

Digital Humanities

Lecture 6

March 27

2026

Mario Verdicchio

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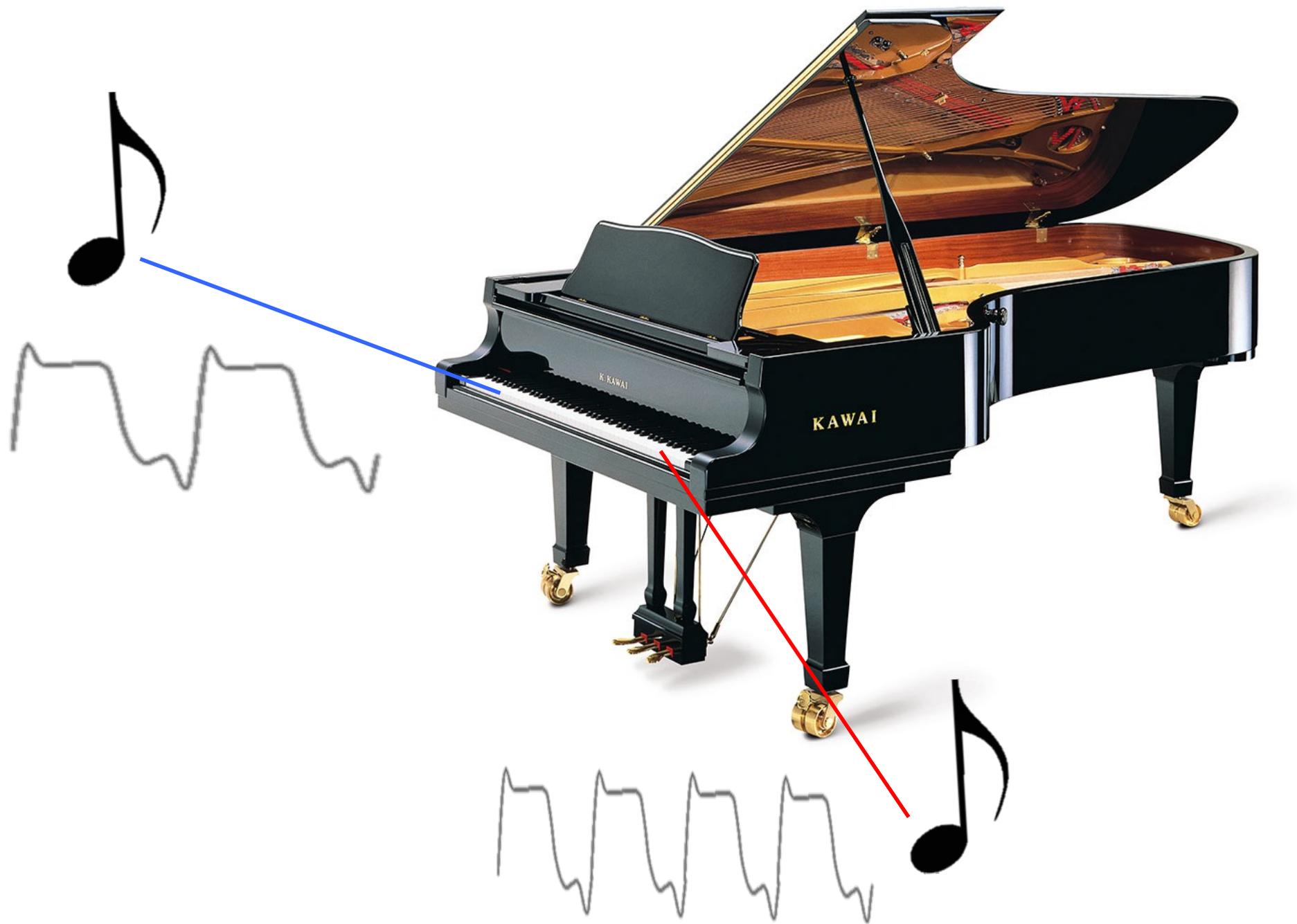


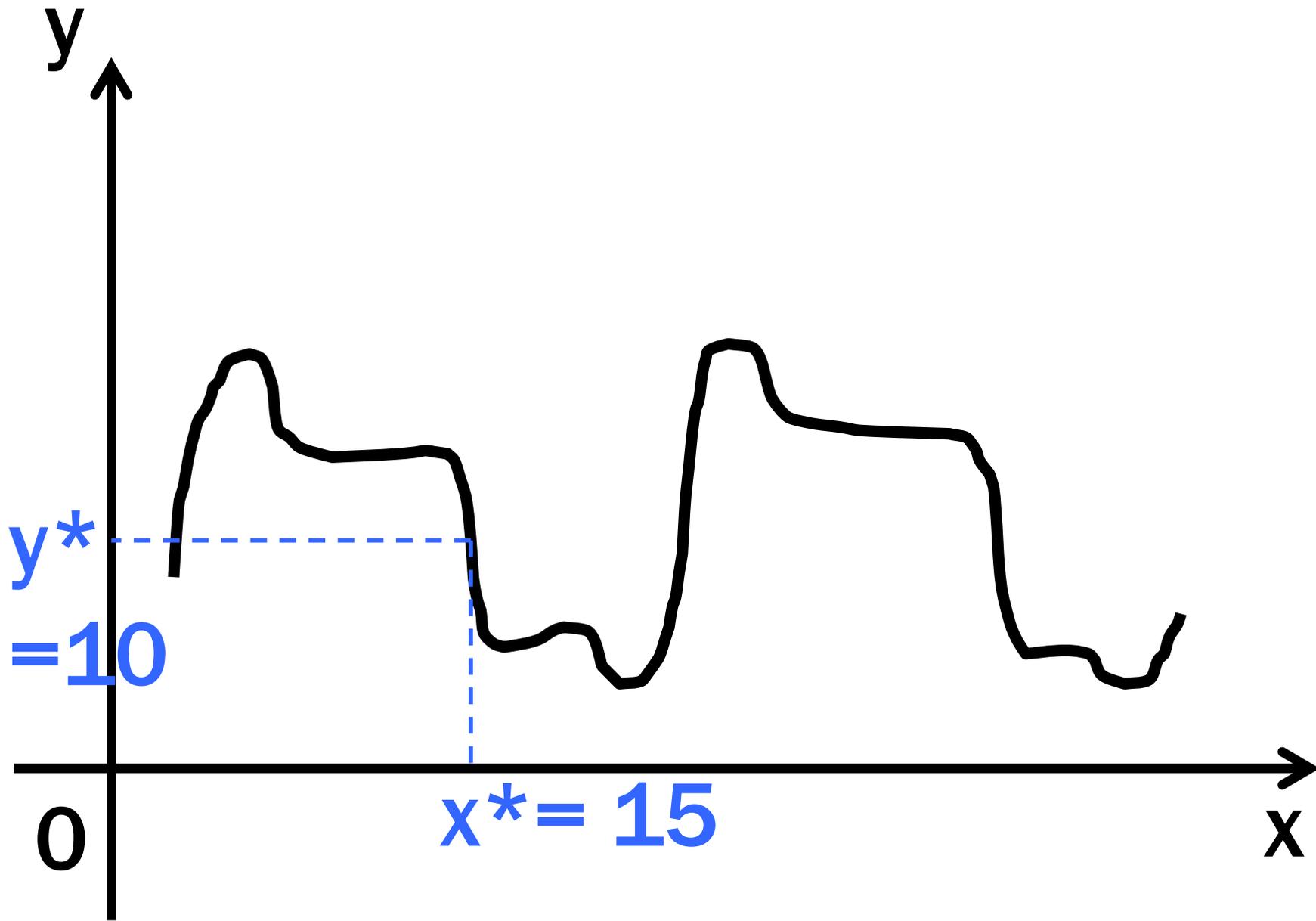
x y r g b
□ (9,14,245,133,167)

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US-ASCII Code Chart. Scanner
copied from the material
delivered with TermiNet 300
impact type printer with
Keyboard, February 1972,
General Electric Data
communication Product Dept.,
Waynesboro, Virginia.

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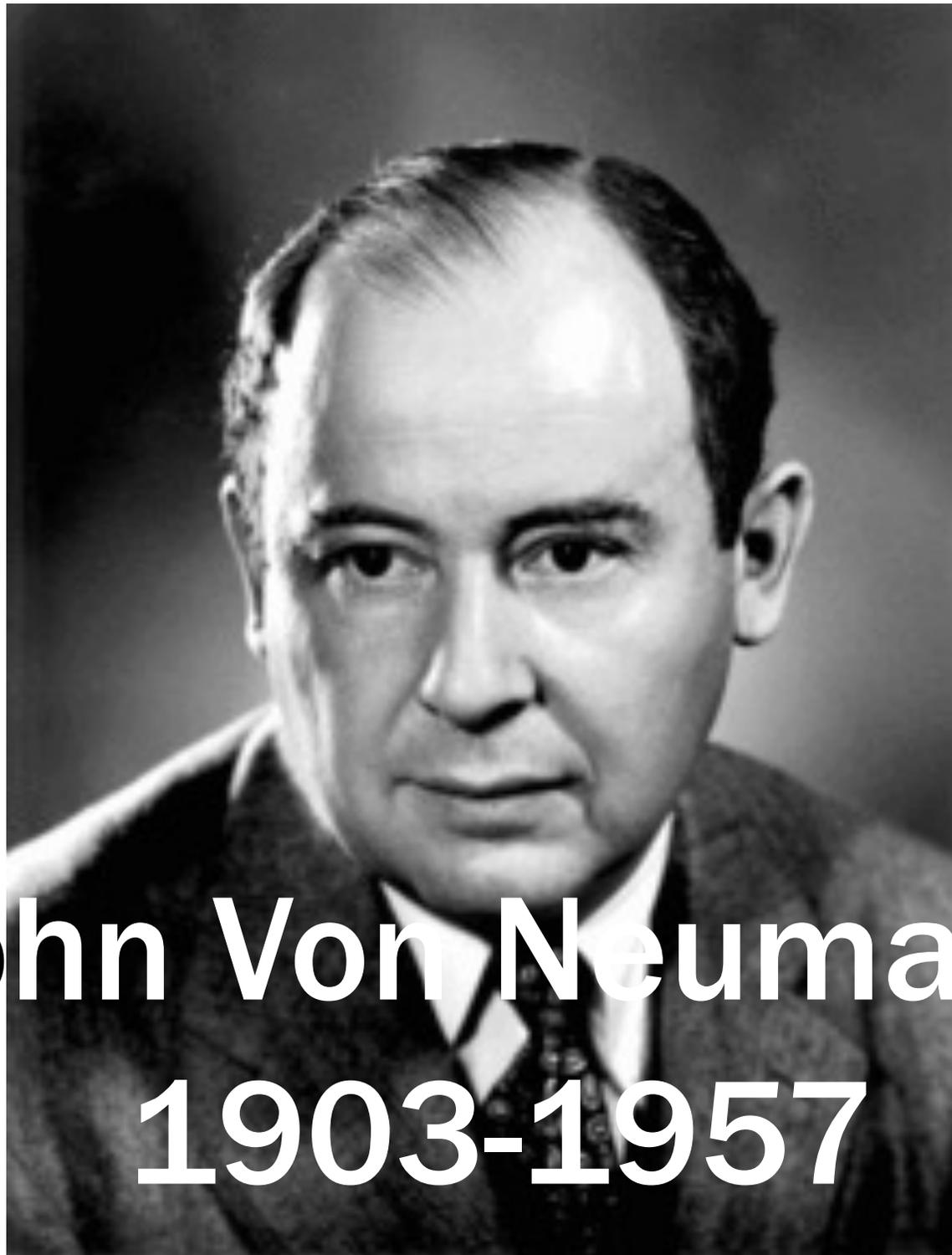
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456715 01IT456
56789 ALL34567
34567 JUST2345
4567 NUMBER56
567890?2345678
27890123456789



$$3+2$$

352



John Von Neumann
1903-1957



Von



János Lajos Neumann





Nuclear bomb test (Bikini Atoll, Micronesia, 1946)



