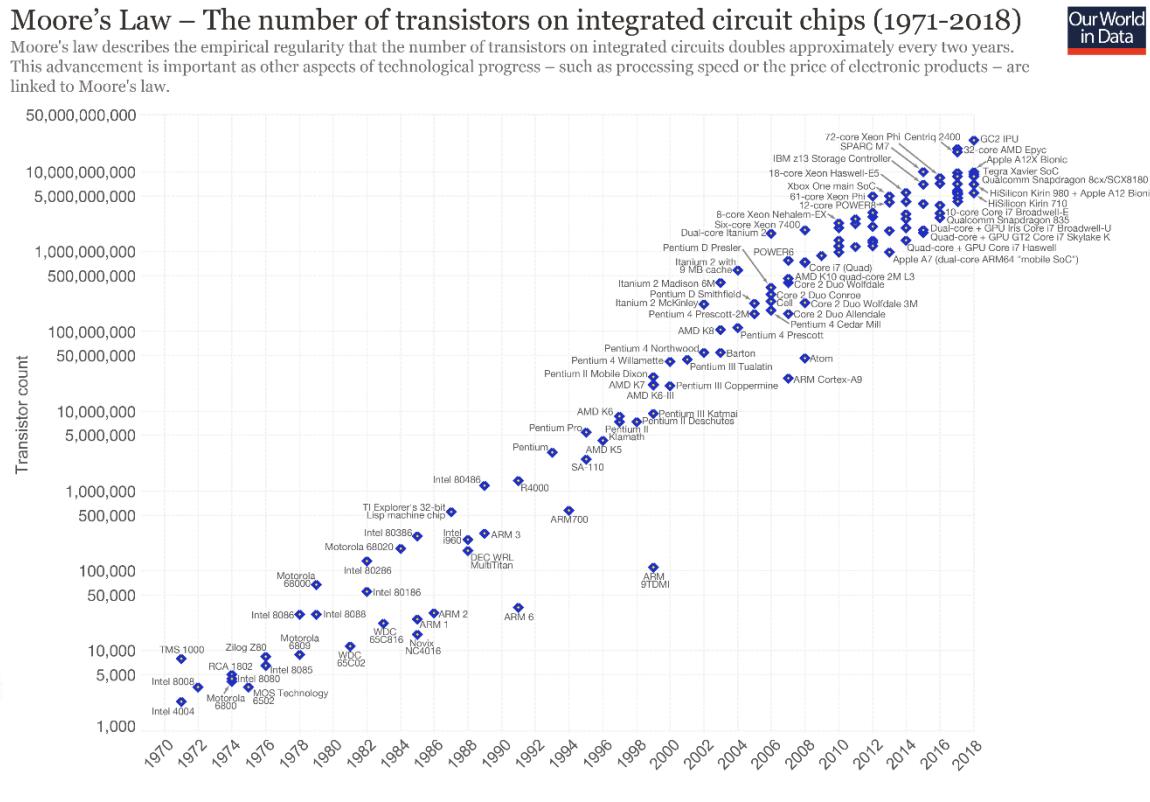
Microchips



Microchips



Processors



Data source: Wikipedia (https://en.wikipedia.org/wiki/Transistor_count)
The data visualization is available at OurWorldinData.org. There you find more visualizations and research on this topic.

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Text encoding

Binary number system

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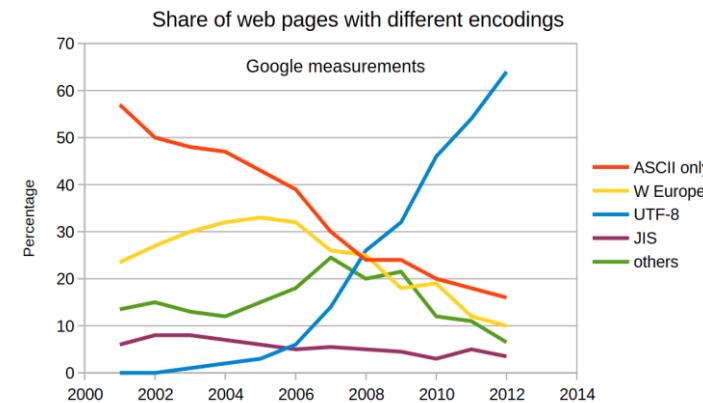
8-bit ASCII

DEC	HEX	BIN	Symbol	Description
65	41	1000001	A	Uppercase A
66	42	1000010	B	Uppercase B
67	43	1000011	C	Uppercase C
68	44	1000100	D	Uppercase D
69	45	1000101	E	Uppercase E
70	46	1000110	F	Uppercase F
71	47	1000111	G	Uppercase G
72	48	1001000	H	Uppercase H
73	49	1001001	I	Uppercase I
74	4A	1001010	J	Uppercase J
75	4B	1001011	K	Uppercase K
76	4C	1001100	L	Uppercase L
77	4D	1001101	M	Uppercase M
78	4E	1001110	N	Uppercase N
79	4F	1001111	O	Uppercase O
80	50	1010000	P	Uppercase P
81	51	1010001	Q	Uppercase Q
82	52	1010010	R	Uppercase R
83	53	1010011	S	Uppercase S
84	54	1010100	T	Uppercase T
85	55	1010101	U	Uppercase U
86	56	1010110	V	Uppercase V
87	57	1010111	W	Uppercase W
88	58	1011000	X	Uppercase X
89	59	1011001	Y	Uppercase Y
90	5A	1011010	Z	Uppercase Z

X=ALT+0088

Unicode

Name	UTF-8	UTF-16	UTF-16BE	UTF-16LE	UTF-32	UTF-32BE	UTF-32LE
Smallest code point	0000	0000	0000	0000	0000	0000	0000
Largest code point	10FFFF	10FFFF	10FFFF	10FFFF	10FFFF	10FFFF	10FFFF
Code unit size	8 bits	16 bits	16 bits	16 bits	32 bits	32 bits	32 bits
Byte order	N/A	<BOM>	big-endian	little-endian	<BOM>	big-endian	little-endian
Fewest bytes per character	1	2	2	2	4	4	4
Most bytes per character	4	4	4	4	4	4	4



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Graphics encoding

Binary number system

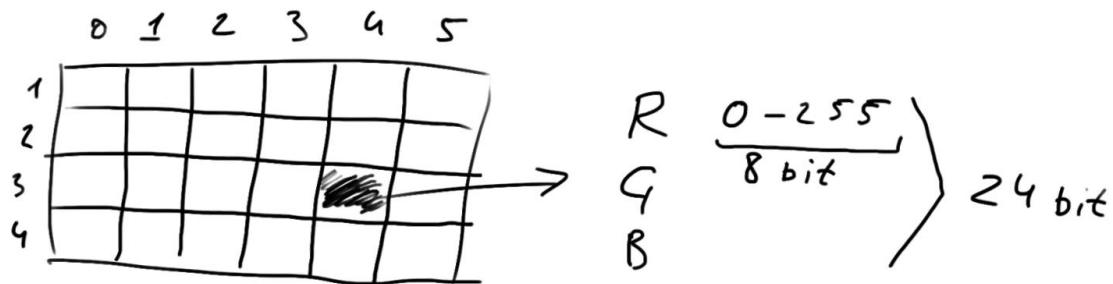
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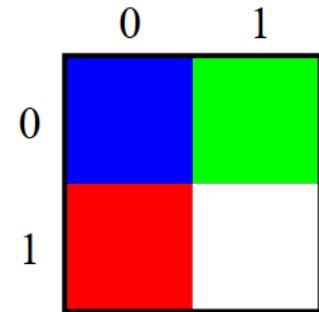
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Image bitmap

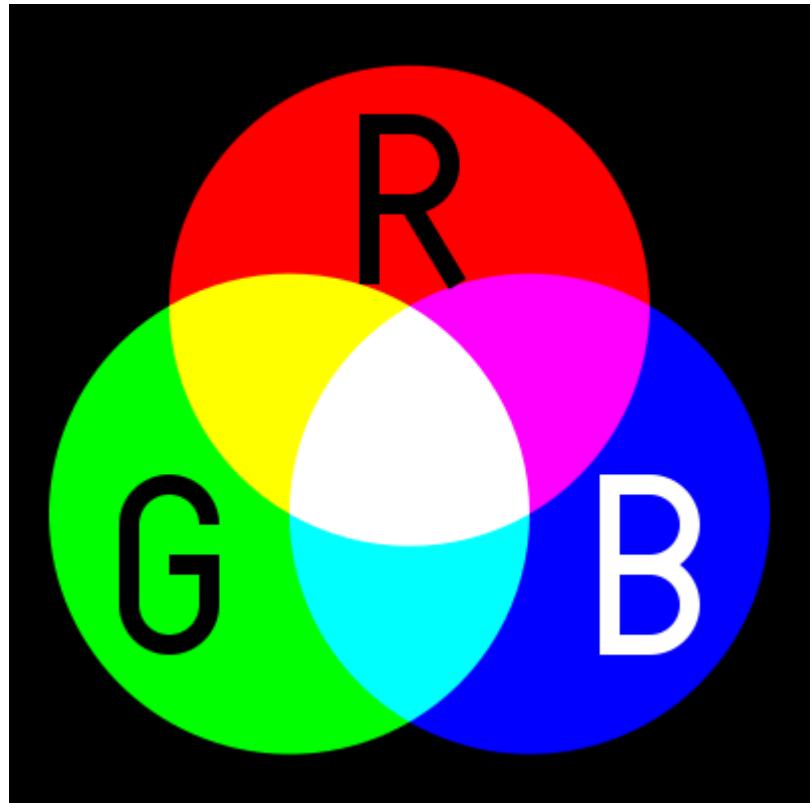
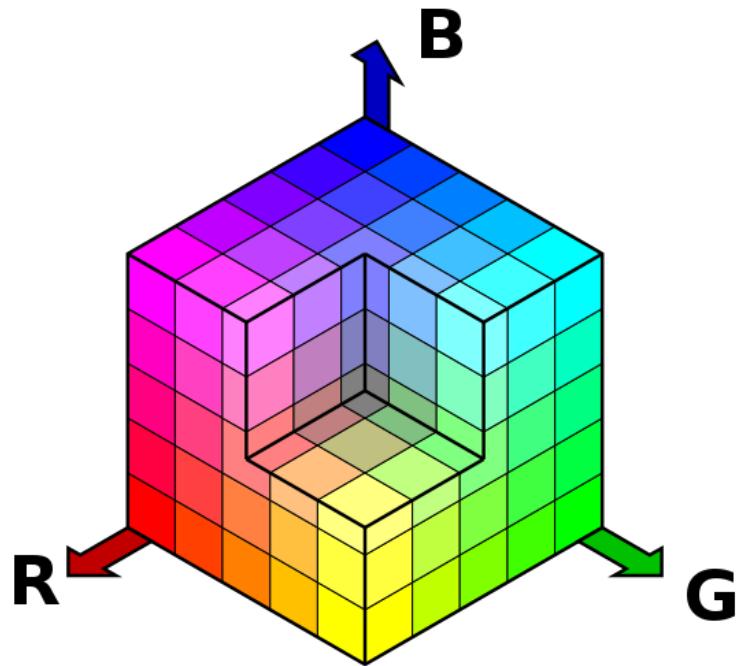


20P

$$2^{24} = 16 \text{ Mbytes}$$



Color. RGB



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Audio and video encoding

Binary number system

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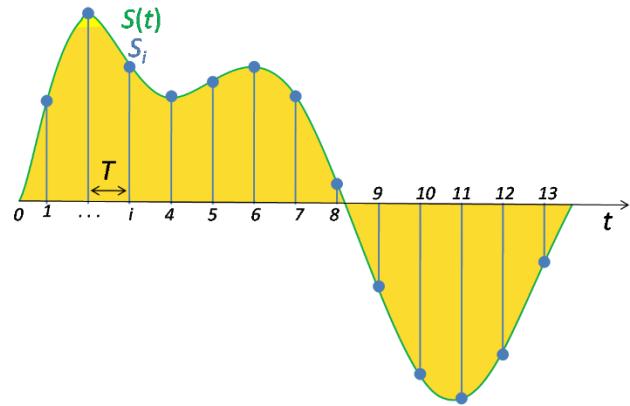


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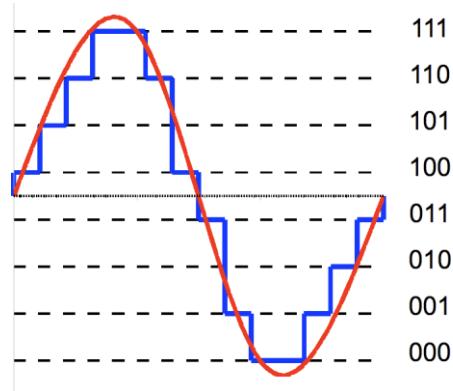
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Digital audio

Sampling



Quantization



Demo

Video

Resolution: $1920 \times 1080 = 2\ 073\ 600$

Bits per frame: 24 (R,G,B 8 bit each)

