

Technologies changing how we think

Aurelijus Banelis





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PGP 0x320205E7**539B6203**
130D C446 1F1A 2E50 D6E3
3DA8 3202 05E7 539B 6203





Corona edition

Aurelijus Banelis

Technology enthusiast

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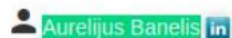
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130D C446 1F1A 2E50 D6E3
3DA8 3202 05E7 539B 6203





Buvę susitikimai

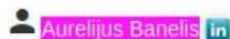
Migrations: Hacks or architecture



How AWS handles security



Dockerizing PHP apps



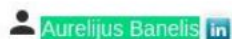
Coroutines in PHP



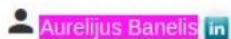
Real-time metrics with netdata



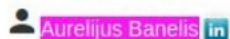
Inverting client-server architecture



Docker on VDS



Mutation testing



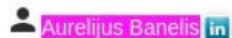
Headless browsers and friends



Multi-Model Databases



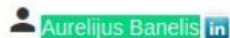
Išlipus iš vieno PHP failo



Svetainių pritaikymas akliesiems



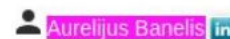
OrientDB in practice



Denormalizacija ir kiti SQL optimizavimo būdai



Funkcinis programavimas su PHP



WHAT THE
INTERNET
IS DOING TO
OUR BRAINS

THE

Nicholas Carr

AUTHOR OF THE BIG SWITCH

SHALLOWS

Technologies



thinking



For humans

**Brain evolution
Intellectual technologies
Neuroplasticity**

For developer

**Encode
Abstract
Associate**

Added value

**For teams
For users
For humanity**



For humans

Brain evolution
Intellectual technologies
Neuroplasticity

For developer

Encode
Abstract
Associate

Added value

For teams
For users
For humanity

-4K years



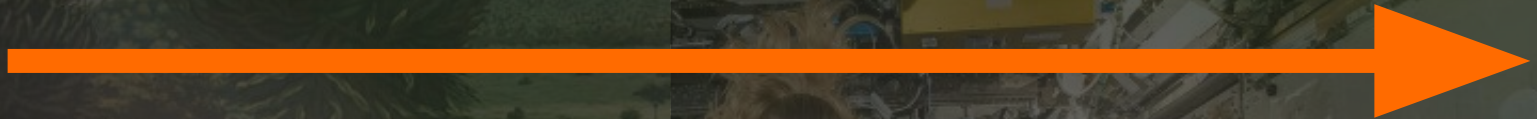
Now



Primitive Advanced civilization



Primitive Advanced civilization



Tools and technologies

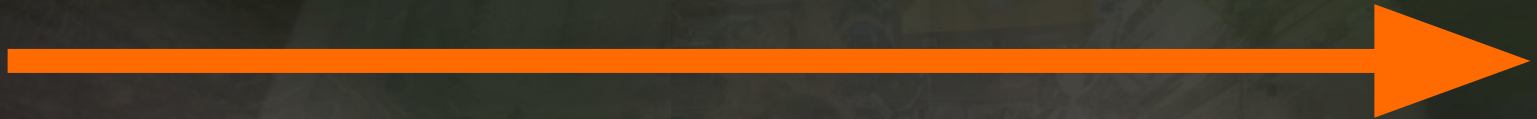




Visible

Tools and technologies

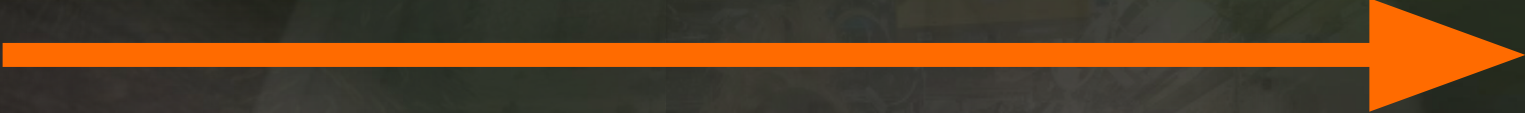




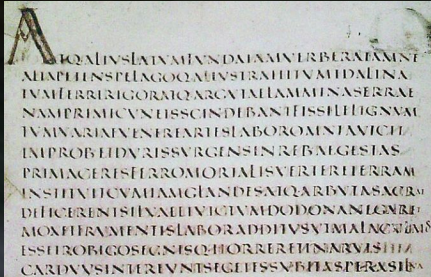
Invisible

Tools and technologies

THE Nicholas Carr
AUTHOR OF *THE BIG SWITCH*
SHALLOWS



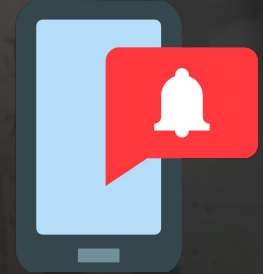
Intellectual technologies