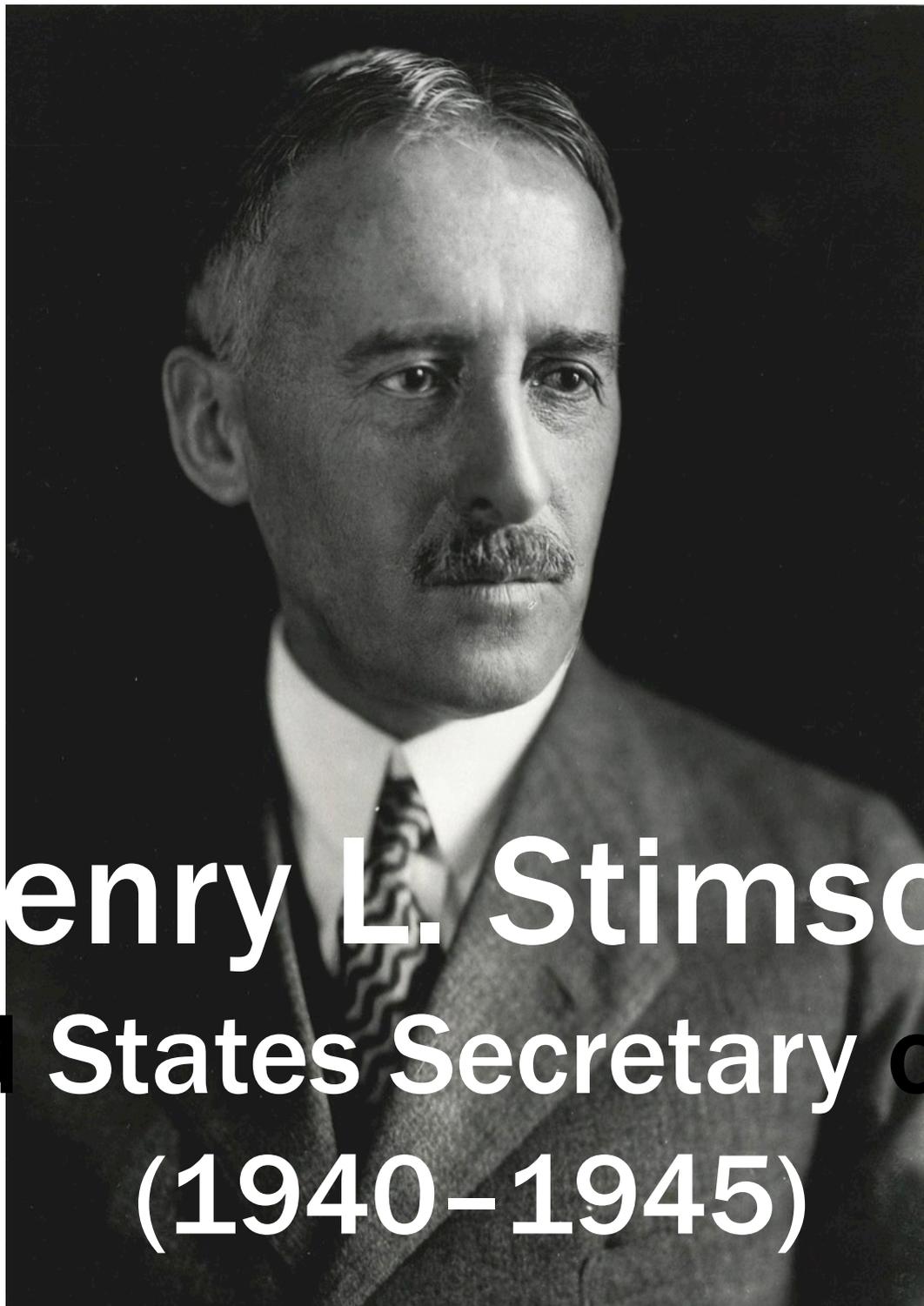


Honeymoon in Kyoto

Kyoto is an incredibly romantic city. With intimate restaurants, atmospheric lanes, superb accommodations and a thousand quiet gardens and temples, it's the perfect place to spend time with someone you love. Here's our full guide to honeymooning in Kyoto.







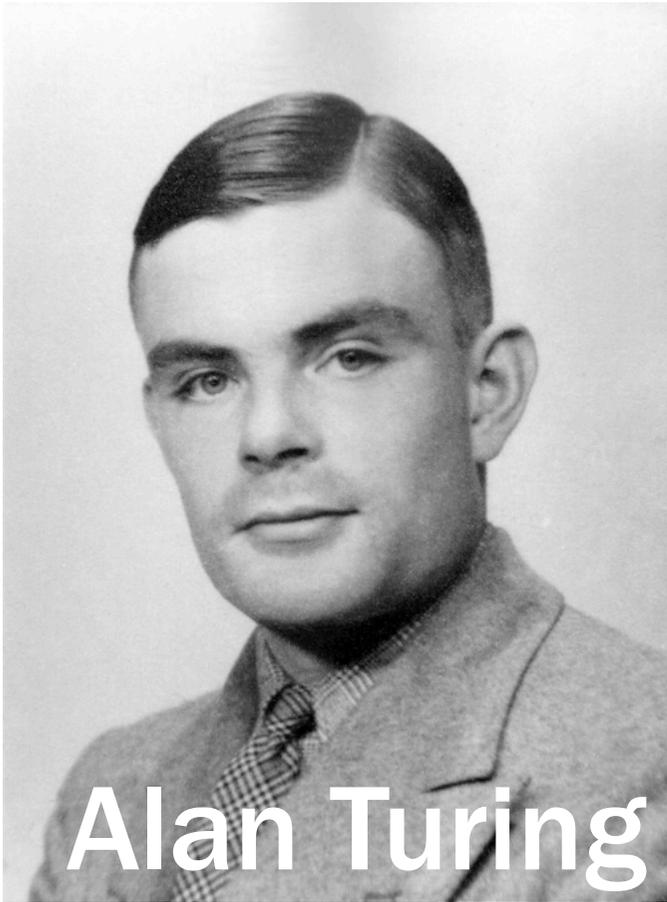
Henry L. Stimson

United States Secretary of War

(1940-1945)



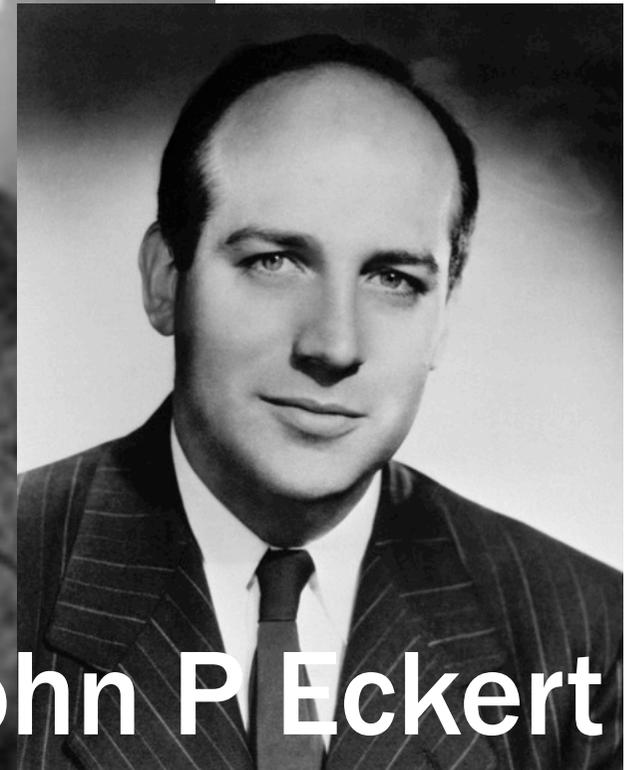
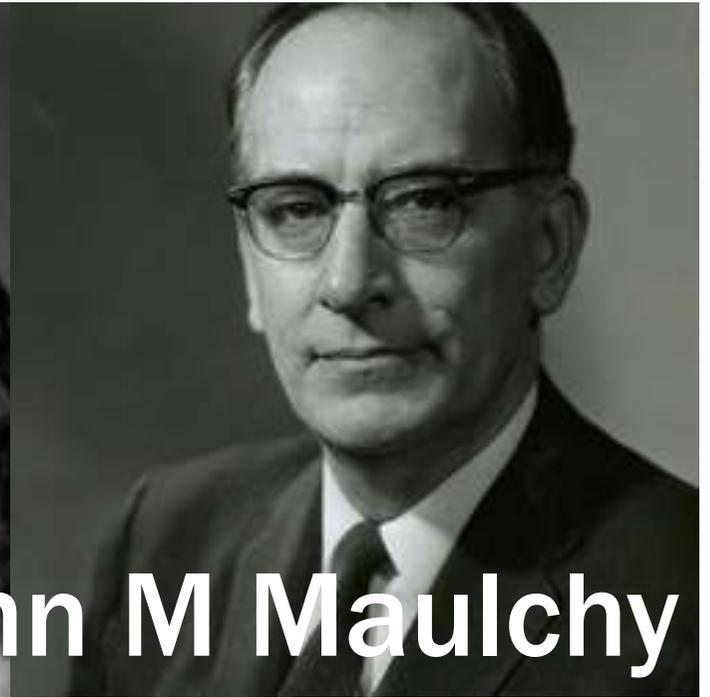
Von



Alan Turing



John M Maulchy



John P Eckert

2345678901234

345 THE 345

456 THE 456

567 STORED 567

345 STORED 345

456 PROGRAM 456

5678901234567

2345678901234567890

THE STORED PROGRAM

Both operations and operands can be stored in the same place.

THE STORED PROGRAM

Both **operations** and **operands** can be **stored** in the same **place**.

operations

operands

$$3+2$$

operations

operands

352

operations

operands

place 352

FREE YOUR MIND

THE MATRIX

1. The Matrix is a computer-generated world that controls the actions and behavior of everyone in it. It was created by a group of scientists who wanted to create a world that was perfect and controlled. The Matrix is a simulation of reality, and it is designed to keep people from questioning their reality.