Frames per sec: 24

Bits per second: $1\ 194\ 393\ 600 \sim 1\ \text{Gbit/s}$

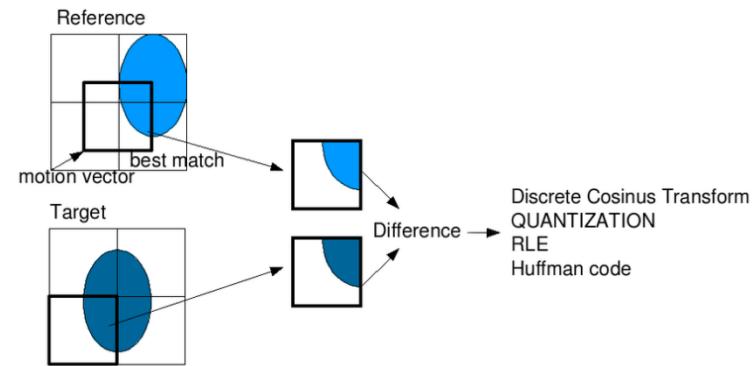
90 min movie: 5400 sec, 675 GBytes

8K Ultra HD

4K Ultra HD

Full HD

SD



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OS concept

Operating Systems

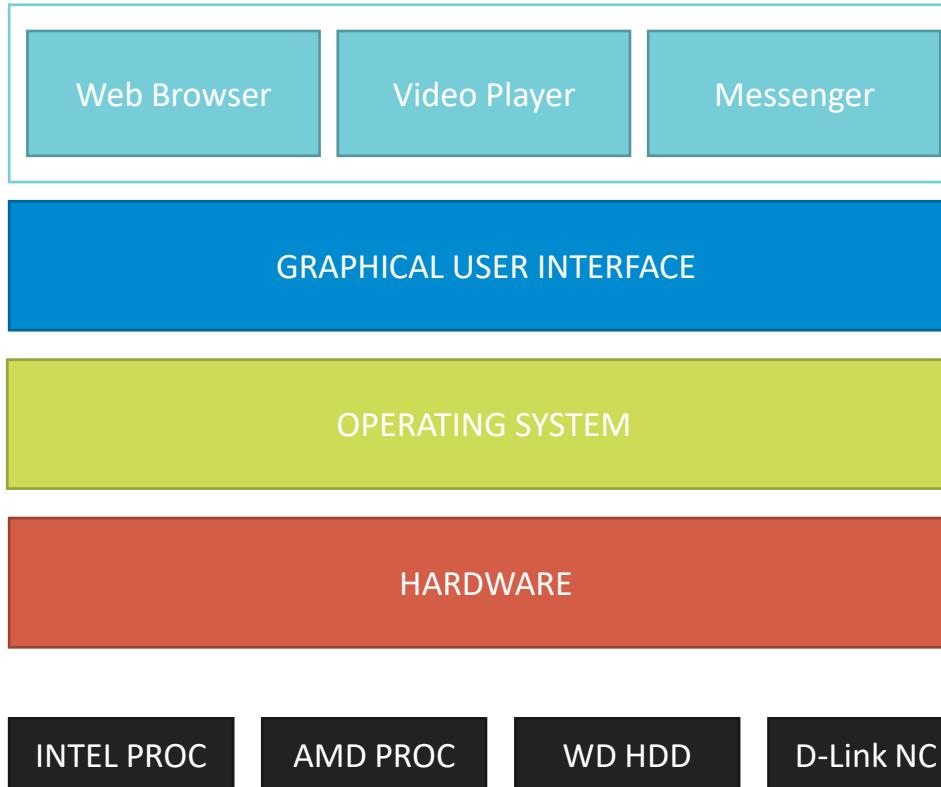
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Why need OS



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Windows Architecture

Operating Systems

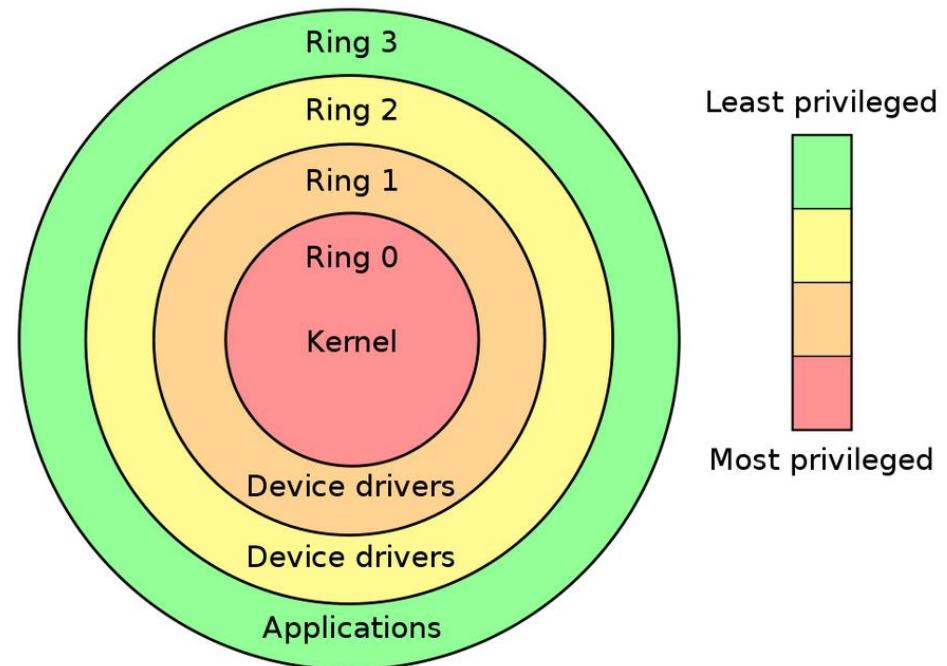
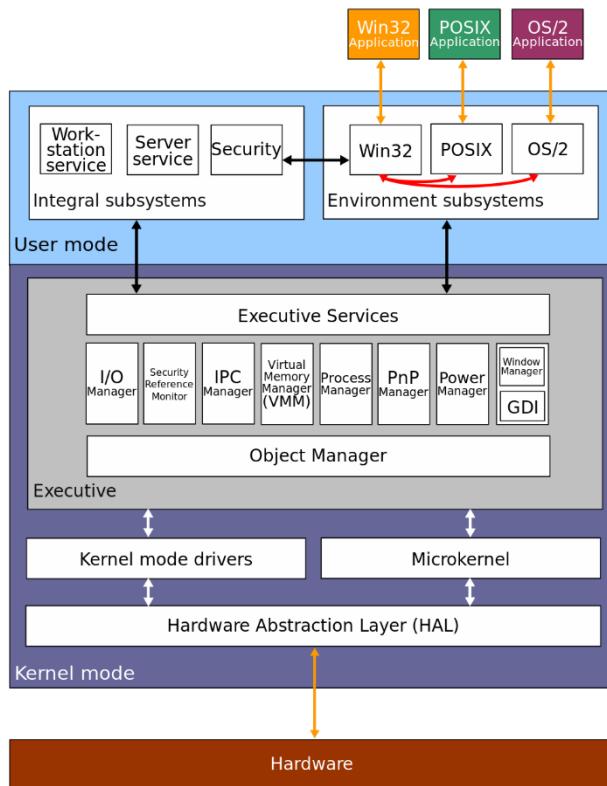
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Windows architecture



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Windows Processes

Operating Systems

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Windows Command Line

Operating Systems

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Command line tools

Base CMD commands

- CD
- /?
- DIR
- MKDIR
- SET
- HOSTNAME
- TASKLIST
- TASKKILL
- IPCONFIG
- NSLOOKUP
- SYSTEMINFO
- TELNET
- ROBOCOPY
- TRACERT
- PING
- CLS
- CHKDSK
- DISKPART
- SC

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Batch files

Operating Systems

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Batch files

Base syntax

- ECHO OFF
- echo
- >
- >>
- pause
- cls
- title
- exit
- ::

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Windows Services

Operating Systems

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Windows Tools

Operating Systems

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Linux OS

Operating Systems

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Linux shell commands

Base bash commands

- PWD
- LS
- CD
- MKDIR
- RMDIR
- UNAME
- DF
- PS
- KILL
- TOUCH
- CAT
- CP
- WGET
- IPTABLES
- CURL
- CLEAR
- HISTORY

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Live CD/USD

Operating Systems

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Data Types

Data Types and Algorithms
Computer Science Basics



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Variables and data types

- Boolean – true/false
- Integer – whole number
- Float/double – floating point
- char, string – symbol/string
- Array
- Map/Dictionary - associative array, (key, value) pair
- Queue/Stack

DataType variableName = value

int number = 5

boolean isEven = false

String name = "Nixon"

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Numbers

Data Types and Algorithms
Computer Science Basics



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Whole number

299 792 458

Int32



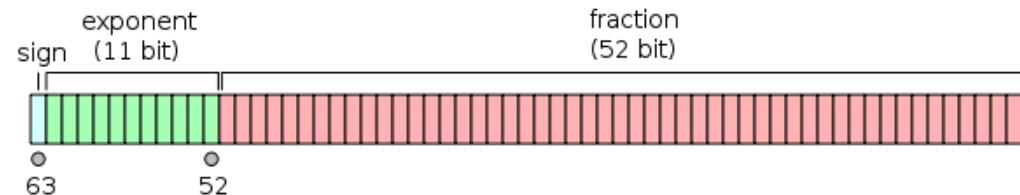
Floating point number

$$\text{Number} = m \cdot n^p$$

299 792 458

$$299\ 792\ 458 = 2.99792458 * 10^8$$

$$299\ 792\ 458 = 2.99792458e8$$



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Arrays

Data Types and Algorithms
Computer Science Basics



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Array

```
int[] array = {2, 9, 9, 7, 9, 2, 4, 5, 8}  
array[3] = 7
```

0	1	2	3	4	5	6	7	8
2	9	9	7	9	2	4	5	8

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Char, String

Data Types and Algorithms
Computer Science Basics



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Char, String

```
char firstSymbol = 'h'  
String text = "hello java"
```

0	1	2	3	4	5	6	7	8	9
h	e	l	l	o		j	a	v	a

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Map, Queue

Data Types and Algorithms
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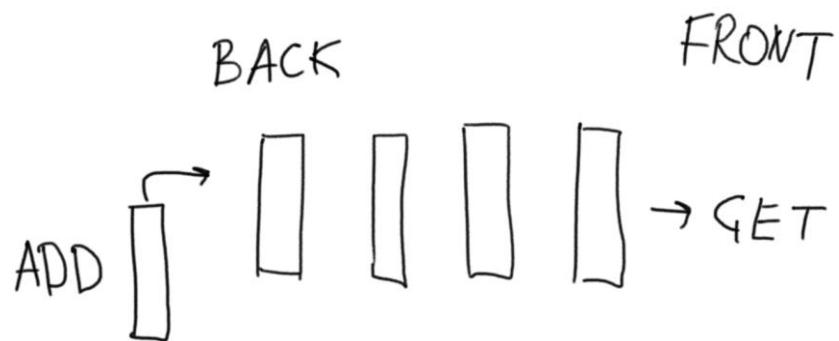
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Map/Dictionary

Map<String, Integer> countryCodes

0	Belarus	375
1	USA	1
2	China	86

Queue, Stack



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Operators

Data Types and Algorithms
Computer Science Basics



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Operators

- `-- ++`
- `+ - * / %`
- `== !=`
- `&& ||`
- `> < >= <=`

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Control Flow Statements

Data Types and Algorithms
Computer Science Basics



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Operators

- if-then-else
- switch
- while, do-while
- for
- break, continue, return

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Switch

Data Types and Algorithms
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While, For

Data Types and Algorithms
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Functions

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Functions

double getAverageValue(int[] array)

void printArrayToConsole(int[] array)

void printCurrentTimeToConsole()

double sum(double a, double b)

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Algorithms Big O notation

Data Types and Algorithms
Computer Science Basics

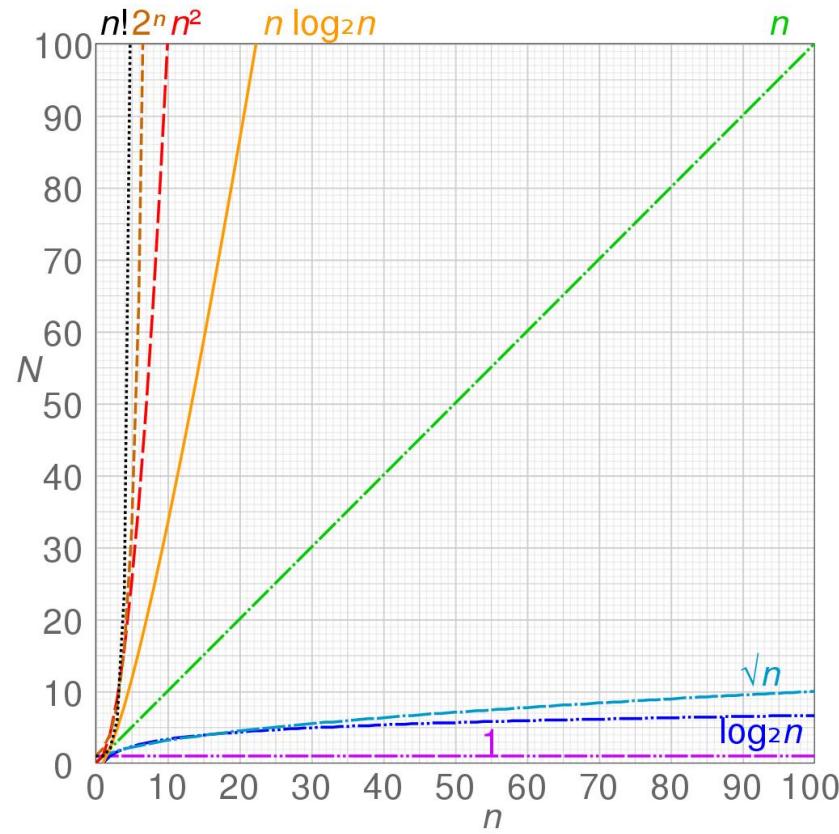


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Big O notation

- $O(1)$ - get element in an array by index
- $O(\log n)$ – Binary search
- $O(n)$ – search in array
- $O(n^2)$ – Bubble sort
- $O(n \log n)$ - Quicksort
- $O((n+1)!) - \text{Bogosort}$



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Searching in array

Data Types and Algorithms
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Searching in array

```
int[] array = {20, 91, 64, 75, 19, 26, 48, 55, 89}
```

0	1	2	3	4	5	6	7	8
20	91	64	75	19	26	48	55	89

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Binary search

Data Types and Algorithms
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Binary search

```
int[] sortedArray = {19, 20, 26, 48, 55, 64, 75, 89, 91}
```