2. The Matrix is a world of illusion. It is a world where everything is controlled by a program. The program is designed to keep people from questioning their reality. The Matrix is a world where everything is controlled by a program. The program is designed to keep people from questioning their reality.

3. The Matrix is a world of illusion. It is a world where everything is controlled by a program. The program is designed to keep people from questioning their reality. The Matrix is a world where everything is controlled by a program. The program is designed to keep people from questioning their reality.

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5. The Matrix is a world of illusion. It is a world where everything is controlled by a program. The program is designed to keep people from questioning their reality. The Matrix is a world where everything is controlled by a program. The program is designed to keep people from questioning their reality.

6. The Matrix is a world of illusion. It is a world where everything is controlled by a program. The program is designed to keep people from questioning their reality. The Matrix is a world where everything is controlled by a program. The program is designed to keep people from questioning their reality.

7. The Matrix is a world of illusion. It is a world where everything is controlled by a program. The program is designed to keep people from questioning their reality. The Matrix is a world where everything is controlled by a program. The program is designed to keep people from questioning their reality.

8. The Matrix is a world of illusion. It is a world where everything is controlled by a program. The program is designed to keep people from questioning their reality. The Matrix is a world where everything is controlled by a program. The program is designed to keep people from questioning their reality.

9. The Matrix is a world of illusion. It is a world where everything is controlled by a program. The program is designed to keep people from questioning their reality. The Matrix is a world where everything is controlled by a program. The program is designed to keep people from questioning their reality.

10. The Matrix is a world of illusion. It is a world where everything is controlled by a program. The program is designed to keep people from questioning their reality. The Matrix is a world where everything is controlled by a program. The program is designed to keep people from questioning their reality.

$$\begin{matrix} & \begin{matrix} 1 & 2 & \dots & n \end{matrix} \\ \begin{matrix} 1 \\ 2 \\ 3 \\ \vdots \\ m \end{matrix} & \left[\begin{array}{cccc} a_{11} & a_{12} & \dots & a_{1n} \\ a_{21} & a_{22} & \dots & a_{2n} \\ a_{31} & a_{32} & \dots & a_{3n} \\ \vdots & \vdots & \vdots & \vdots \\ a_{m1} & a_{m2} & \dots & a_{mn} \end{array} \right] \end{matrix}$$

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

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

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

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

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

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

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

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

57681349

06789011

28354576

98087739

0 1 2 3

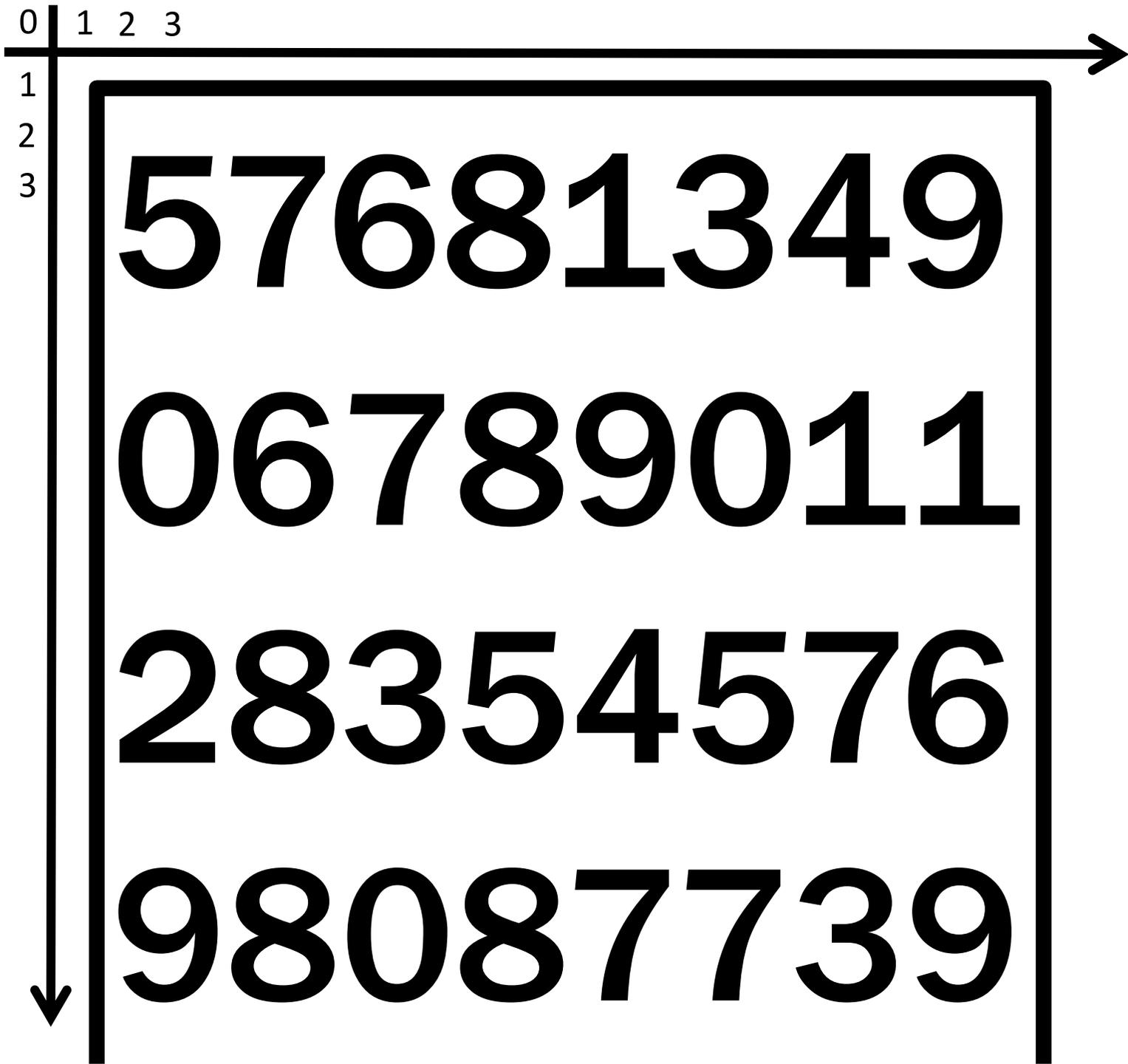
1

2

3

The image can be put in a system of coordinates, so that each pixel's position is determined by a pair of numbers (x,y)

 (9,14)



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

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 5 | 7 | 6 | 8 | 1 | 3 | 4 | 9 |
| 0 | 6 | 7 | 8 | 9 | 0 | 1 | 1 |
| | | | 5 | 4 | 5 | 7 | 6 |
| 9 | 8 | 0 | 8 | 7 | 7 | 3 | 9 |

a "word"



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



| | | | | | | | |
|----------|----------|----------|----------|----------|----------|----------|----------|
| 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 |
| 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 |
| 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |



| | | | | | | | |
|---|---|--------|---|---|---|---|---|
| 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| 1 | 1 | 32 bit | | | | 1 | 0 |
| 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 |
| 1 | 0 | 64 bit | | | | 1 | 1 |

bit

0

Byte

01101010

**Why is 1 Byte
made of 8 bits?**

Choices.



Federico Faggin, Marcian "Ted" Hoff Jr., and Stanley Mazor with the pioneering microprocessor they created in the early 1970s, the Intel 4004



| | | | | | | | |
|----------|----------|----------|----------|----------|----------|----------|----------|
| 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 |
| 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 |
| 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |

operations

operands

352

← operators → operands →

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 |
| 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 |
| 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |



0 1 0 1 0 1 0

Who decided
this division?

1 0 0 0 1 0 1 1

Again, choices.



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 |
| 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 |
| 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |

THE STORED PROGRAM

Both operations and operands can be stored in the same place.

THE STORED PROGRAM

Both operations and
operands are bits
stored inside words.

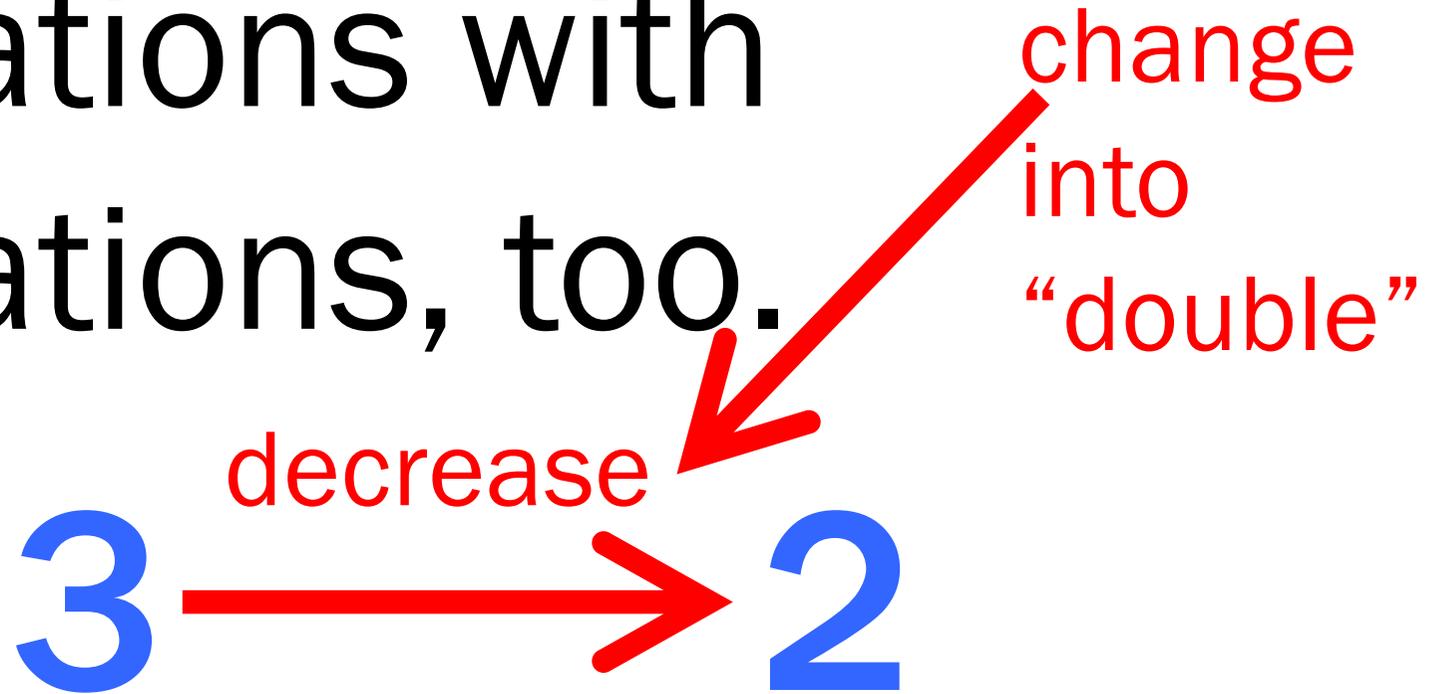
THE STORED PROGRAM

We manipulate
operands with
operations.