0	1	2	3	4	5	6	7	8
19	20	26	48	55	64	75	89	91

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Bubble sort

Data Types and Algorithms
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Bubble sort

```
int[] array = {20, 91, 64, 75, 19, 26, 48, 55, 89}
```

0	1	2	3	4	5	6	7	8
20	91	64	75	19	26	48	55	89

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Networks Concept

Computer Networks

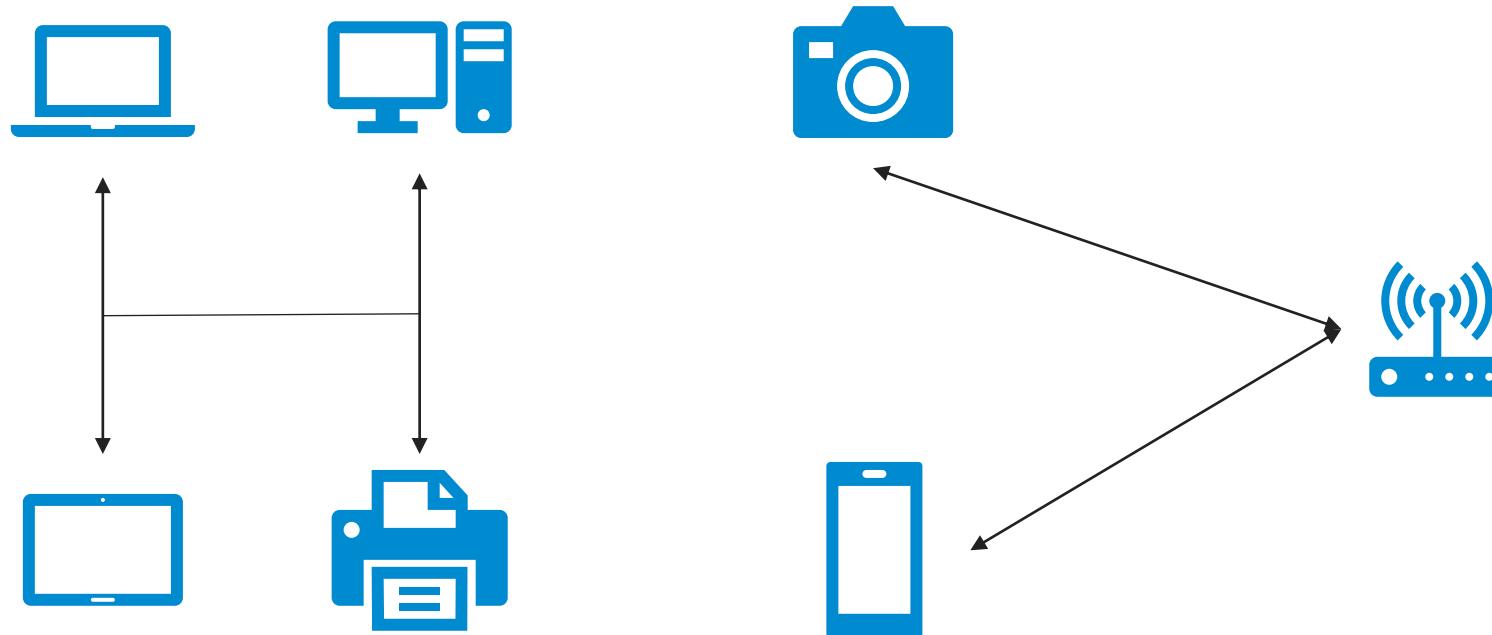
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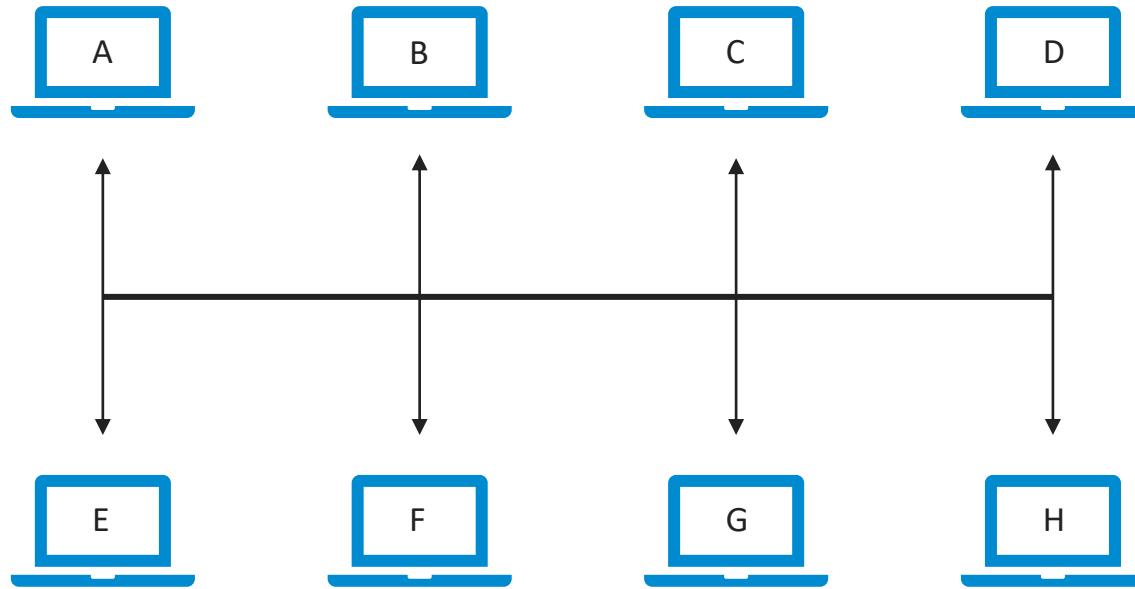
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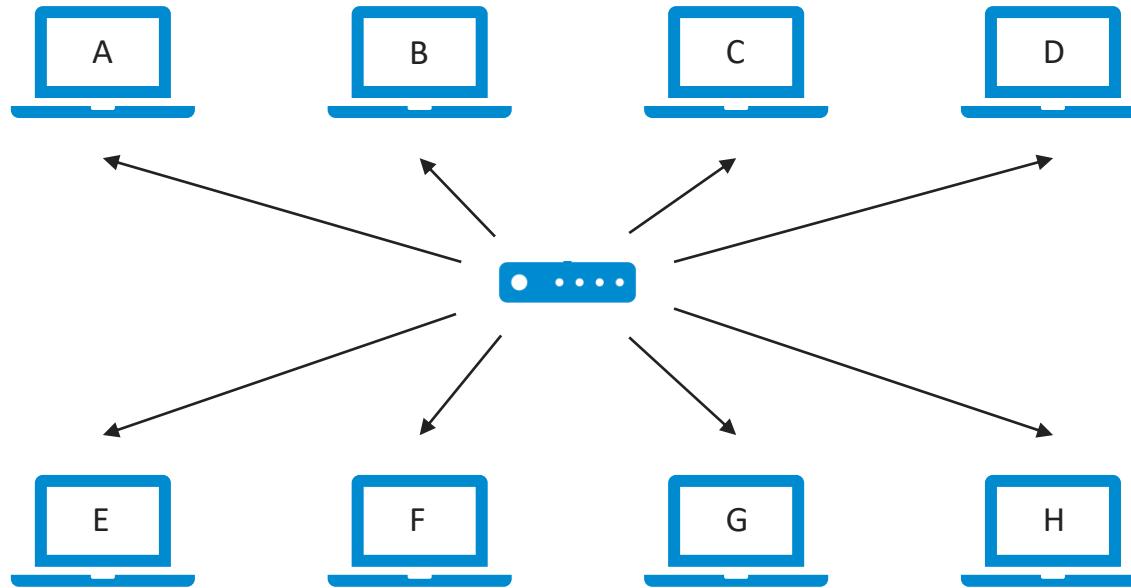
What is computer network



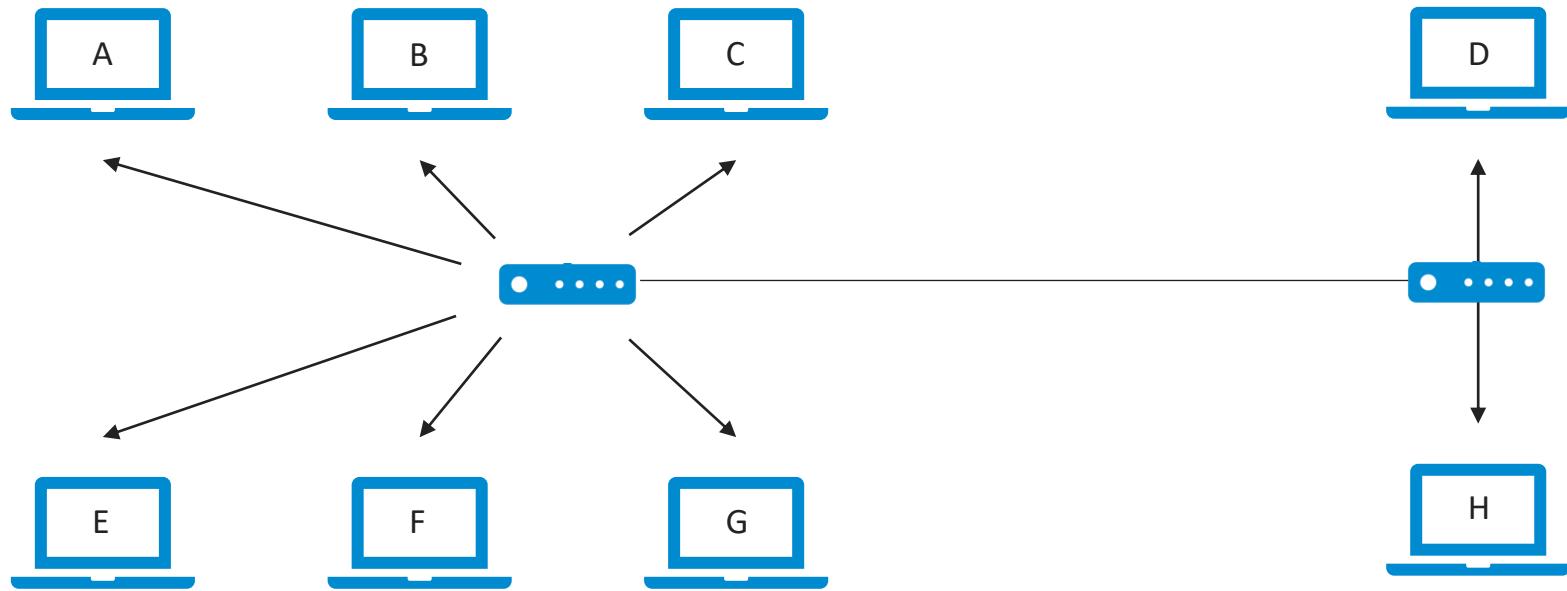
Bus



Star



Hybrid



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OSI/TCP model

Computer Networks

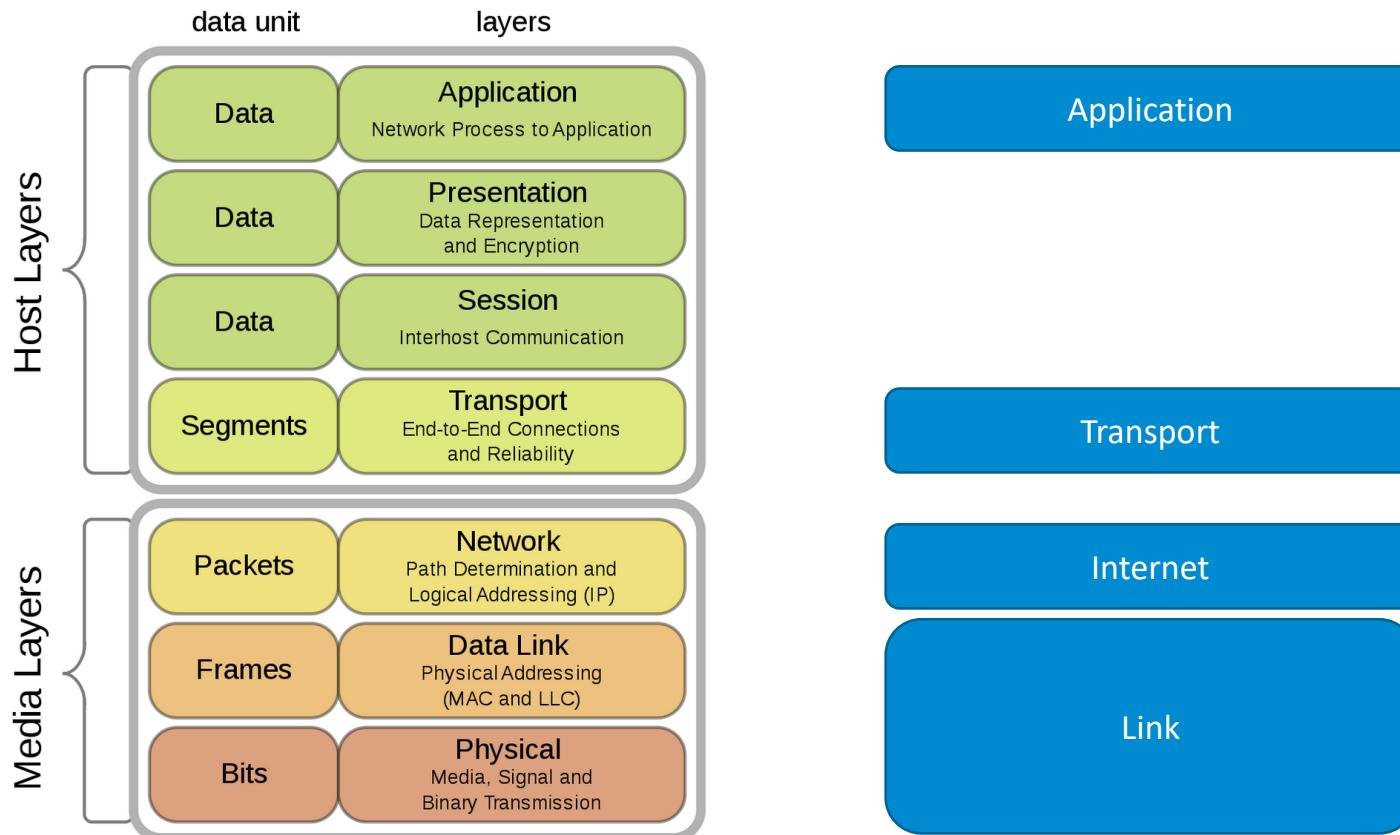
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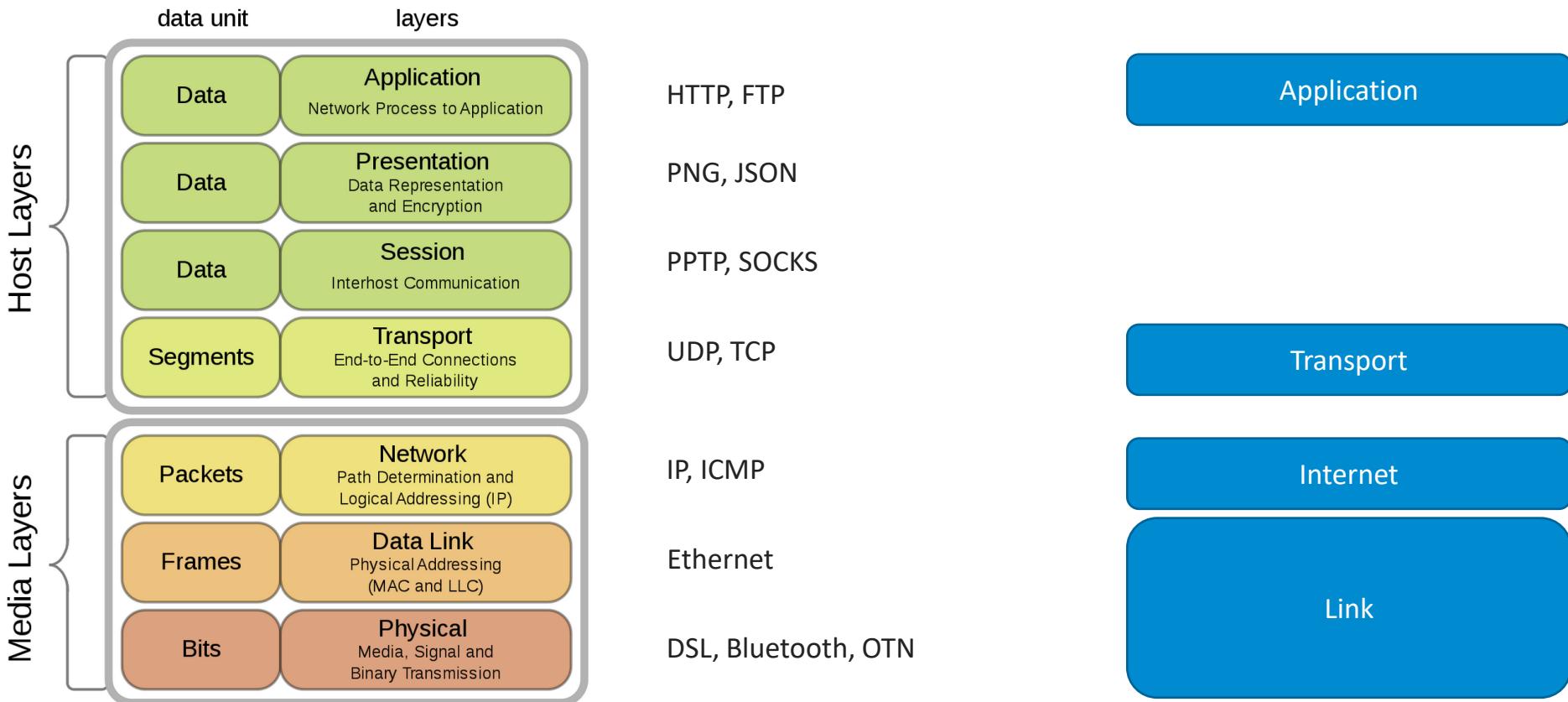
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OSI and TCP models



OSI and TCP models



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Physical Layer

Computer Networks

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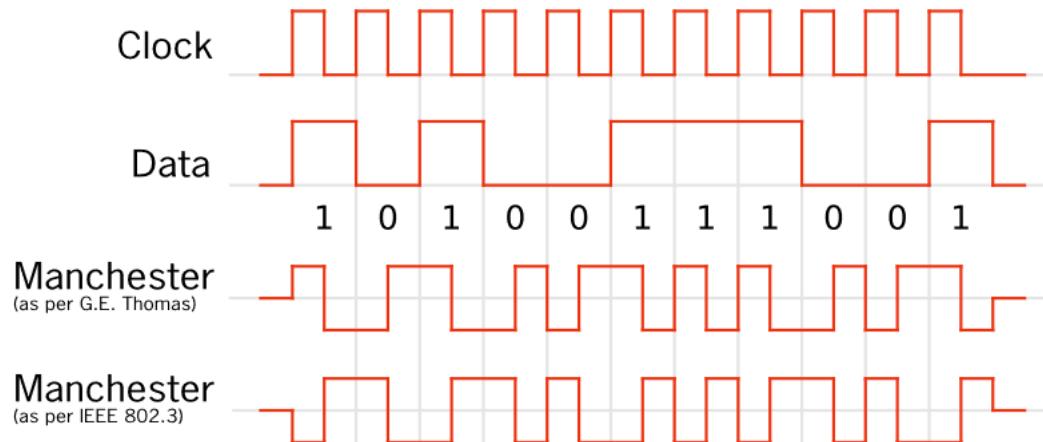
Physical layer

Wired

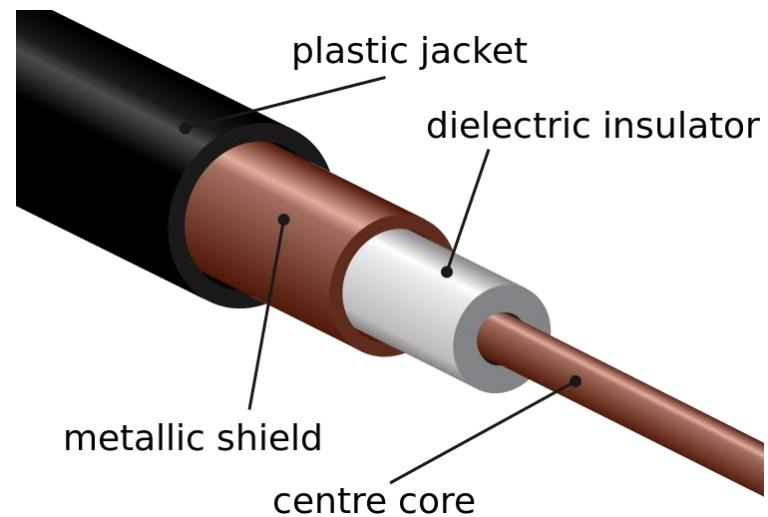
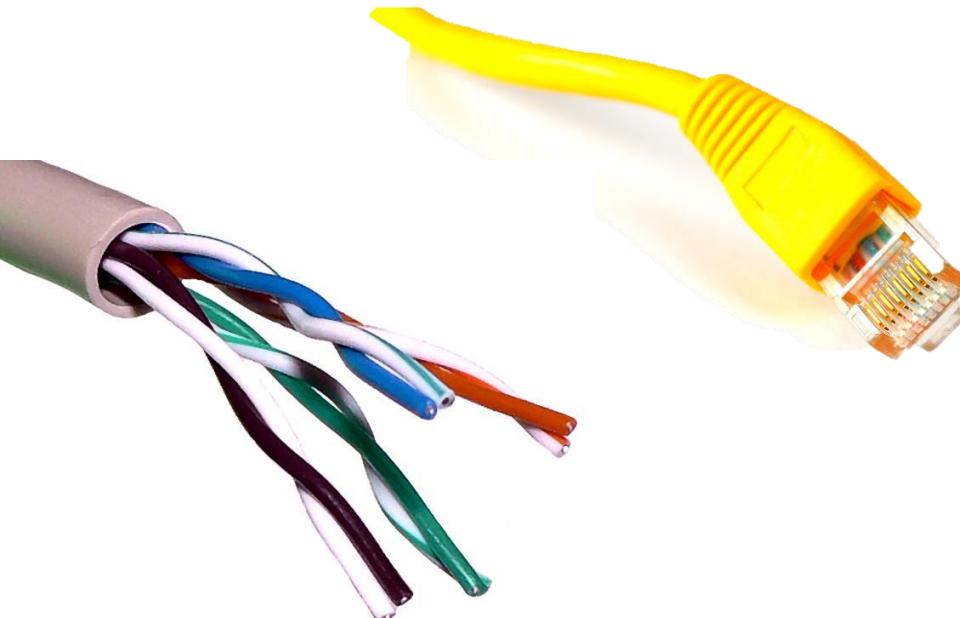
- Coaxial cable
- Twisted pair
- Optical fiber

Wireless

- Wave



Cables



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Data Link

Computer Networks

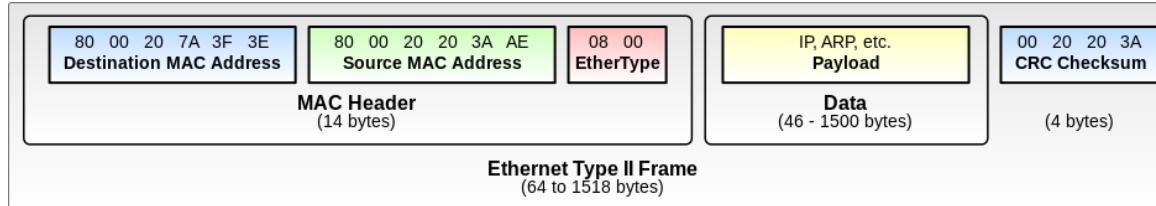
Computer Science Basics



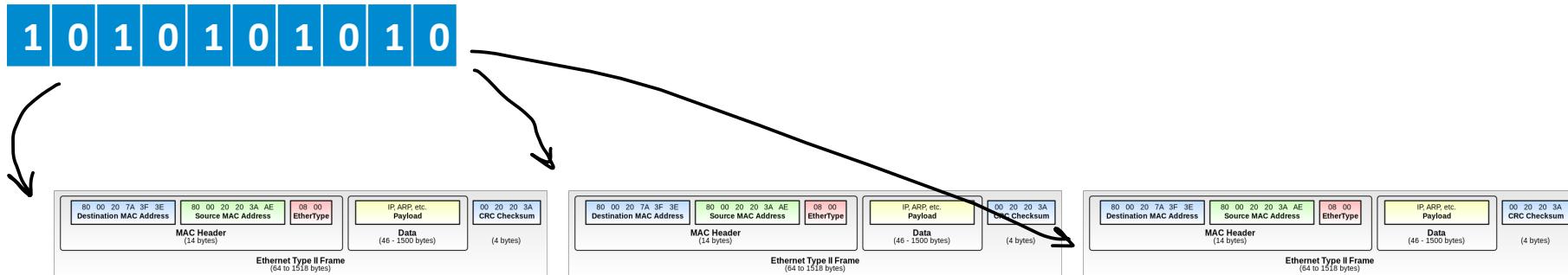
TRAINING
C E N T R E

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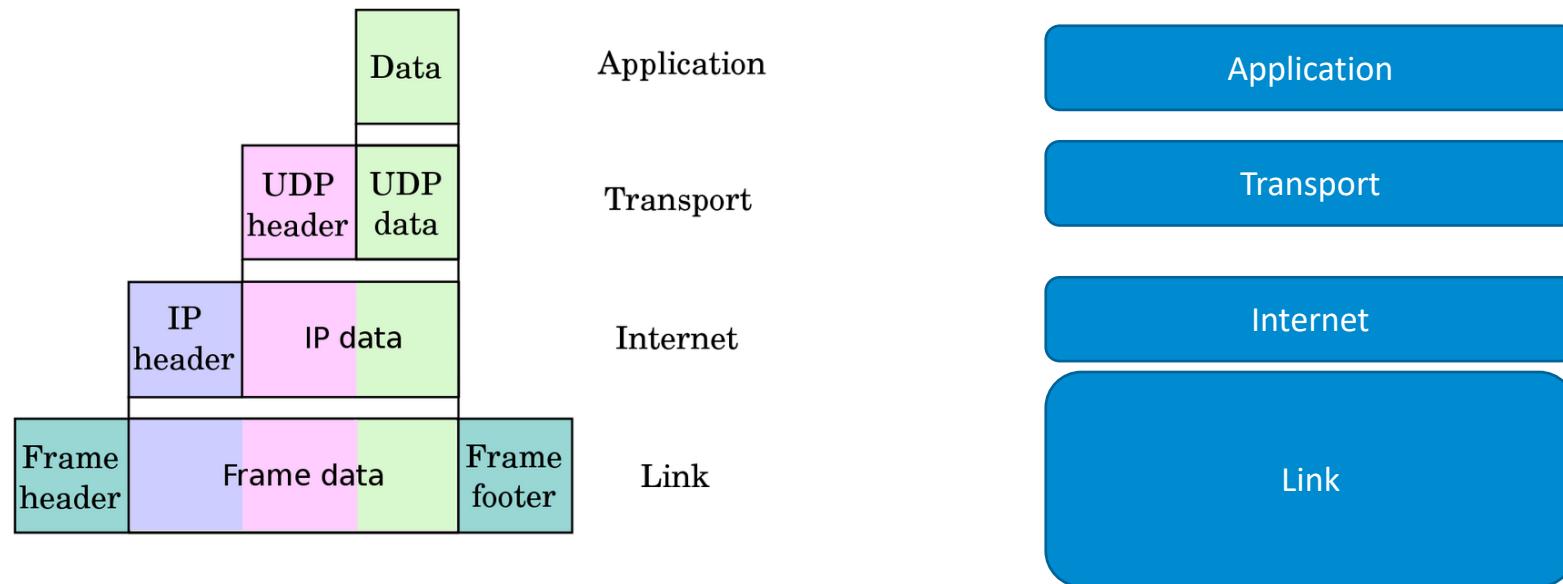
Ethernet