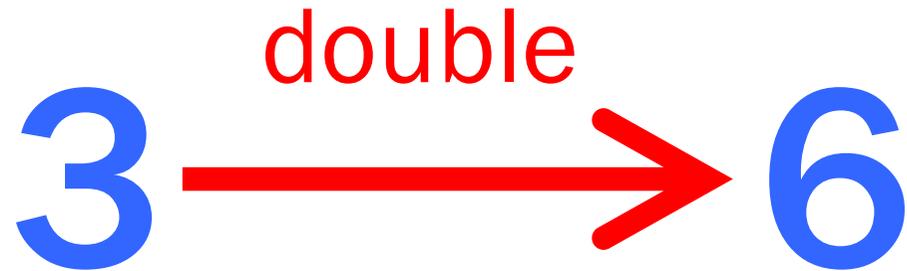
THE STORED PROGRAM

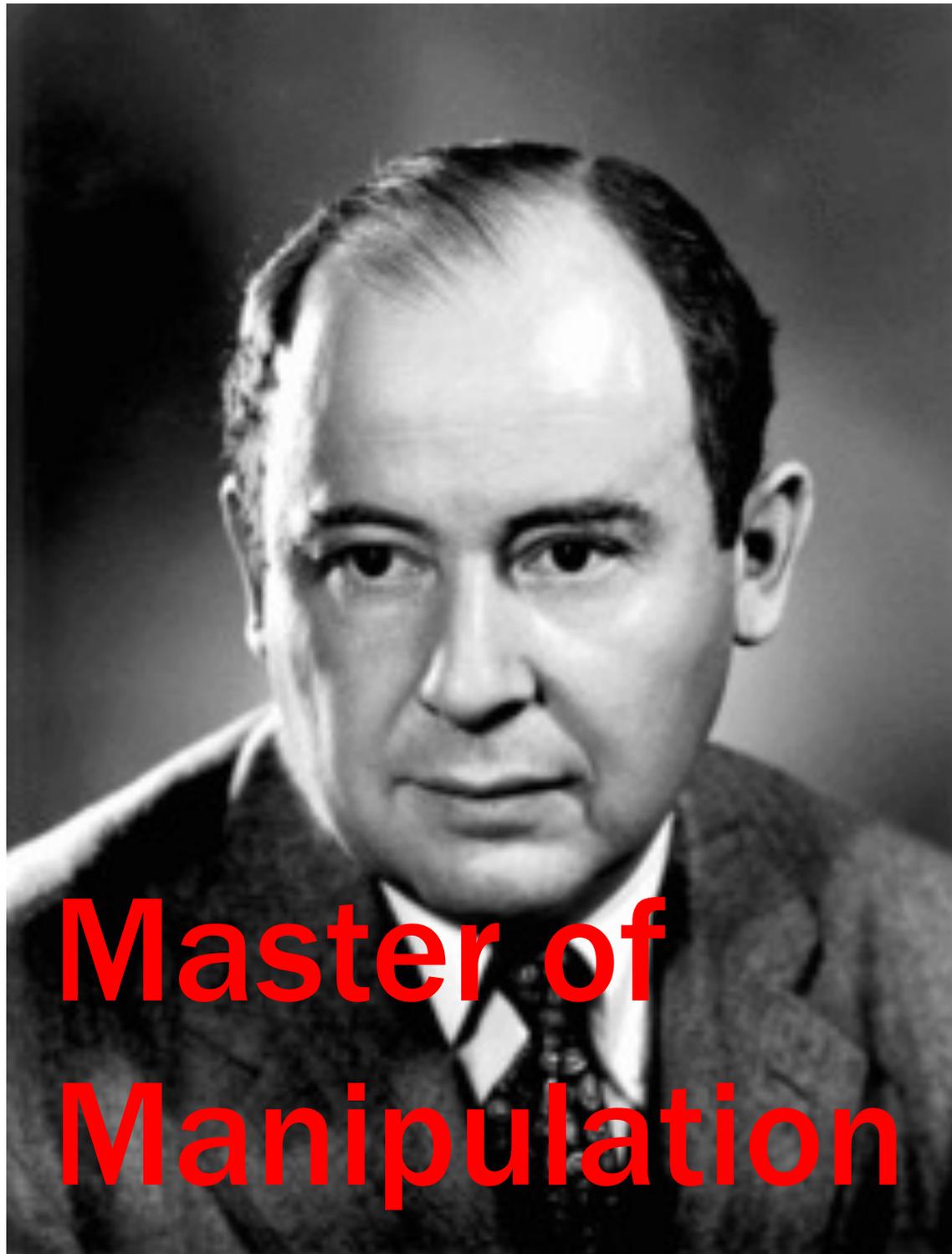
We can manipulate operations with operations, too.



THE STORED PROGRAM

We can manipulate
operations with
operations, too.





**Master of
Manipulation**

operations

operands

place 352

| | | | | | | | |
|----------|----------|----------|----------|----------|----------|----------|----------|
| 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 |
| 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 |
| 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 |
| 2 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 |
| 3 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 |
| 2 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 |
| 3 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |

Addresses

0000

01101010

0001

11001110

0010

11011011

0011

10001011

| | | | | | | | | |
|------|---|---|---|---|---|---|---|---|
| 0000 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| 0001 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 |
| 0010 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 |
| 0011 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |

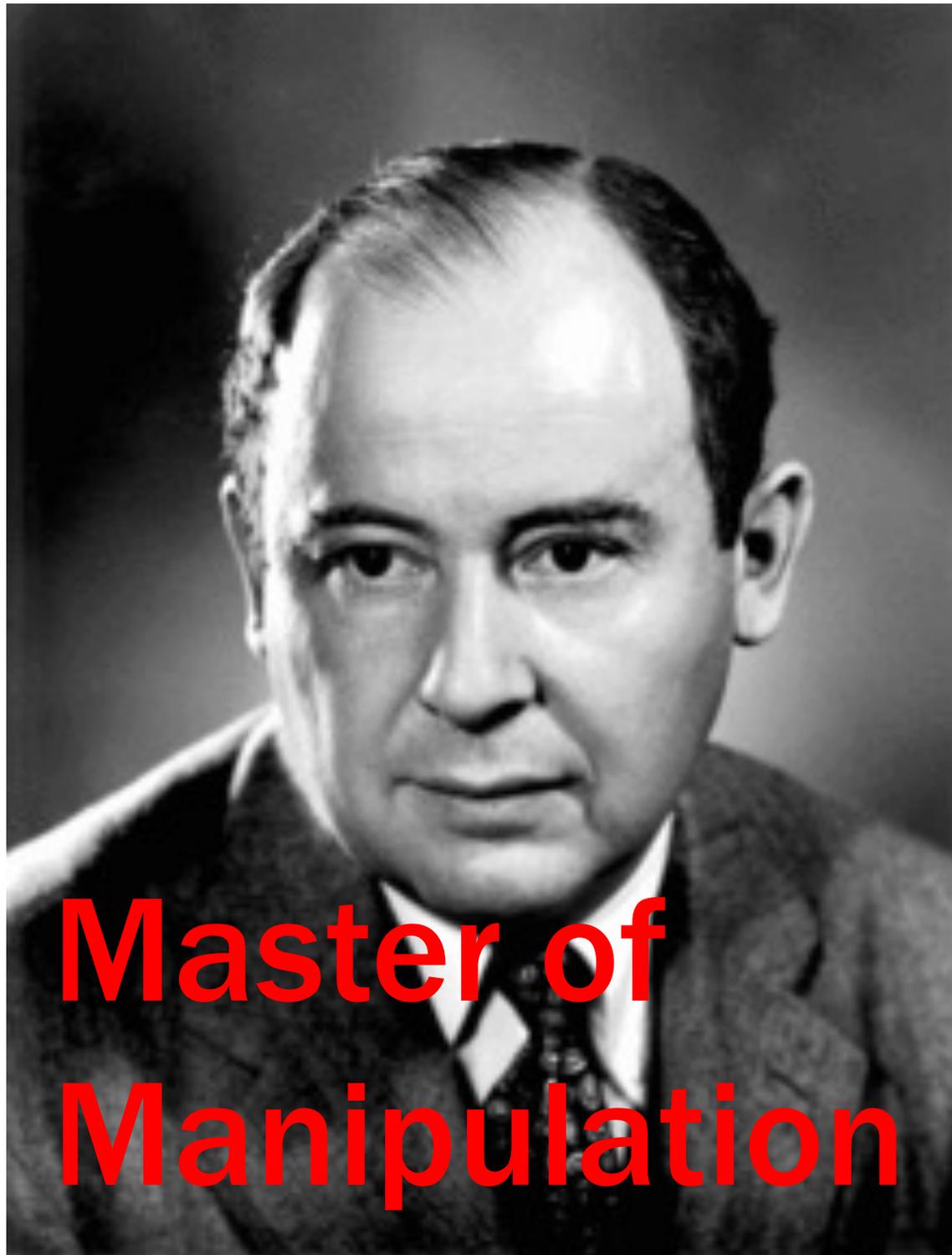
operations

operands

place 4527

THE STORED PROGRAM

- We manipulate operands.
- We manipulate operations.
- We manipulate addresses.