preamble + start frame delimiter



Encapsulation



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Wireshark

Computer Networks

Computer Science Basics



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Building the network

Computer Networks

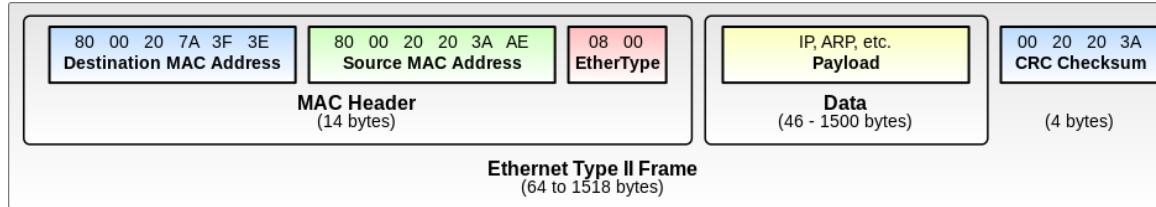
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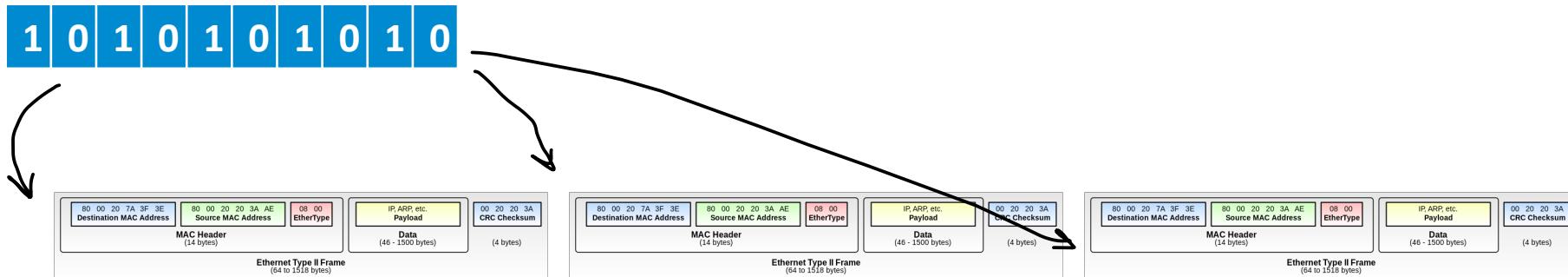
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Ethernet



preamble + start fame delimiter



Switch



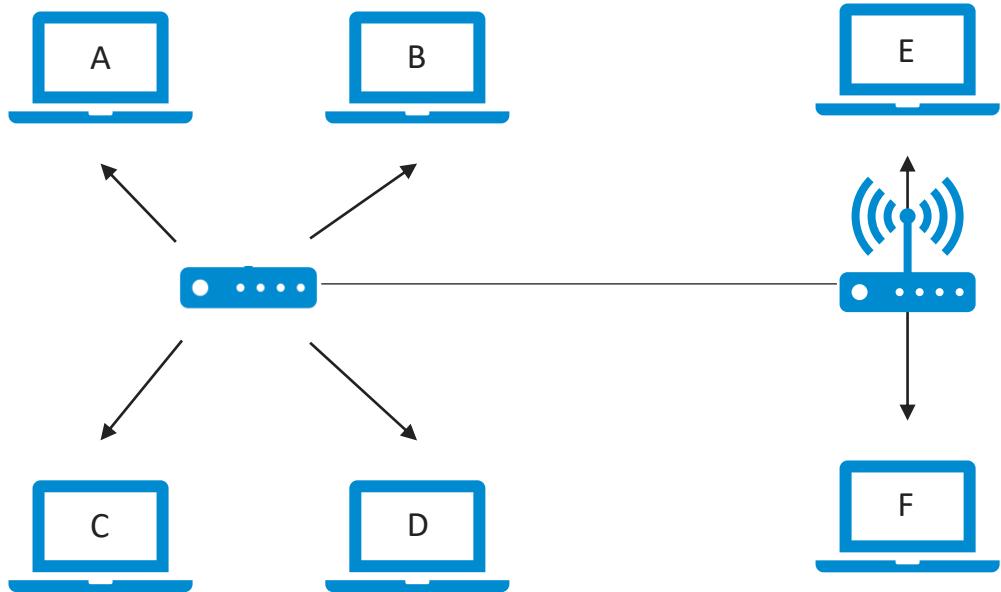
Routing. MAC.

C8-D3-FF-D1-CB-D1

C8:D3:FF Hewlett Packard

PORT	MAC
A	C8-D3-FF-D1-CB-D1
B	10:05:CA:9C:A0:42
C	...
D	...
E	...
F	...

C8-D3-FF-D1-CB-D1 10:05:CA:9C:A0:42



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Network layer

Computer Networks

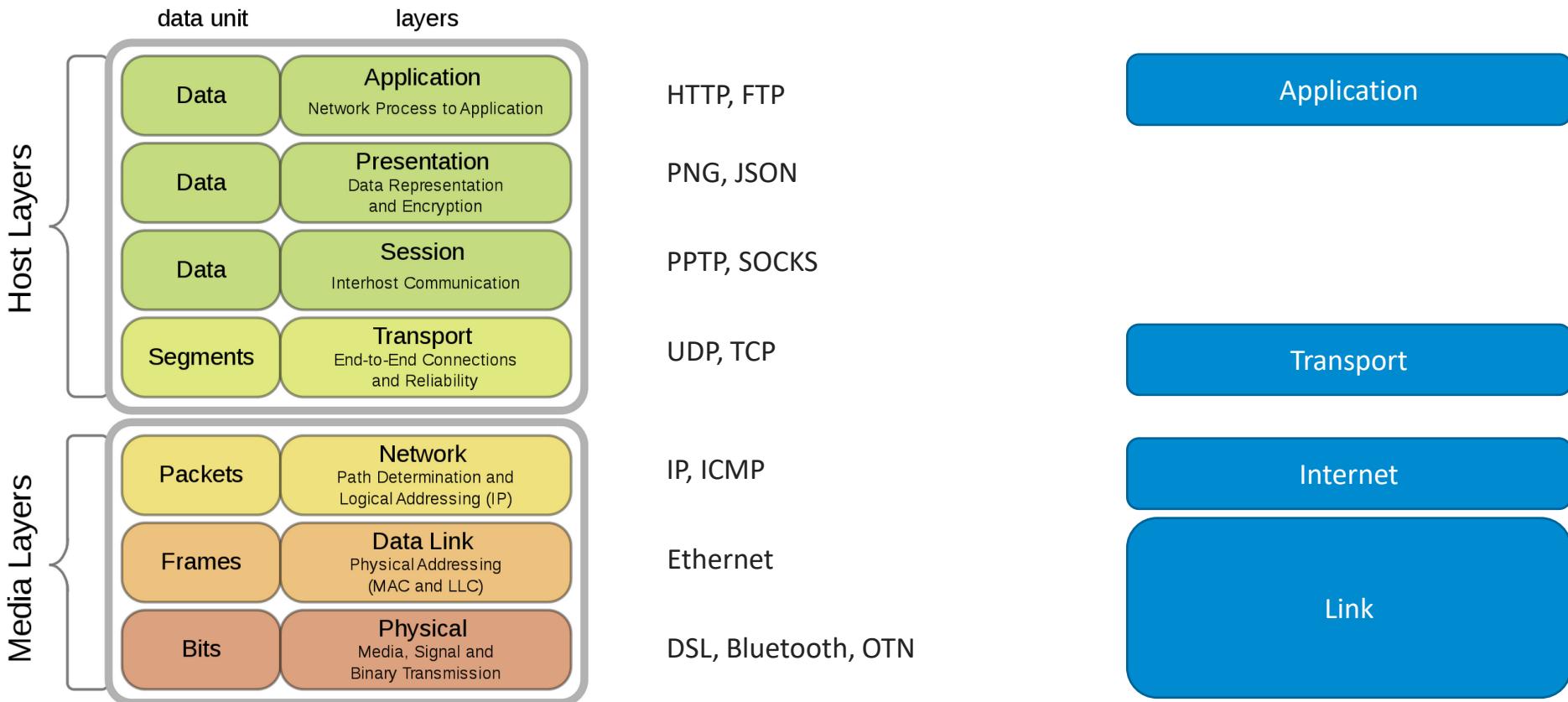
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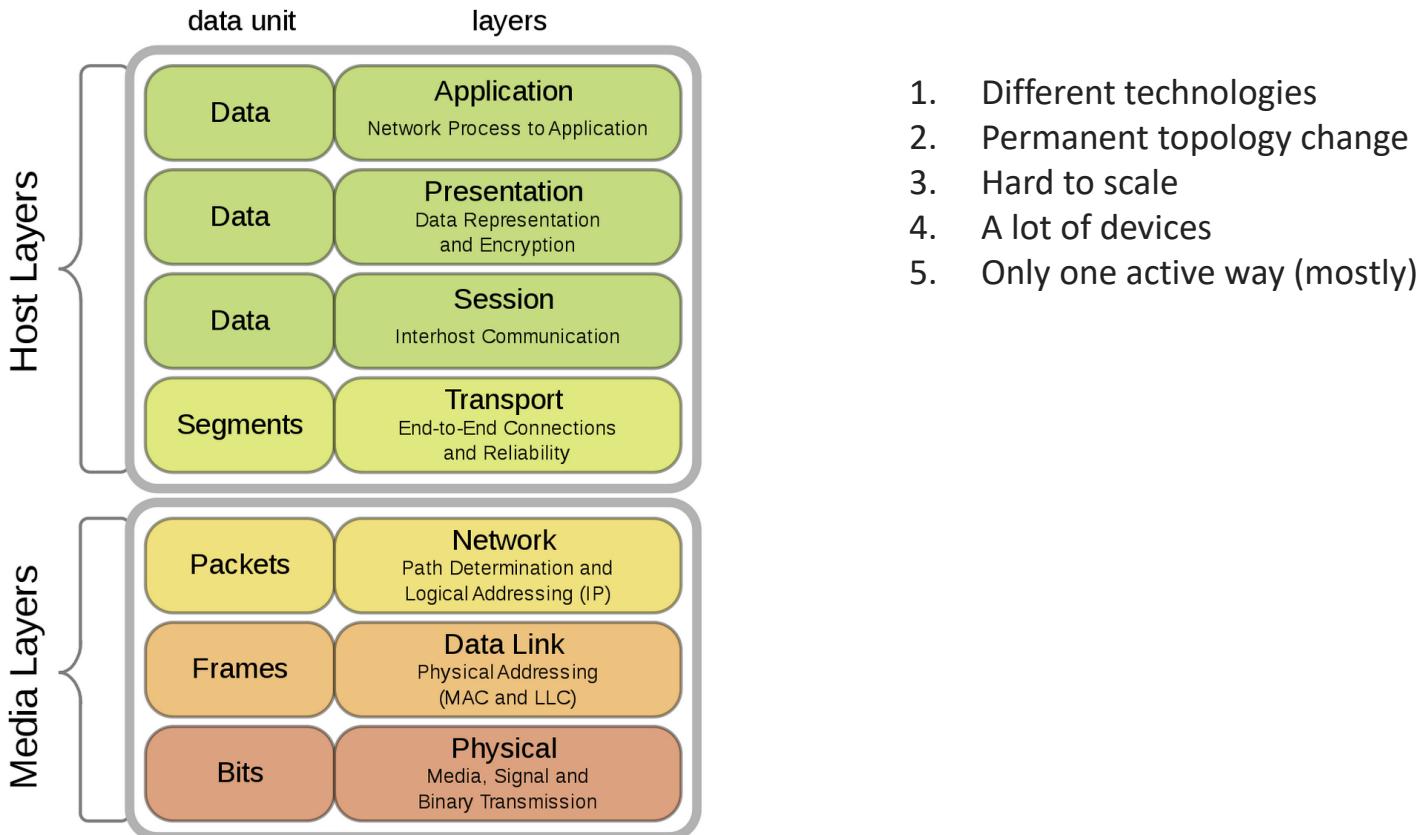
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OSI and TCP models



Why need network layer



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IP Protocol

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IP, ICMP, DHCP.

IPv4 address in dotted-decimal notation

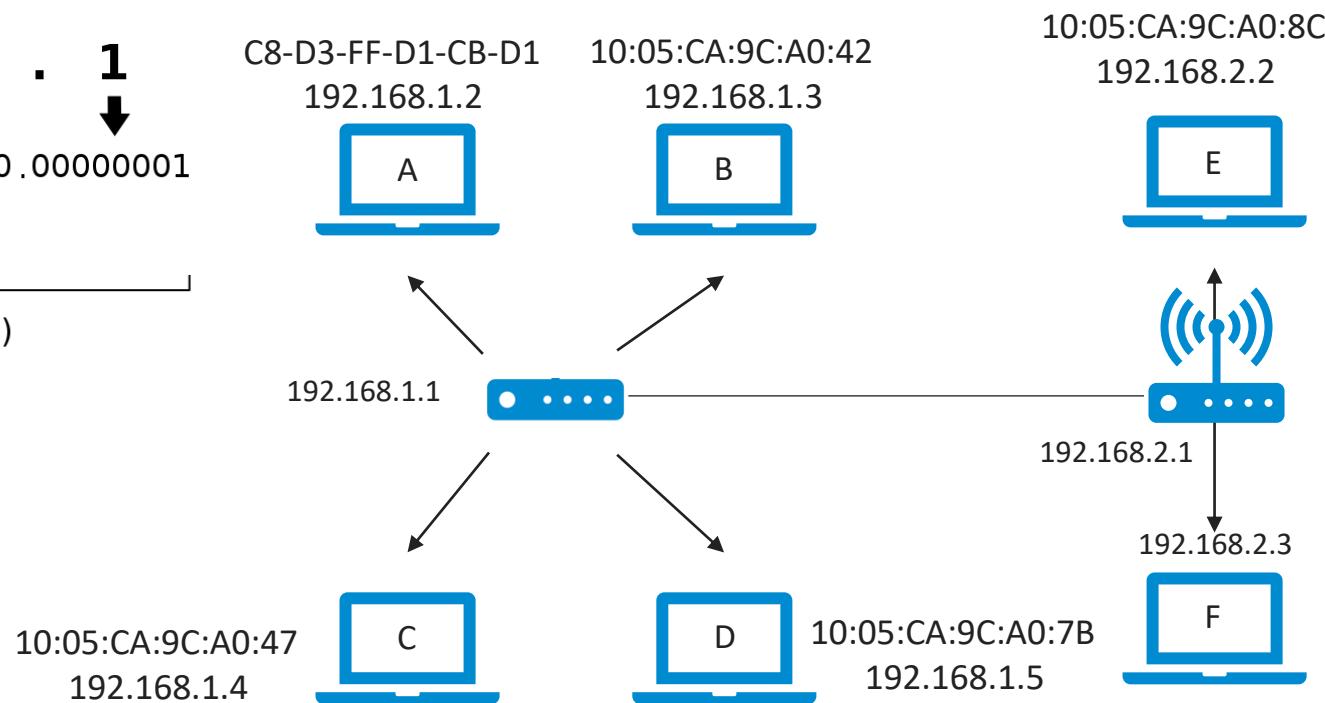
172 . 16 . 254 . 1

↓ ↓ ↓ ↓

10101100 .00010000 .11111110 .00000001

8 bits

32 bits (4 bytes)



IP. ICMP. DHCP.

IPv4 address in dotted-decimal notation

172 . 16 . 254 . 1
↓ ↓ ↓ ↓

10101100.00010000.11111110.00000001

8 bits

32 bits (4 bytes)

IPv4 Header Format

Offsets	Octet	0								1								2								3																														
Octet	Bit	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31																							
0	0	Version		IHL		DSCP				ECN				Total Length																																										
4	32	Identification																Flags		Fragment Offset																																				
8	64	Time To Live				Protocol				Header Checksum																																														
12	96	Source IP Address																Destination IP Address																																						
16	128																																																							
20	160																																																							
24	192																																																							
28	224																																																							
32	256																																																							

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Routing in Wireshark

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UDP/TCP

Computer Networks

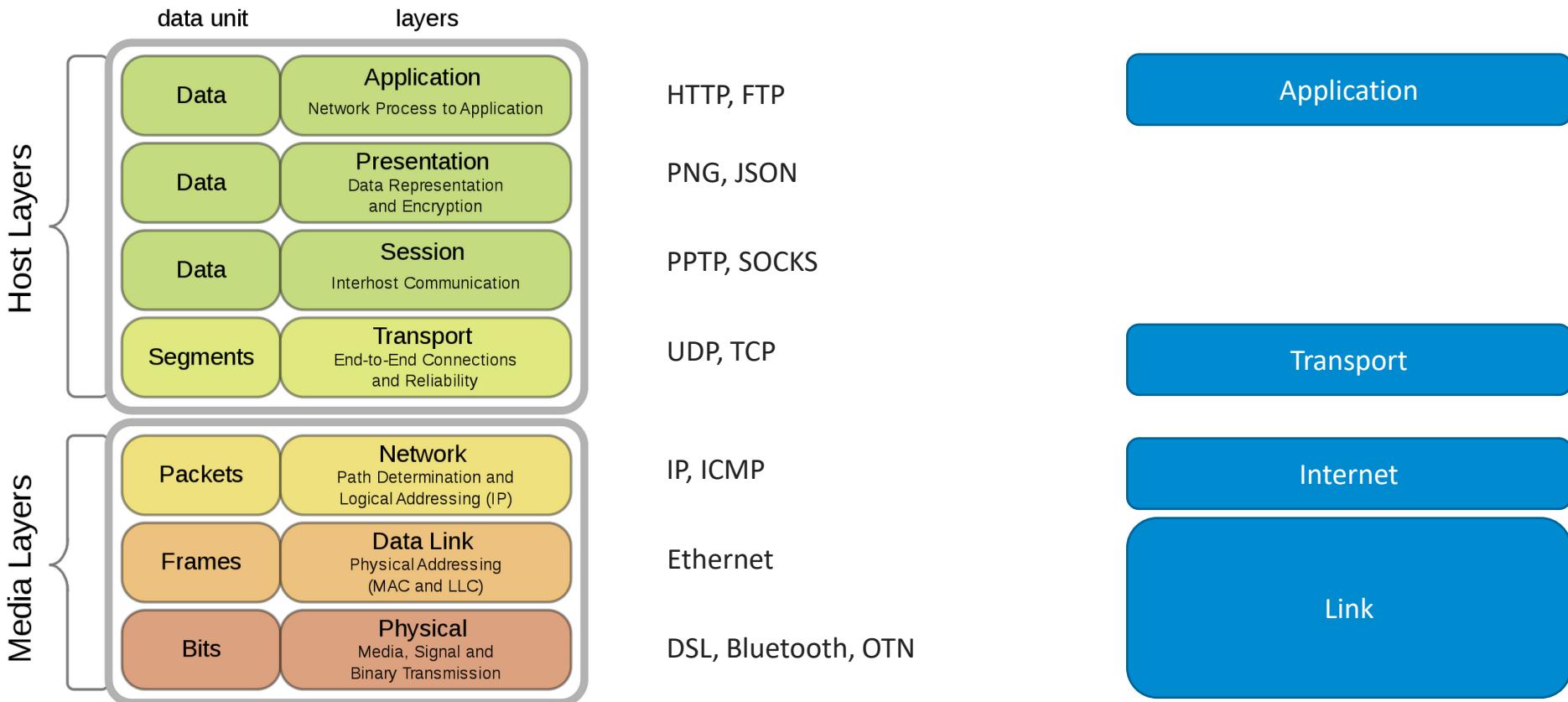
Computer Science Basics



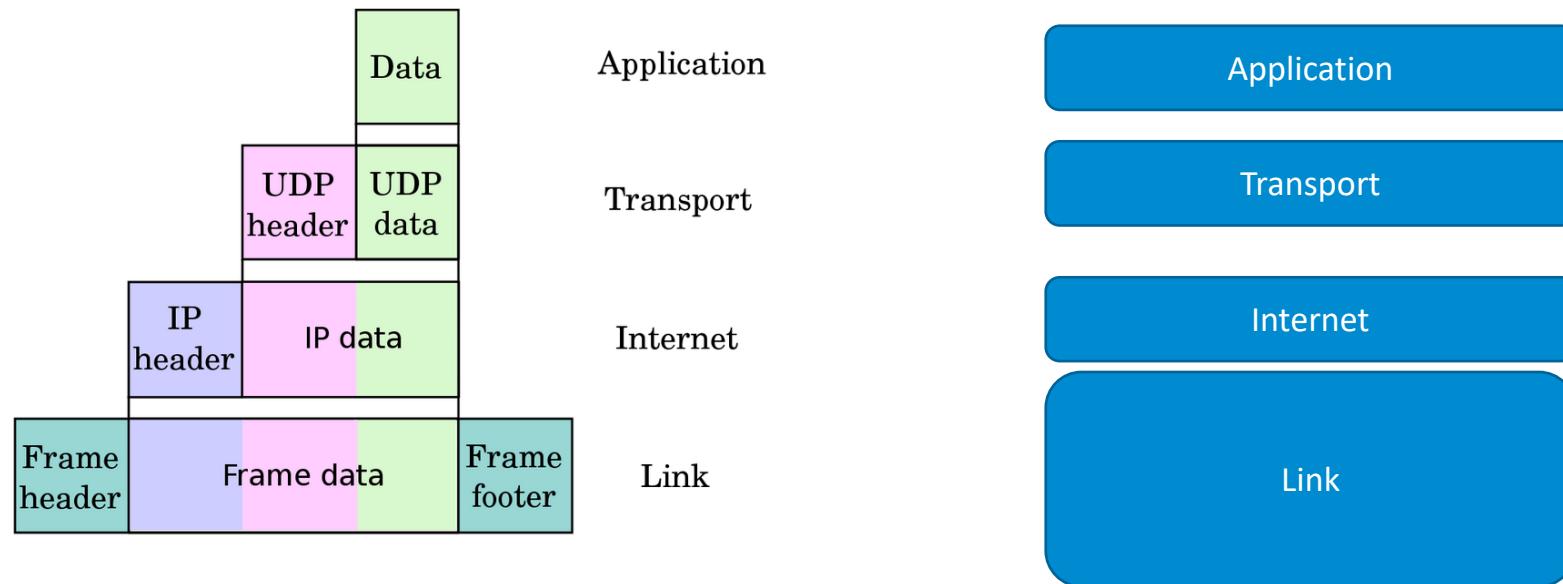
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OSI and TCP models



Encapsulation



TCP header. Port

		TCP segment header																		2						3																														
Offsets	Octet	0								1								2						3																																
Octet	Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0																							
0	0	Source port												Destination port																																										
4	32	Sequence number																																																						
8	64	Acknowledgment number (if ACK set)																																																						
12	96	Data offset	Reserved 0 0 0	N S	C W	E C	U R	R G	A C	P S	R S	S T	F Y	I N	Window Size																																									
16	128	Checksum												Urgent pointer (if URG set)																																										
20	160	Options (if <i>data offset</i> > 5. Padded at the end with "0" bytes if necessary.)																																																						
...																																																						

TCP/UDP in Wireshark

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DNS

Computer Networks

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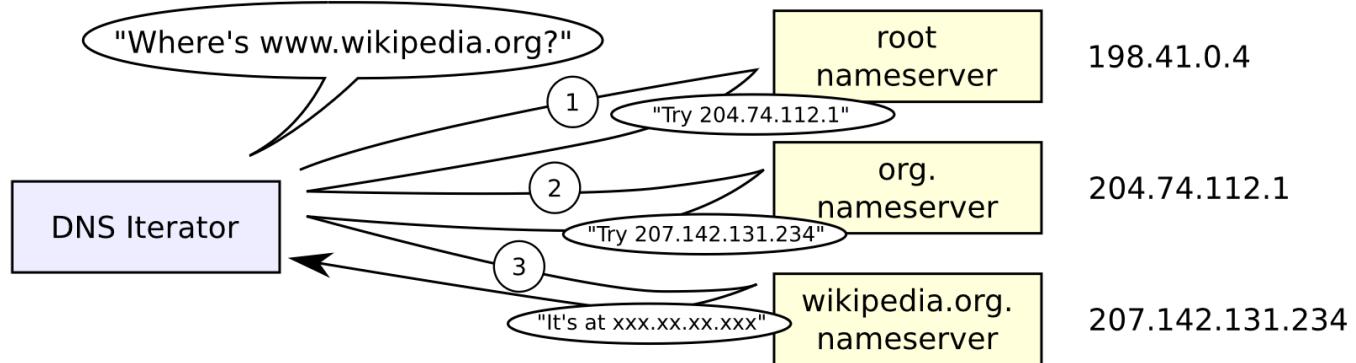


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DNS

- nslookup
- Open DNS servers
- 8.8.8.8
- 8.8.4.4



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HTTP

Computer Networks

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Wireshark, Fiddler and developer tools

- F12
- Fiddler

The screenshot shows a browser window displaying the EPAM website (epam.com). The page features a large banner with the word "Engineering". Below the banner, there is a navigation bar with links to "WHAT WE DO", "HOW WE DO IT", "OUR WORK", "INSIGHTS", "ABOUT", and "CAREERS". A "CONTACT US" button and a "Global (EN)" dropdown are also present. The main content area contains several lines of code related to a cookie disclaimer.

The browser's developer tools are open, specifically the Network tab. The timeline shows various network requests and responses. The list of requests on the left includes files such as "www.epam.com", "blh1wfq.js", "epam-core-modules.min.js", "epam-core-external.min.js", "jquery.min.js", "epam-components.min.js", "utils.min.js", "epam-com-components.min.js", "granite.min.js", "jquery.min.js", "shared.min.js", "main.min.js", "contexthub.kernel.js", "logo-print.png", "api.js", and "logo_white-blue.svg". The right panel displays the raw HTML code for one of the requests, which is a cookie disclaimer snippet.

At the bottom of the developer tools interface, it says "85 requests | 50.1 KB transferred | 7.2 MB resources | Finish: 2.3s".