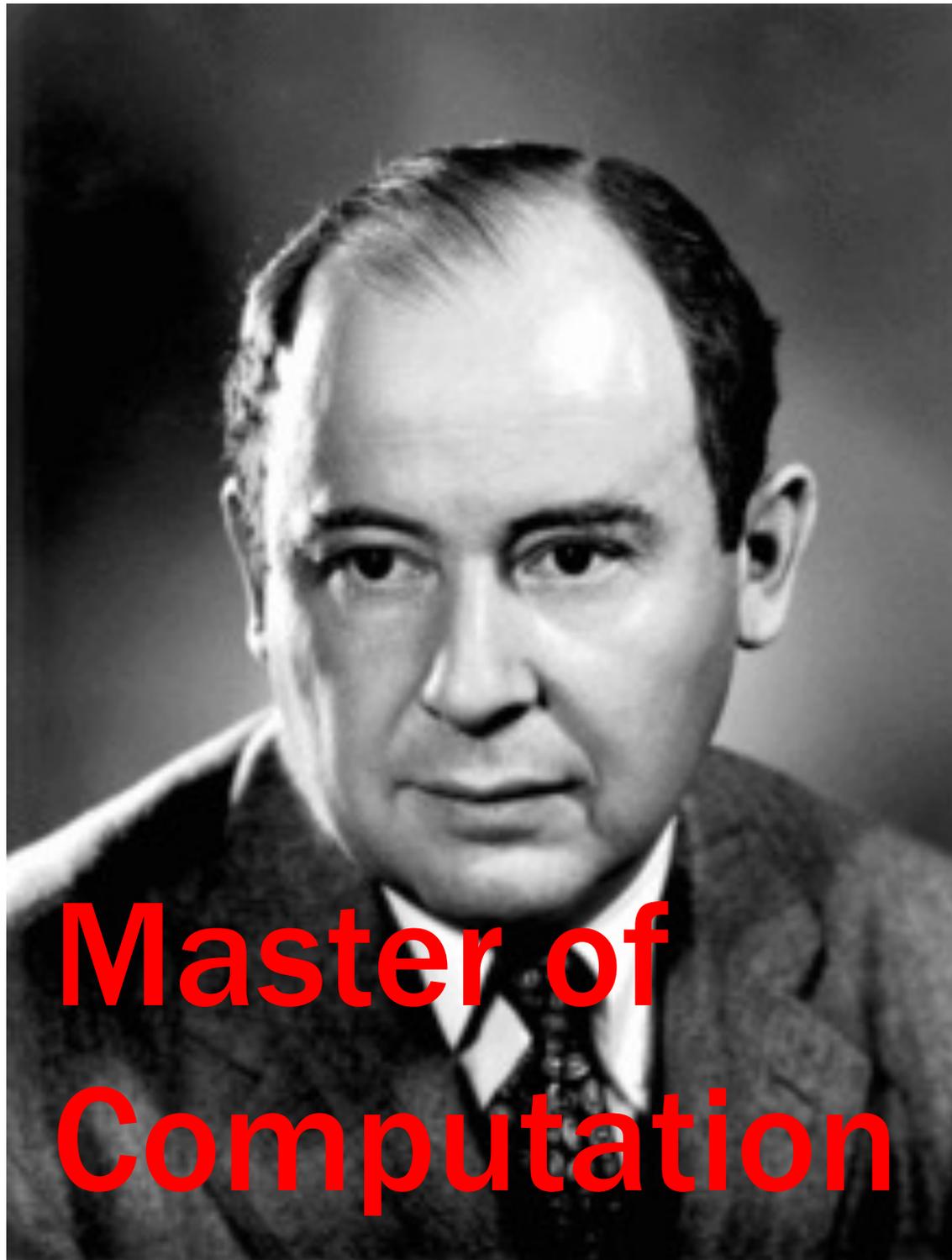
**Master of
Manipulation**

THE STORED PROGRAM

- We elaborate data.
- We create and modify programs.
- We transfer data and programs.



**Master of
Computation**



Master of Computation

(Still
an awful
person.)



The Digital in
Digital A...ion.docx



PROGRAM



The Digital in
Digital A...ion.docx

DATA



The Digital in
Digital A...ion.docx

PROGRAM

DATA

FILES



A file cabinet.





Smiling Vintage Secretary ...
123rf.com



Female secretary or assistant checking ...
alamy.com



Classic Solid Wood Secretar...
dutchcrafters.com · In stock



Secretary filing cabinet Sto...
masterfile.com



Smiling secretary searchi...
canstockphoto.com



Secretary desks, File cabinet desk ...
pinterest.pt



Female secretary or assistant checking ...
alamy.com



2 Drawer File Cabinet Solid Oak ...
amazon.com



Free Filing Cabinet Drawer ...
stockunlimited.com



File cabinet desk ...
pinterest.com

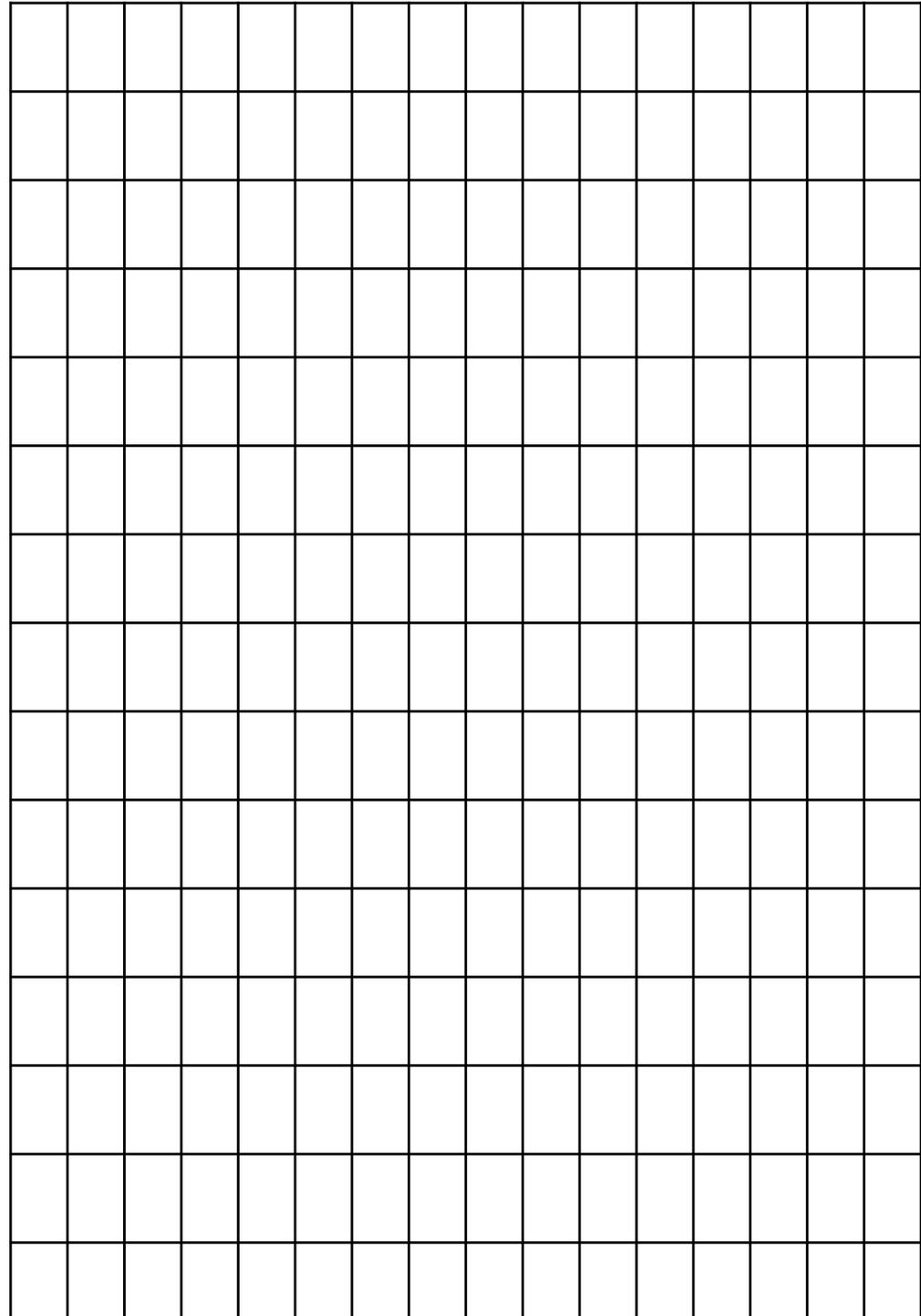


Female secretary or assist...
alamy.com



Oak secretary, file cabinet...
pinterest.it

Where is **w**?

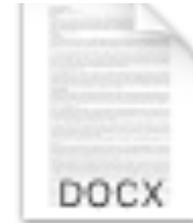




11 Save Your
Tears.m4a



enso.JPG



The Digital in
Digital A...ion.docx

PROGRAM

DATA

FILES

FILES

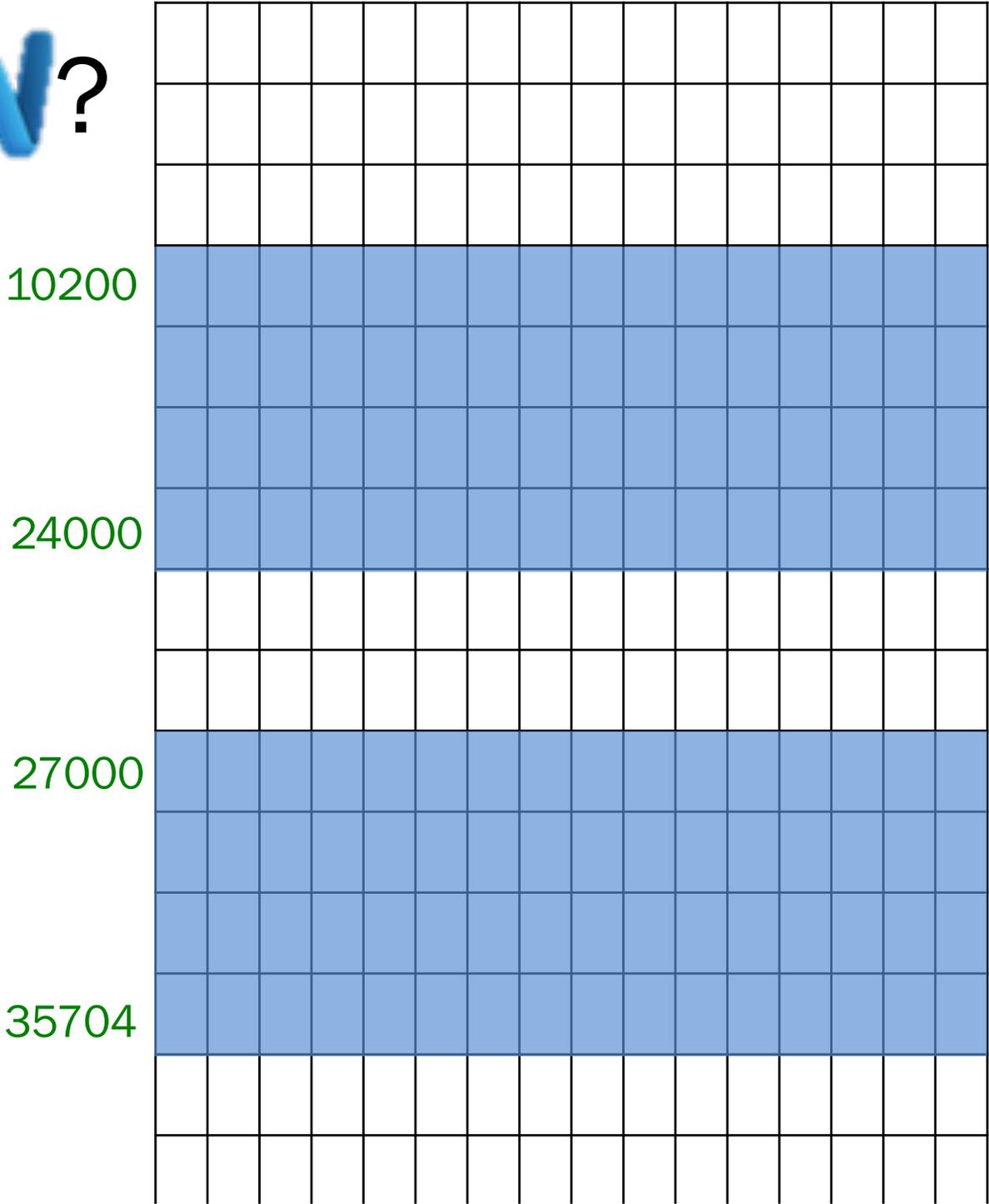
- A file is a group of bits that are logically treated as a unit.
- A file may be comprised of data, program instructions, or addresses.