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Productivity tools

Productivity Tools

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Productivity tools

1 HOTKEYS

2 SEARCH ENGINES & QUERIES

3 PASSWORD MANAGERS

4 FILES MANAGERS

5 ENCRYPTION

6 VIRTUAL MACHINES & CLOUD

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Hotkeys

Productivity Tools

Computer Science Basics



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Hotkeys

- Windows
- Browser
- IDE
- File Manager
- Office apps



Remember these Shortcuts

Smart code completion	Ctrl + Shift + Space
Search everywhere	Double Shift
Show intention actions and quick-fixes	Alt + Enter
Generate code	Alt + Ins
Parameter info	Ctrl + P
Extend selection	Ctrl + W
Shrink selection	Ctrl + Shift + W
Recent files popup	Ctrl + E
Rename	Shift + F6

General

Open corresponding tool window	Alt + #([0-9])
Save all	Ctrl + S
Synchronize	Ctrl + Alt + Y
Toggle maximizing editor	Ctrl + Shift + F12
Inspect current file with current profile	Alt + Shift + I
Quick switch current scheme	Ctrl + BackQuote (`)
Open Settings dialog	Ctrl + Alt + S
Open Project Structure dialog	Ctrl + Alt + Shift + S
Find Action	Ctrl + Shift + A

Debugging

Step over / into	F8 / F7
Smart step into / Step out	Shift + F7 / Shift + F8
Run to cursor	Alt + F9
Evaluate expression	Alt + F8
Resume program	F9
Toggle breakpoint	Ctrl + F8
View breakpoints	Ctrl + Shift + F8

Search / Replace

Search everywhere	Double Shift
Find	Ctrl + F
Find next / previous	F3 / Shift + F3
Replace	Ctrl + R
Find in path	Ctrl + Shift + F
Replace in path	Ctrl + Shift + R
Select next occurrence	Alt + J
Select all occurrences	Ctrl + Alt + Shift + J
Unselect occurrence	Alt + Shift + J

—Productivity Boosters

Editing

Basic code completion	Ctrl + Space
Smart code completion	Ctrl + Shift + Space
Complete statement	Ctrl + Shift + Enter
Parameter info (within method call arguments)	Ctrl + P
Quick documentation lookup	Ctrl + Q
External Doc	Shift + F1
Brief Info	Ctrl + mouse
Show descriptions of error at caret	Ctrl + F1
Generate code...	Alt + Insert
Override methods	Ctrl + O
Implement methods	Ctrl + I
Surroundwith...	Ctrl + Alt + T
Comment / uncomment with line comment	Ctrl + /
Comment / uncomment with block comment	Ctrl + Shift + /
Extend selection	Ctrl + W
Shrink selection	Ctrl + Shift + W
Context info	Alt + Q
Show intention actions and quick-fixes	Alt + Enter
Reformat code	Ctrl + Alt + L
Optimize Imports	Ctrl + Alt + O
Auto-indent line(s)	Ctrl + Alt + I
Indent / unindent selected lines	Tab / Shift + Tab
Cut current line to clipboard	Ctrl+X, Shift+Delete
Copy current line to clipboard	Ctrl+C, Ctrl+Insert
Paste from clipboard	Ctrl+V, Shift+Insert
Paste from recent buffers...	Ctrl+Shift + V
Duplicate current line	Ctrl+D
Delete line at caret	Ctrl+Y
Smart line join	Ctrl+Shift + J
Smart line split	Ctrl+Enter
Start new line	Shift + Enter
Toggle case for word at caret or selected block	Ctrl + Shift + U
Select till code block end / start	Ctrl + Shift + J / [
Delete to word end	Ctrl + Delete
Delete to word start	Ctrl + Backspace
Expand / collapse code block	Ctrl + NumPad+ / -
Expand all	Ctrl+Shift+NumPad+
Collapse all	Ctrl+Shift+NumPad-
Close active editor tab	Ctrl + F4

Refactoring

Copy	F5
Move	F6
Safe Delete	Alt + Delete
Rename	Shift + F6
Refactor this	Ctrl + Alt + Shift + T
Change Signature	Ctrl + F6
Inline	Ctrl + Alt + N
Extract Method	Ctrl + Alt + M
Extract Variable	Ctrl + Alt + V
Extract Field	Ctrl + Alt + F
Extract Constant	Ctrl + Alt + C
Extract Parameter	Ctrl + Alt + P

Navigation

Go to class	Ctrl + N
Go to file	Ctrl + Shift + N
Go to symbol	Ctrl + Alt + Shift + N
Go to next / previous editor tab	Alt + Right/Left
Go back to previous tool window	F12
Go to editor (from tool window)	Esc
Hide active or last active window	Shift + Esc
Go to line	Ctrl+G
Recent files popup	Ctrl+E
Navigate back / forward	Ctrl+Alt+Left/Right
Navigate to last edit location	Ctrl+Shift+Backspace
Select current file or symbol in any view	Alt + F1
Go to declaration	Ctrl + B, Ctrl + Click
Go to implementation(s)	Ctrl + Alt + B
Open quick definition lookup	Ctrl + Shift + I
Go to type declaration	Ctrl + Shift + B
Go to super-method / super-class	Ctrl + U
Go to previous / next method	Alt + Up/Down
Move to code block end / start	Ctrl + Y/T
File structure popup	Ctrl + F12
Type hierarchy	Ctrl + H
Method hierarchy	Ctrl + Shift + H
Call hierarchy	Ctrl + Alt + H
Next / previous highlighted error	F2 / Shift + F2
Edit source / View source	F4 / Ctrl + Enter
Show navigation bar	Alt + Home
Toggle bookmark	F11
Toggle bookmark with mnemonic	Ctrl + F11
Go to numbered bookmark	Ctrl + #([0-9])
Show bookmarks	Shift + F11

Compile and Run

Make project	Ctrl + F9
Compile selected file, package or module	Ctrl + Shift + F9
Select configuration and run / debug	Alt + Shift + F10/F9
Run / Debug	Shift + F10 / F9
Run context configuration from editor	Ctrl + Shift + F10

Usage Search

Find usages / Find usages in file	Alt + F7 / Ctrl + F7
Highlight usages in file	Ctrl + Shift + F7
Show usages	Ctrl + Alt + F7

VCS / Local History

Commit project to VCS	Ctrl + K
Update project from VCS	Ctrl + T
Push commits	Ctrl + Shift + K
'VCS' quick popup	Alt + BackQuote (`)

Live Templates

Surround with Live Template	Ctrl + Alt + J
Insert Live Template	Ctrl + J

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File managers

Productivity Tools

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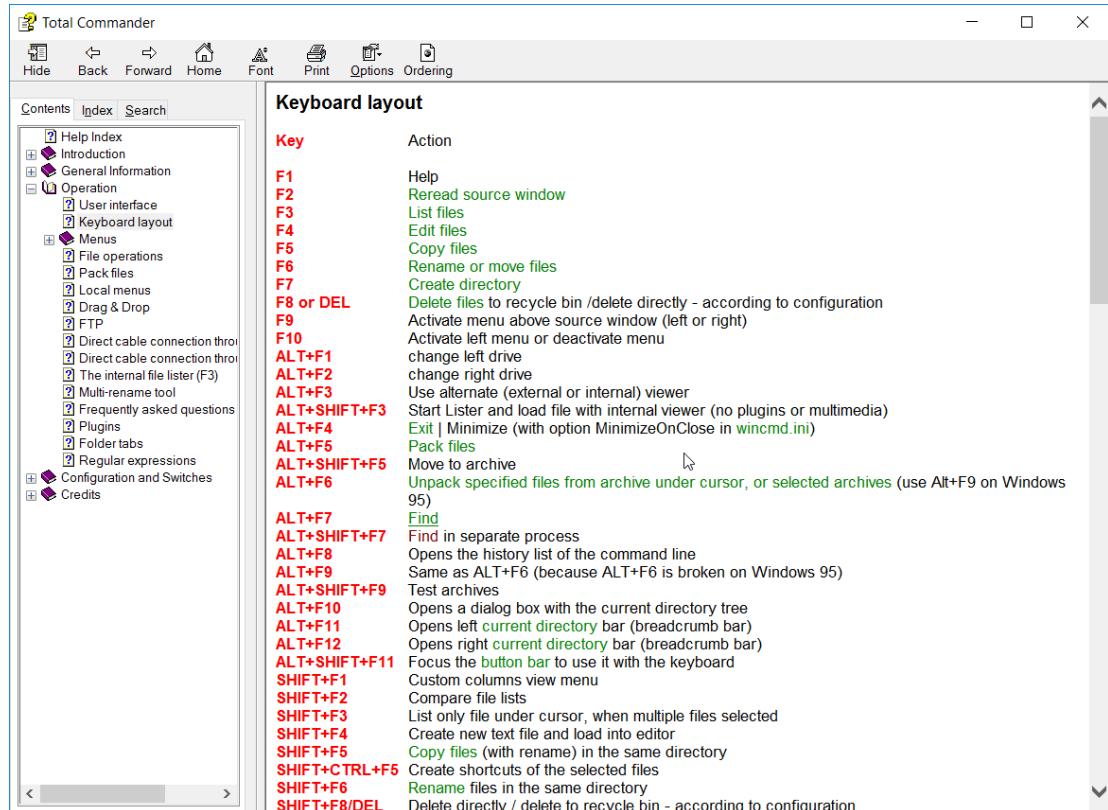


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Two-panel file manager

- Select drive ALT+F2
- Move/copy F5/F6
- Rename SHIFT+F6
- Create file/folder F7
- Search file ALT+F7
- Batch rename CTRL+M
- Start cmd CTRL+DOWN
- Compare by content
- Quick search



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Information search

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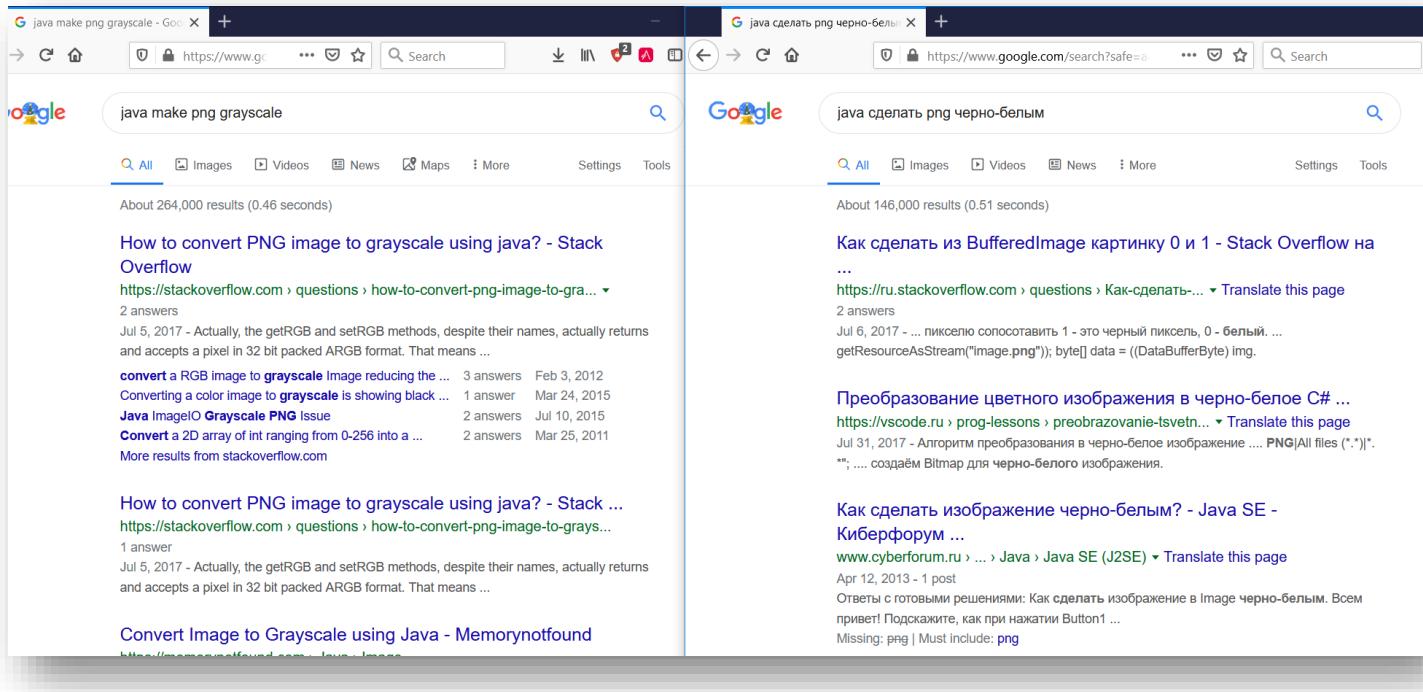


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Googling

- Use English
- Use operators
 - site
 - define
 - filetype
- Image search



Man pages and javadocs

C:\Windows\system32\cmd.exe

```
C:\Users\user>ping /?

Usage: ping [-t] [-a] [-n count] [-l size] [-f] [-i TTL] [-v TOS]
           [-r count] [-s count] [[-j host-list] | [-k host-list]]
           [-w timeout] [-R] [-S srcaddr] [-c compartment] [-p]
           [-A] [-6] target_name

Options:
  -t      Ping the specified host until stopped.
          To see statistics and continue - type Control-Break;
          To stop - type Control-C.
  -a      Resolve addresses to hostnames.
  -n count
          Number of echo requests to send.
  -l size
          Send buffer size.
  -f      Set Don't Fragment flag in packet (IPv4-only).
  -i TTL
          Time Of Service (IPv4-only). This setting has been deprecated
          and has no effect on the type of service field in the IP
          Header.
  -v TOS
          Record route for count hops (IPv4-only).
  -s count
          Timestamp for count hops (IPv4-only).
  -j host-list
          Loose source route along host-list (IPv4-only).
  -k host-list
          Strict source route along host-list (IPv4-only).
  -w timeout
          Timeout in milliseconds to wait for each reply.
  -R
          Use routing header to test reverse route also (IPv6-only).
          Per RFC 5095 the use of this routing header has been
          deprecated. Some systems may drop echo requests if
          this header is used.
  -S srcaddr
          Source address to use.
```

Math [Java SE 12 & JDK 12]

OVERVIEW MODULE PACKAGE CLASS USE TREE DEPRECATED INDEX HELP

SUMMARY NESTED FIELD CONSTR METHOD DETAIL: FIELD CONSTR METHOD

round

```
public static long round(double s)
```

Returns the closest Long to the argument, with ties rounding to positive infinity.