FILES

- A file is a group of bits that are **logically** treated as a unit.
- A file may be comprised of data, program instructions, or addresses.

Where is **w**?

From word 10200 to word 24000 and from word 27000 to 35704.



FILES

- A file is a group of bits that are logically treated as a unit.
- A file may be comprised of data, program instructions, or addresses.



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FOLDER

01101010

11001110

MEMORY

11011011

10001011

MEMORY





Memory < (Greek) Mimnesko < mnè < men [the mind]



Memory < (Greek) **Mimnesko** < mnè < men [the mind]

Record < (Latin) **Re-cordis** < cor < [the heart]



Memory < (Greek) **Mimnesko** < **mnè** < **men** [the mind]

Record < (Latin) **Re-cordis** < **cor** < [the heart]



Memory < (Greek) Mimnesko < mnè < men [the mind]

Record < (Latin) Re-cordis < cor < [the heart]



Memory < (Greek) Mimnesko < mnè < men [the **mind**]

Record < (Latin) Re-cordis < cor < [the **heart**]

Memory < (Greek) Mimnesko < mnè < men [the mind]

Record < (Latin) **Re**-cordis < cor < [the heart]

Re

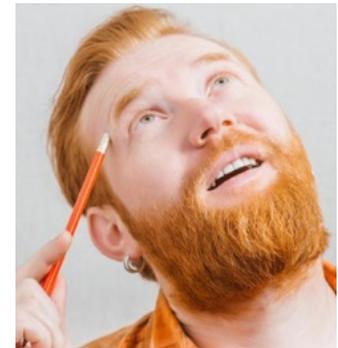
What "Re" is about.



What "Re" is about.



What "Re" is about.



What "Re" is about.



time →



What "Re" is about.



past
event

time

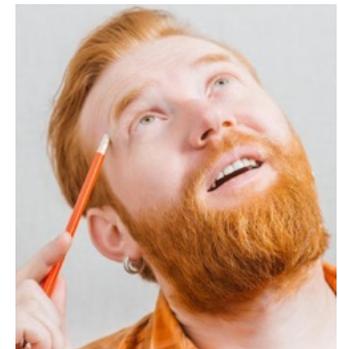


What "Re" is about.



past
event

time



remembering
now

What “Re” is about.

- An event

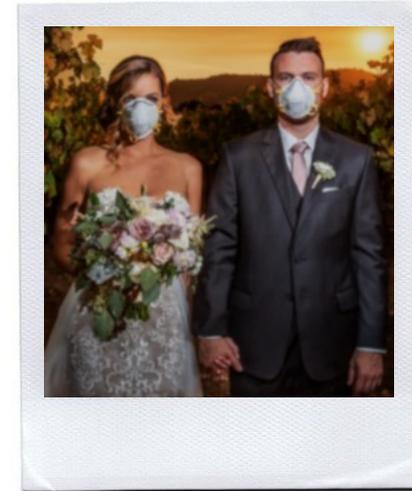


What “Re” is about.

- An event



- A description of the event

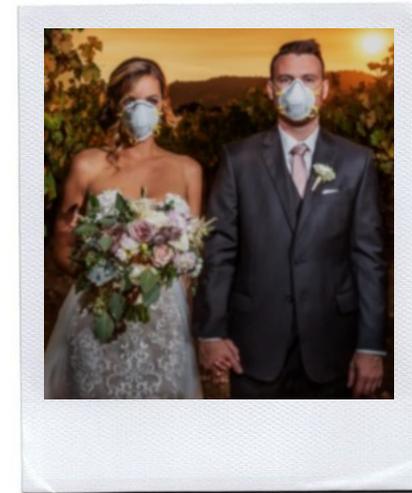


What “Re” is about.

- An event



- A description of the event



- A person who accesses the description



What is this, really?

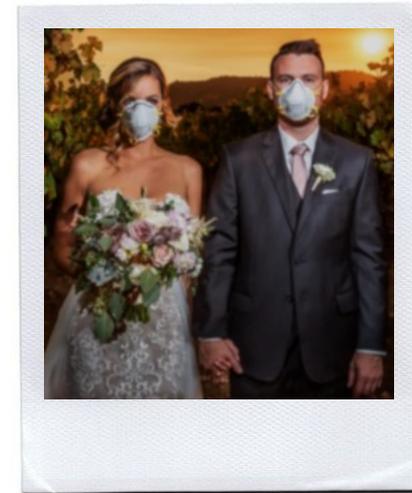
- An event



- An event



- A description of the event

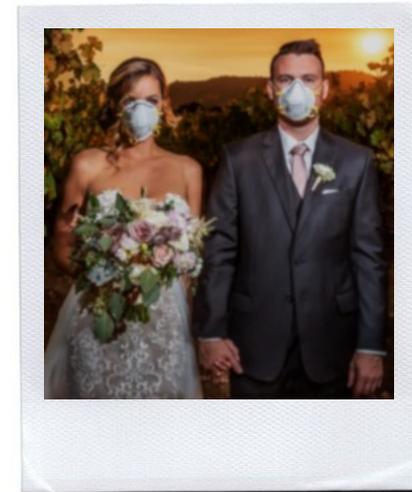


On this slide, they are both descriptions of an event.

- An event



- A description of the event



**The only event here is
that I am showing this slide.**

- An event



An event happens.

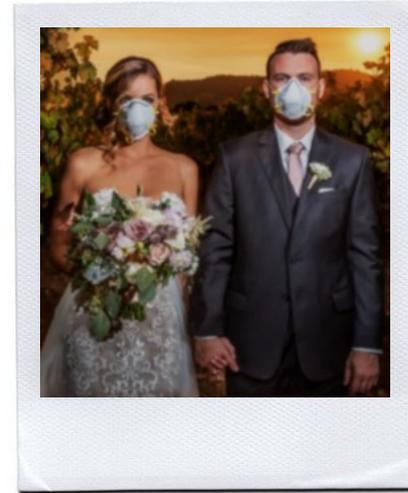
**There are people in a place,
with their bodies, their faces,
their voices.**

There is music, there is dancing.

There is food, there are flowers.

There are tastes, there are smells.

- A description of an event



An event happened.

There were people in a place,
with their bodies, their faces,
their voices.

There was music, there was dancing.

There was food, there were flowers.

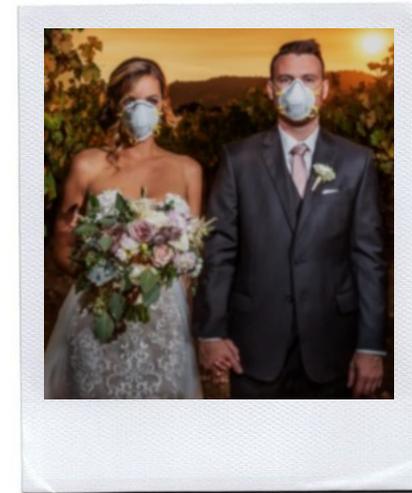
There were tastes, there were smells.

What “Re” is about.

- An event



- A description of the event



- A person who accesses the description

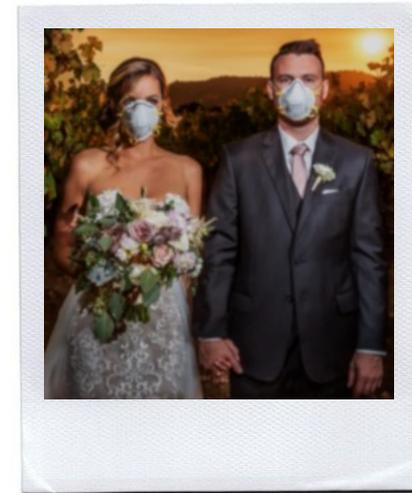


What about the person?

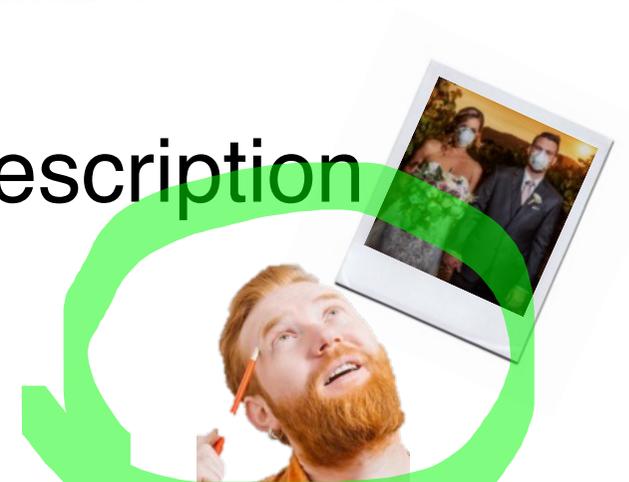
- An event



- A description of the event

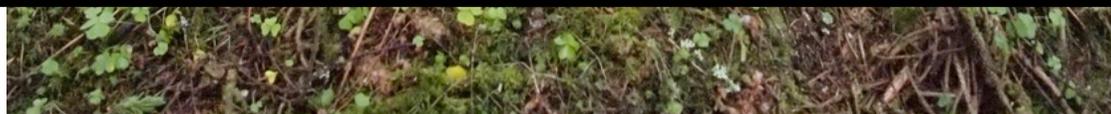


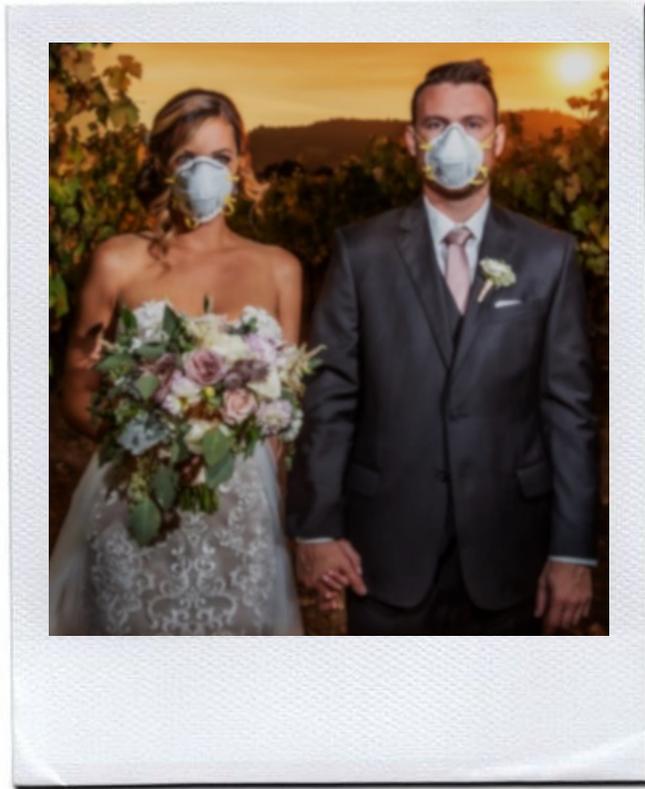
- A person who accesses the description



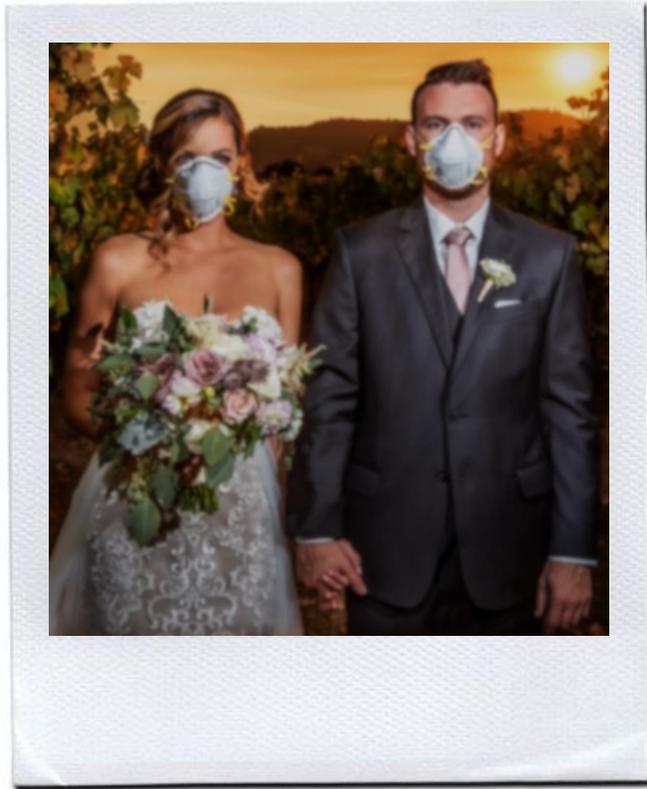


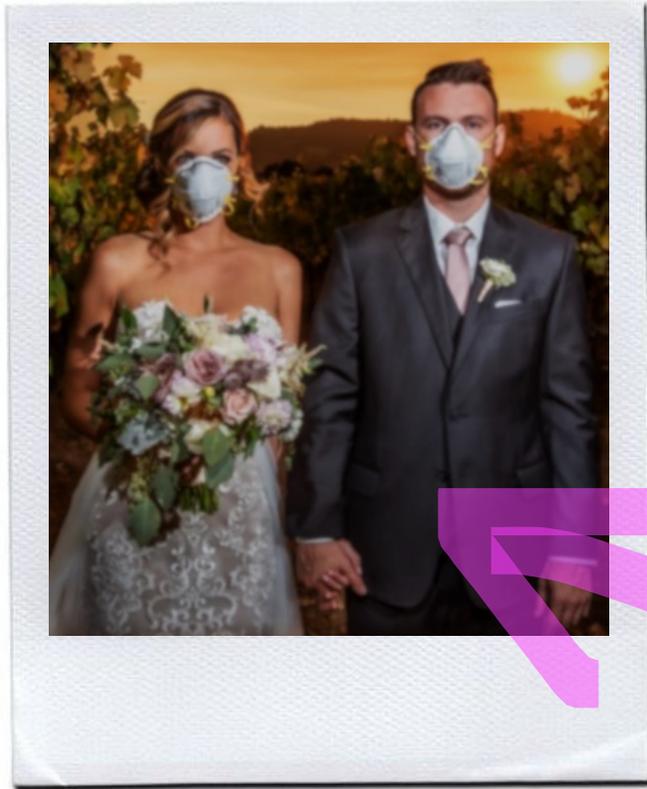
“If a tree were to fall on an island where there were no human beings would there be any sound?”

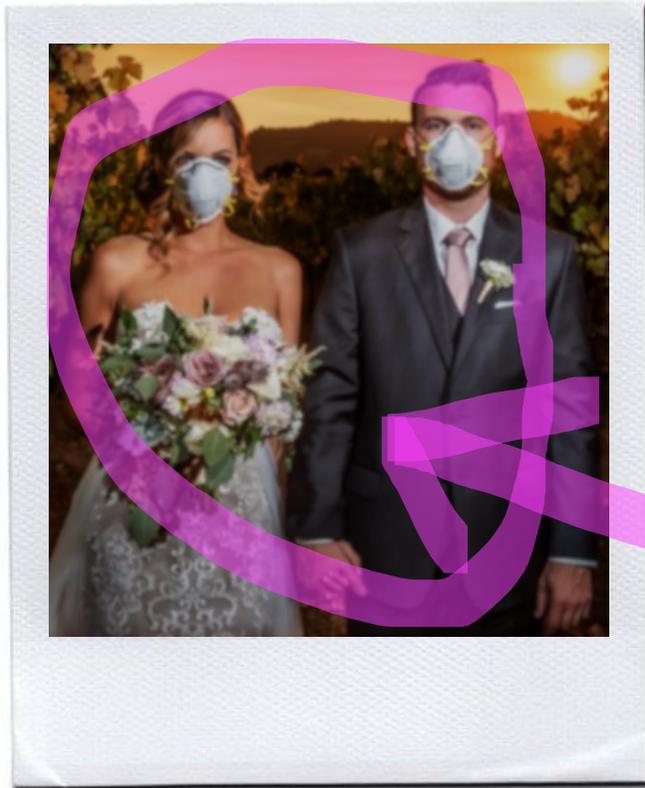




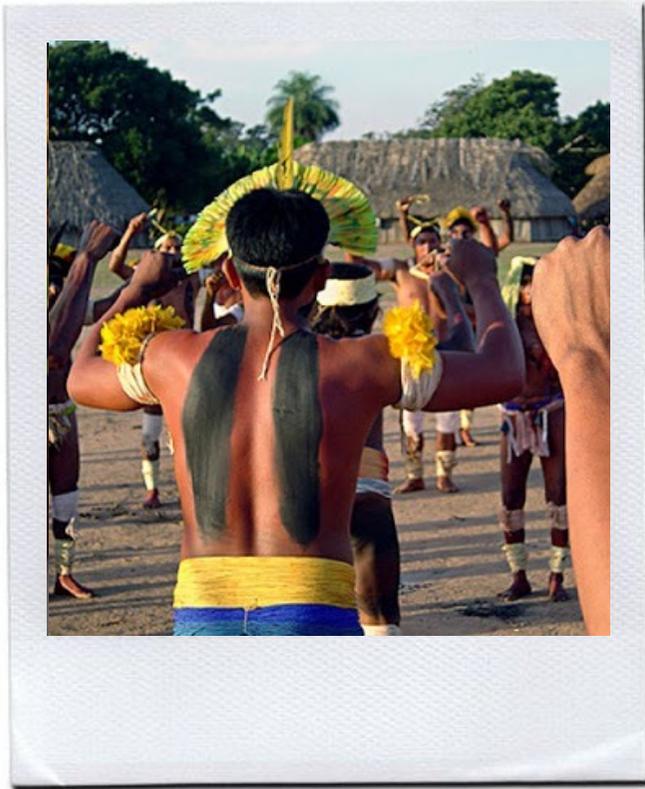
“If a Polaroid picture were to be on an island where there were no human beings would there be any memory?”