Special cases:

- If the argument is NaN, the result is 0
- If the argument is negative infinity or any value less than or equal to the value of Long.MIN_VALUE, the result is equal to the value of Long.MIN_VALUE.
- If the argument is positive infinity or any value greater than or equal to the value of Long.MAX_VALUE, the result is equal to the value of Long.MAX_VALUE.

Parameters:

s - a floating-point value to be rounded to a long.

Returns:

the value of the argument rounded to the nearest long value.

See Also:

Long.MAX_VALUE, Long.MIN_VALUE

random

```
public static double random()
```

Returns a double value with a positive sign, greater than or equal to 0.0 and less than 1.0. Returned values are chosen pseudorandomly with (approximately) uniform distribution from that range.

When this method is first called, it creates a single new pseudorandom-number generator, exactly as if by the expression

```
new java.util.Random()
```

This new pseudorandom-number generator is used thereafter for all calls to this method and is used nowhere else.

This method is properly synchronized to allow correct use by more than one thread. However, if many threads need to generate pseudorandom numbers at a great rate, it may reduce contention for each thread to have its own pseudorandom-number generator.

API Note:

As the largest double value less than 1.0 is Math.nextDown(1.0), a value x in the closed range [x1,x2] where x1<=x2 may be defined by the statements

```
double f = Math.random() / Math.nextDown(1.0);
double x = x1 * (1.0 - f) + x2 * f;
```

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Passwords and registrations

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KeePass and temporary mail servers

MainDB.kdbx - KeePass

File Group Entry Find View Tools Help

MainDB

- Network
- Internet
- Homebanking
- Cards
- Work
 - EPAM Cloud
 - IPLN-TST
 - TAF
 - Outlook
 - Test Users
 - EPM-FARM
 - Certificates
 - EPM-RDBY
 - Recycle Bin
 - EC2
 - Coin
 - Exchanges
 - Exmo Bots
 - yoga_pad
 - Mobile
 - BSTU
 - Google Play
 - Hosting
 - K15
 - Deprecated

0 of 17 selected Ready.

Add Entry

Create a new entry.

Entry Advanced Properties Auto-Type History

Title: new-registration Icon:

User name: vitali_shulha

Password:

Repeat:

Quality: 117 bits 20 ch.

URL:

Notes:

Expires: 07/01/2020 00:00:00

OK Cancel

10 Minute Mail - Free Anonymo X

Why would you use this? Maybe you want to sign up for a site which requires that you provide an e-mail address to send a validation e-mail to. And maybe you don't want to give up your real e-mail address and end up on a bunch of spam lists. This is nice and disposable. And it's free! Enjoy!

The accounts are completely secure, you are the only one with access to your emails. The emails and address itself expire in 10 minutes.

This site can help you avoid spam and losing your privacy! Enjoy!!

Welcome to 10 Minute Mail! This is your temporary e-mail address:

d10762436@urhen.com 07:24

YOU HAVE 1 MESSAGE(S).

vitaliuss@gmail.com

Just another useless annoying registration in web

Jan 7, 2020 8:24:53 AM

Get ready receiving tons of "important" updates from us!

--
Best Regards,
Vitali Shulha

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Encrypted containers

Productivity Tools

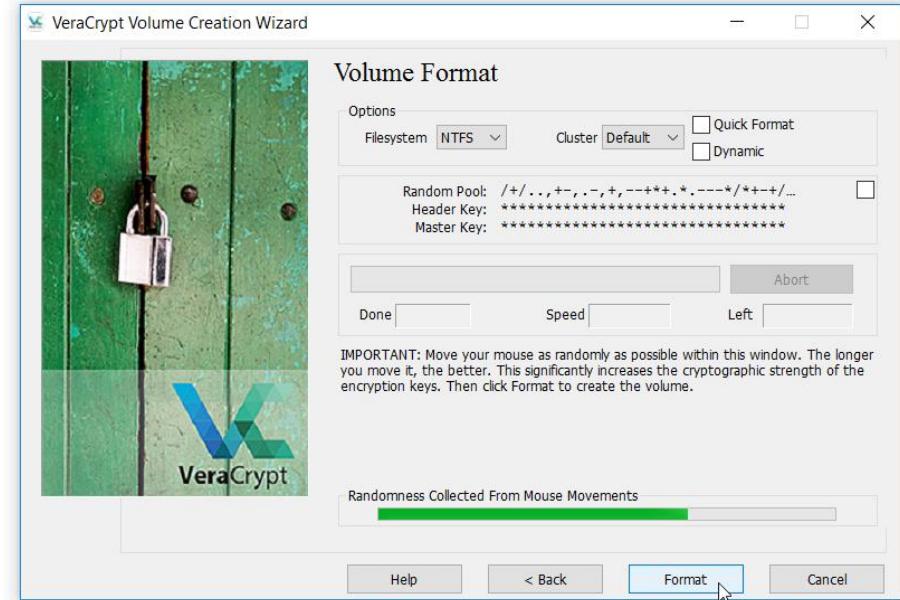
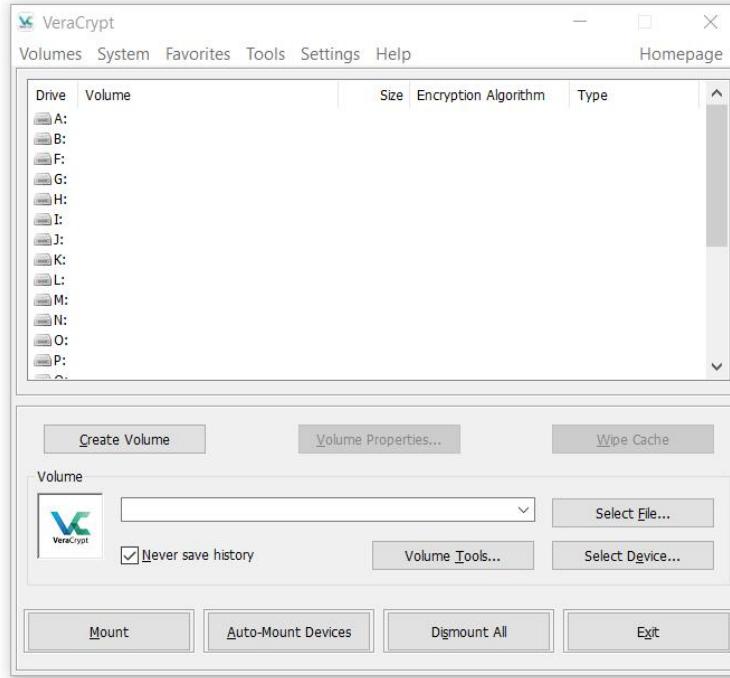
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VeraCrypt



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Virtual machines

Productivity Tools

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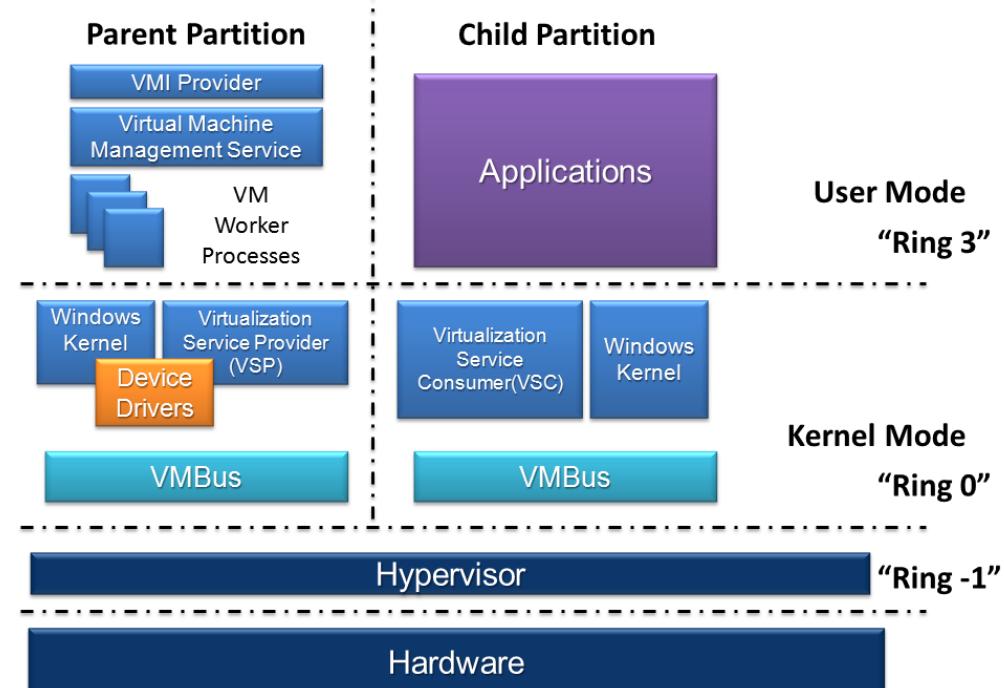
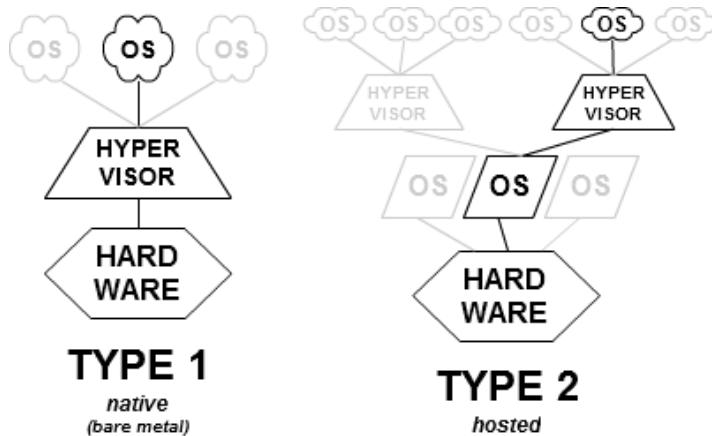


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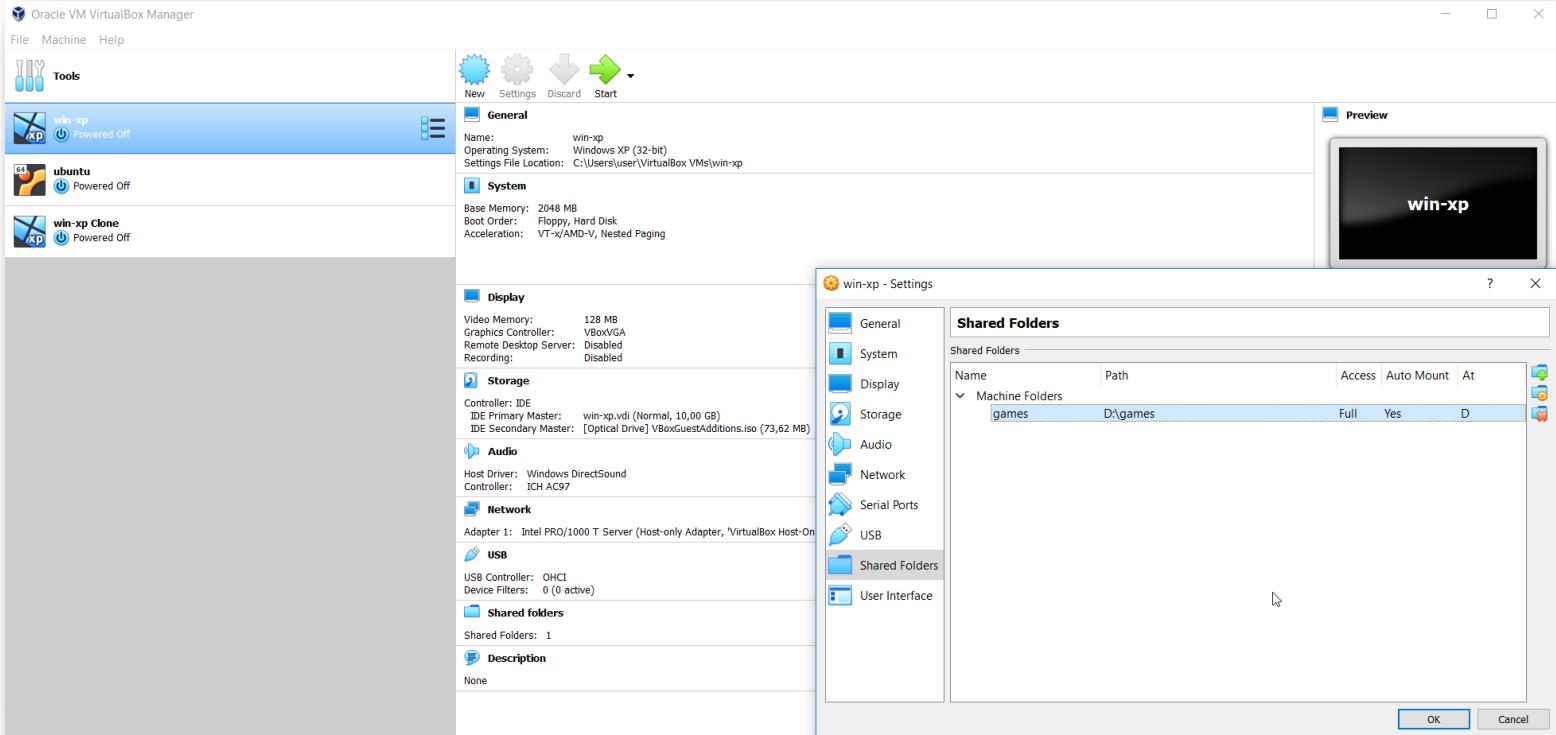
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Hypervisor

- Running multiple operating systems simultaneously
- Easier software installations
- Testing and disaster recovery
- Portability
- Clean architecture



VirtualBox



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Cloud

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Cloud. Google, Amazon, Azure, EPAM

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Excel

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Google Docs

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Google Docs as a part of G Suite