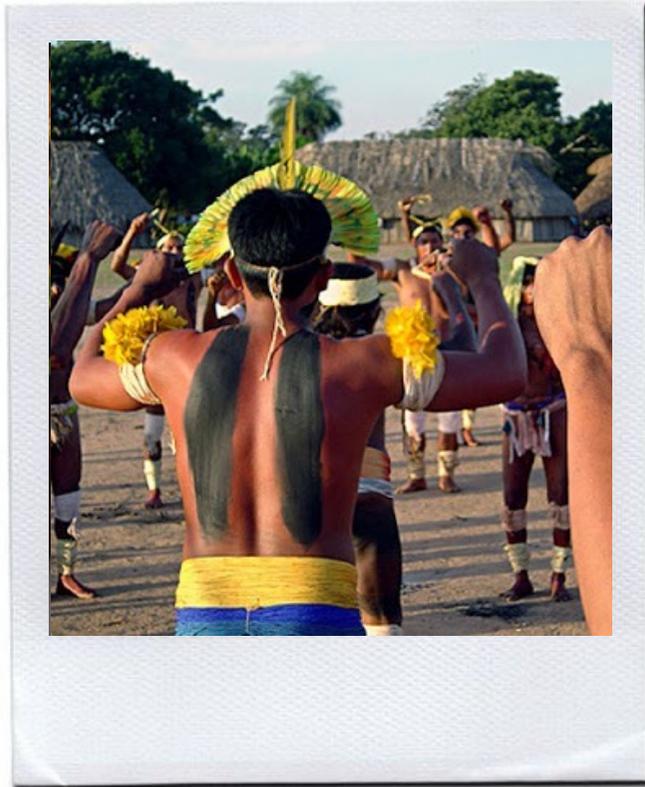






1. There is a relation between the person accessing the description and the content of the description

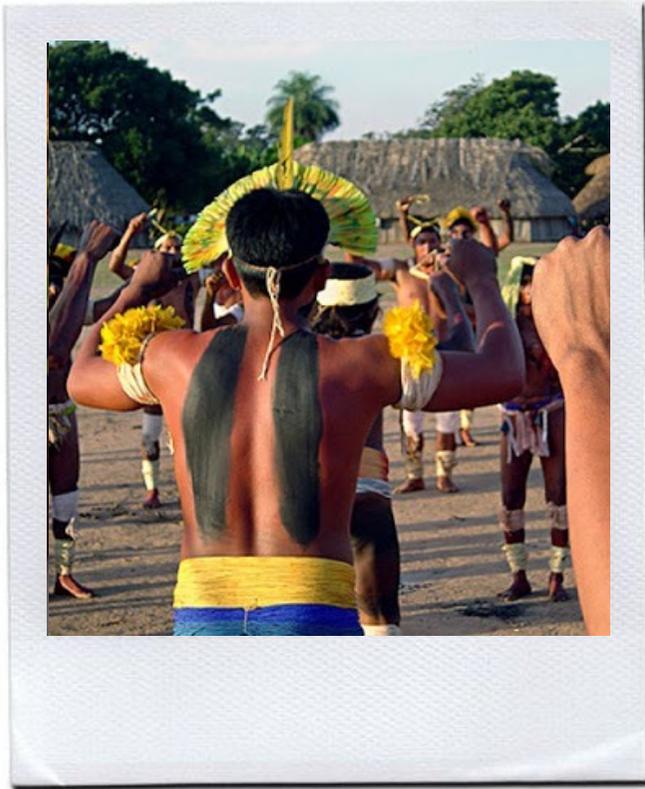


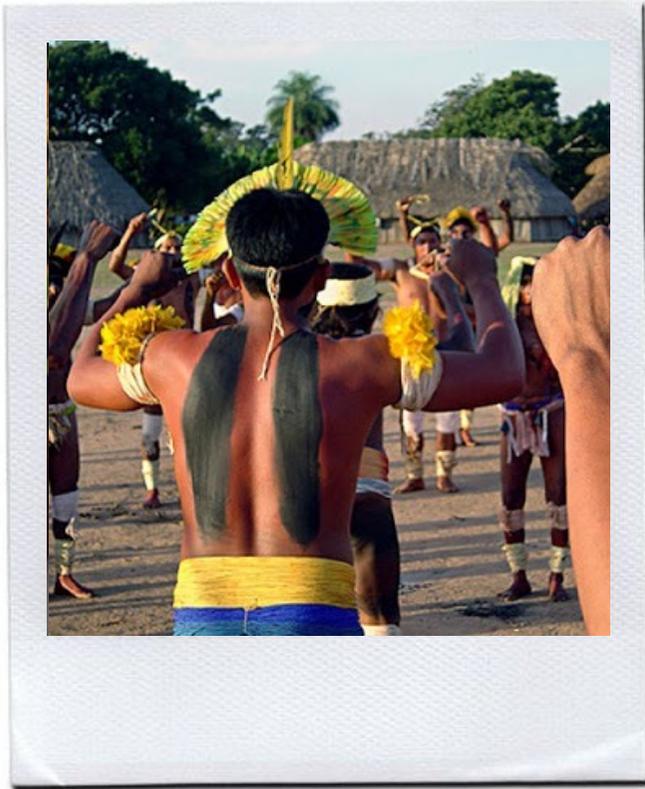


«A person cannot remember an event in which they didn't participate!»

MEMORY

Memories are not only about a single person. Memories can be about a family, a nation, a culture, the human race.







past
event

time



remembering
now



past
event

time



remembering
in the future

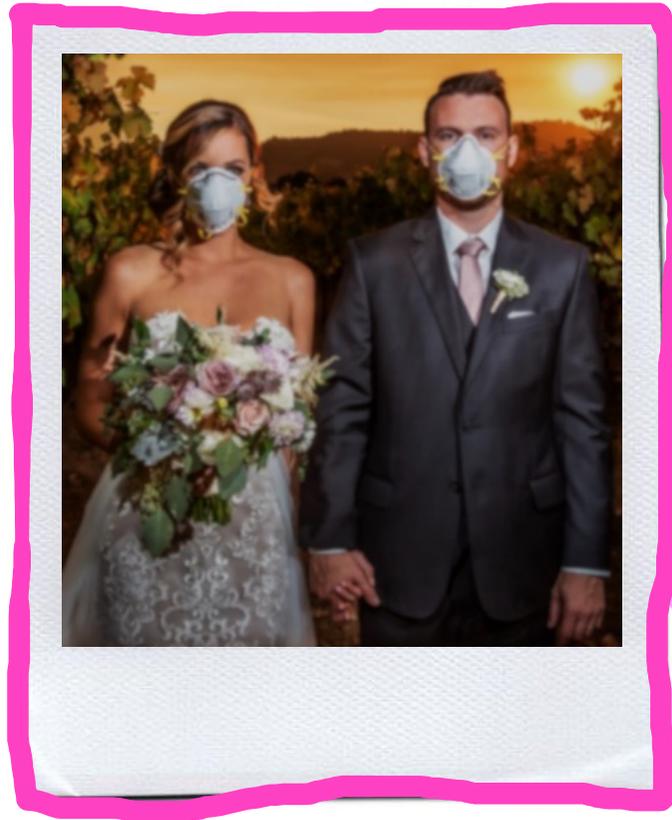


**past
event**

time



**remembering
in the far future**



2. There is a relation between the person accessing the description and the container of the description





time



Is a person still able to access the description of an event? Will the container of that description stand the test of time?

Digital Memory Devices



USB key



Solid State Disk



RAM



CD/DVD



SD card



Magnetic
Hard Disk

Digital Memory Devices



USB key



Solid State Disk



RAM



CD/DVD



SD card



Magnetic Hard Disk

2345678901234
3456789012345
4567890123456
5678901234567
3456789012345
4567890123456
5678901234567
2789012345678

2345678901234
3456789012345
4567890123456
5678901234567
3456789012345
1567890123456
5678901234567
2789012345678











USASCII code chart

| Bits | | | | | 0 0 0 | 0 0 1 | 0 1 0 | 0 1 1 | 1 0 0 | 1 0 1 | 1 1 0 | 1 1 1 | |
|----------------|----------------|----------------|----------------|-------|----------|-------|-------|-------|-------|-------|-------|-------|-----|
| b ₄ | b ₃ | b ₂ | b ₁ | Row ↓ | Column → | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 0 | 0 | 0 | 0 | 0 | 0 | NUL | DLE | SP | 0 | @ | P | \ | p |
| 0 | 0 | 0 | 1 | 1 | 1 | SOH | DC1 | ! | 1 | A | Q | a | q |
| 0 | 0 | 1 | 0 | 2 | 2 | STX | DC2 | " | 2 | B | R | b | r |
| 0 | 0 | 1 | 1 | 3 | 3 | ETX | DC3 | # | 3 | C | S | c | s |
| 0 | 1 | 0 | 0 | 4 | 4 | EOT | DC4 | \$ | 4 | D | T | d | t |
| 0 | 1 | 0 | 1 | 5 | 5 | ENQ | NAK | % | 5 | E | U | e | u |
| 0 | 1 | 1 | 0 | 6 | 6 | ACK | SYN | & | 6 | F | V | f | v |
| 0 | 1 | 1 | 1 | 7 | 7 | BEL | ETB | ' | 7 | G | W | g | w |
| 1 | 0 | 0 | 0 | 8 | 8 | BS | CAN | (| 8 | H | X | h | x |
| 1 | 0 | 0 | 1 | 9 | 9 | HT | EM |) | 9 | I | Y | i | y |
| 1 | 0 | 1 | 0 | 10 | 10 | LF | SUB | * | : | J | Z | j | z |
| 1 | 0 | 1 | 1 | 11 | 11 | VT | ESC | + | ; | K | [| k | { |
| 1 | 1 | 0 | 0 | 12 | 12 | FF | FS | , | < | L | \ | l | |
| 1 | 1 | 0 | 1 | 13 | 13 | CR | GS | - | = | M |] | m | } |
| 1 | 1 | 1 | 0 | 14 | 14 | SO | RS | . | > | N | ^ | n | ~ |
| 1 | 1 | 1 | 1 | 15 | 15 | SI | US | / | ? | O | _ | o | DEL |

USASCII code chart

| Bits | | | | Column | | | | | | | | | | | | |
|----------------|----------------|----------------|----------------|--------|-------|-------|-------|-------|-------|-------|-------|----|----|----|----|----|
| b ₄ | b ₃ | b ₂ | b ₁ | 0 0 | 0 0 1 | 0 1 0 | 0 1 1 | 1 0 0 | 1 0 1 | 1 1 0 | 1 1 1 | | | | | |
| Row | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 0 0 0 0 | 0 | NUL | DLE | SP | 0 | @ | P | \ | p | | | | | | | |
| 0 0 0 1 | 1 | SOH | DC1 | ! | 1 | A | Q | a | q | | | | | | | |
| 0 0 1 0 | 2 | STX | DC2 | " | 2 | B | R | b | r | | | | | | | |
| 0 0 1 1 | 3 | ETX | DC3 | # | 3 | C | S | c | s | | | | | | | |
| 0 1 0 0 | 4 | EOT | DC4 | \$ | 4 | D | T | d | t | | | | | | | |
| 0 1 0 1 | 5 | ENQ | NAK | % | 5 | E | U | e | u | | | | | | | |
| 0 1 1 0 | 6 | ACK | SYN | & | 6 | F | V | f | v | | | | | | | |
| 0 1 1 1 | 7 | BEL | ETB | ' | 7 | G | W | g | w | | | | | | | |
| 1 0 0 0 | 8 | BS | CAN | (| 8 | H | X | h | x | | | | | | | |
| 1 0 0 1 | 9 | HT | EM |) | 9 | I | Y | i | y | | | | | | | |
| 1 0 1 0 | 10 | LF | SUB | * | : | J | Z | j | z | | | | | | | |
| 1 0 1 1 | 11 | VT | ESC | + | : | K | [| k | { | | | | | | | |
| 1 1 0 0 | 12 | FF | FS | , | < | L | \ | l | | | | | | | | |
| 1 1 0 1 | 13 | CR | GS | - | = | M |] | m | } | | | | | | | |
| 1 1 1 0 | 14 | SO | RS | . | > | N | ^ | n | ~ | | | | | | | |
| 1 1 1 1 | 15 | SI | US | / | ? | O | _ | o | DEL | | | | | | | |



USASCII code chart

| Bits | | | | Column | | | | | | | |
|----------------|----------------|----------------|----------------|--------|-------|-------|-------|-------|-------|-------|-------|
| b ₄ | b ₃ | b ₂ | b ₁ | 0 0 | 0 0 1 | 0 1 0 | 0 1 1 | 1 0 0 | 1 0 1 | 1 1 0 | 1 1 1 |
| Row | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | |
| 0 0 0 0 | 0 | NUL | DLE | SP | 0 | @ | P | \ | p | | |
| 0 0 0 1 | 1 | SOH | DC1 | ! | 1 | A | Q | a | q | | |
| 0 0 1 0 | 2 | STX | DC2 | " | 2 | B | R | b | r | | |
| 0 0 1 1 | 3 | ETX | DC3 | # | 3 | C | S | c | s | | |
| 0 1 0 0 | 4 | EOT | DC4 | \$ | 4 | D | T | d | t | | |
| 0 1 0 1 | 5 | ENQ | NAK | % | 5 | E | U | e | u | | |
| 0 1 1 0 | 6 | ACK | SYN | & | 6 | F | V | f | v | | |
| 0 1 1 1 | 7 | BEL | ETB | ' | 7 | G | W | g | w | | |
| 1 0 0 0 | 8 | BS | CAN | (| 8 | H | X | h | x | | |
| 1 0 0 1 | 9 | HT | EM |) | 9 | I | Y | i | y | | |
| 1 0 1 0 | 10 | LF | SUB | * | : | J | Z | j | z | | |
| 1 0 1 1 | 11 | VT | ESC | + | ; | K | [| k | { | | |
| 1 1 0 0 | 12 | FF | FS | , | < | L | \ | l | | | |
| 1 1 0 1 | 13 | CR | GS | - | = | M |] | m | } | | |
| 1 1 1 0 | 14 | SO | RS | . | > | N | ^ | n | ~ | | |
| 1 1 1 1 | 15 | SI | US | / | ? | O | _ | o | DEL | | |

time



time





Proposal for marker of nuclear waste repository.
("Into Eternity", by Micheal Madsen, 2010)

10000 years