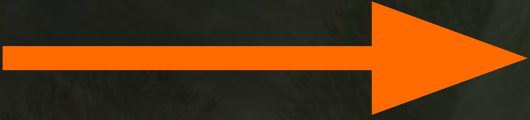
Spaces between words



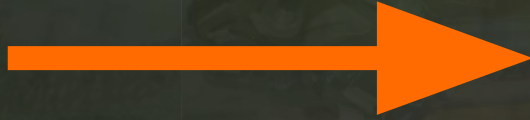
Ticking of the clock



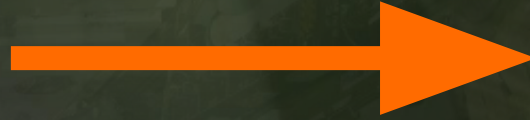
Multitasking



Encode

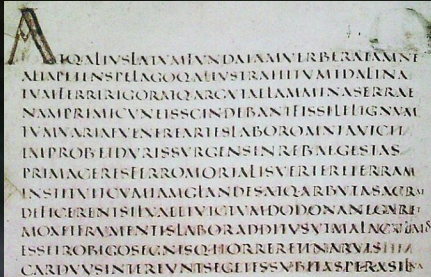


Abstract



Associate

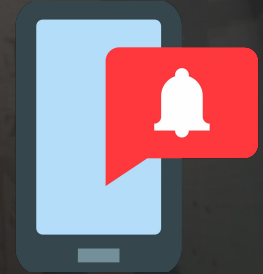
Intellectual technologies



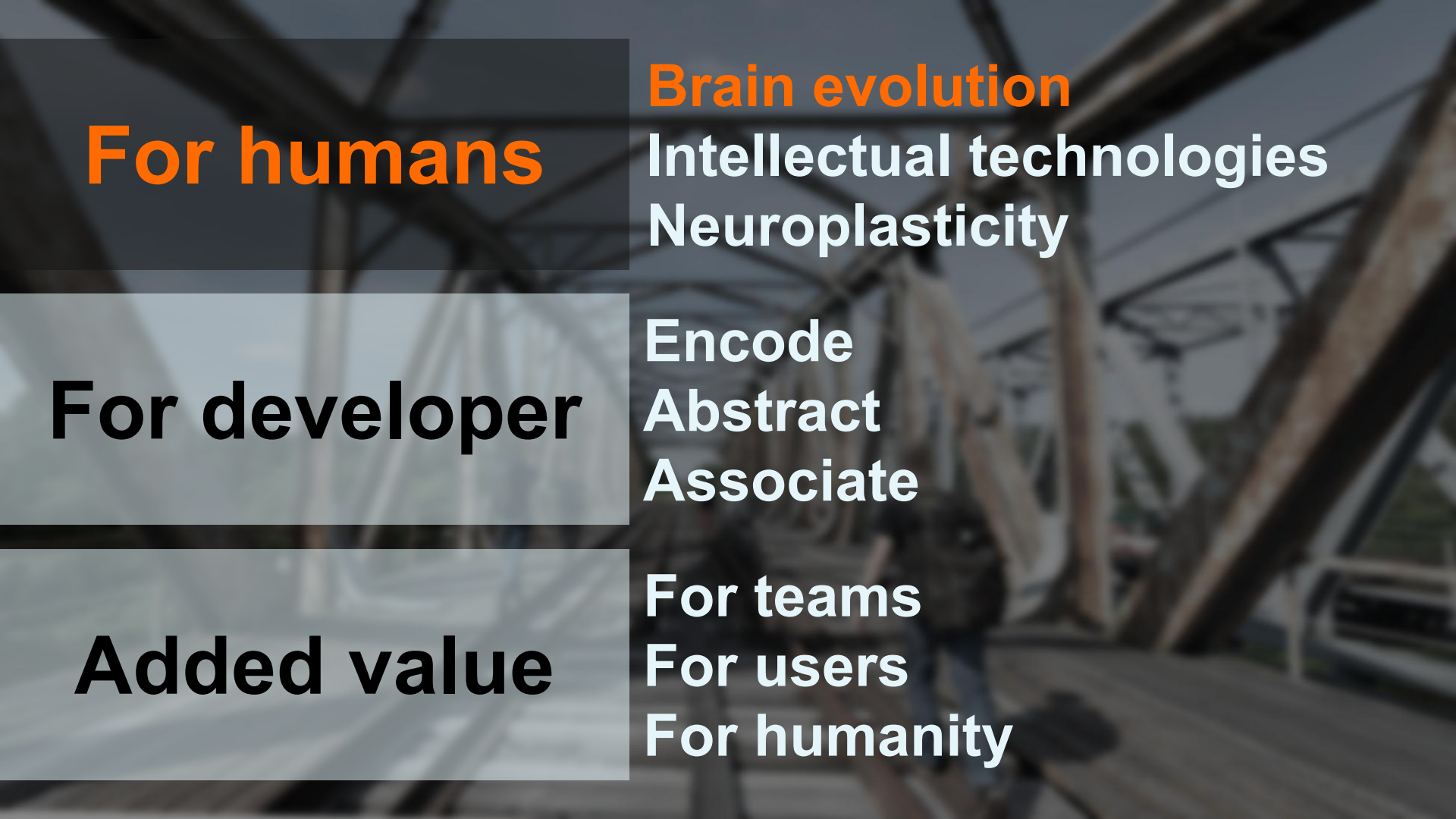
Spaces between words



Ticking of the clock



Multitasking



For humans

Brain evolution

Intellectual technologies

Neuroplasticity

For developer

Encode

Abstract

Associate

Added value

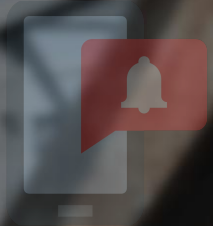
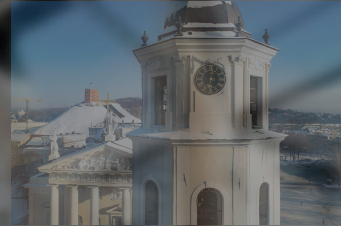
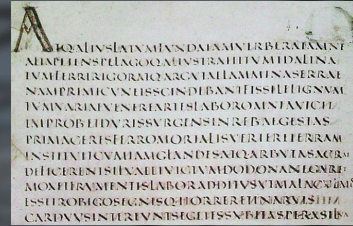
For teams

For users

For humanity

For humans

Brain evolution Intellectual technologies



Neuroplasticity

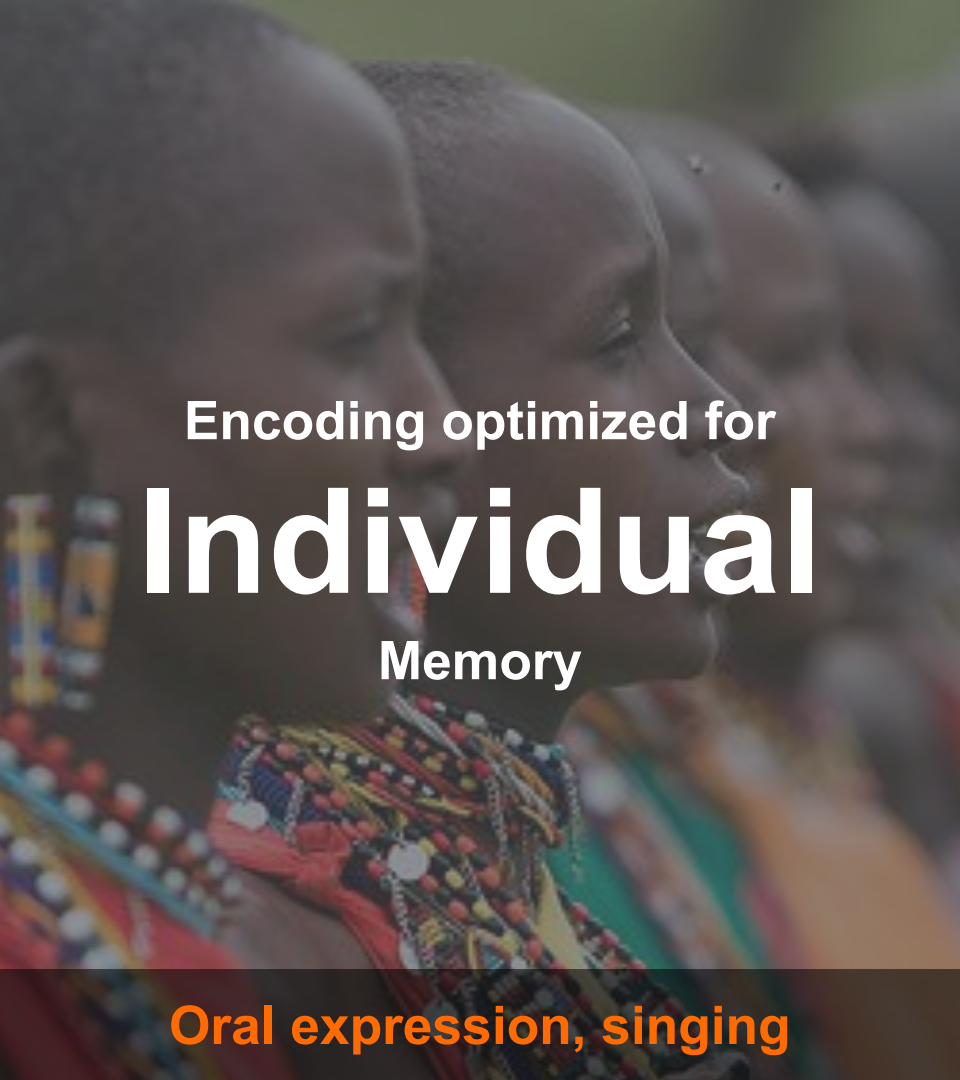
Encode, Abstract, Associate

For teams, users, humanity

Added value

Added value

THROUGH THE MILLENNIA OF MANS PRELITERATE HISTORY LANGUAGE EVOLVED TO
AID THE STORAGE OF COMPLEX INFORMATION IN INDIVIDUAL MEMORY AND TO
MAKE IT EASY TO EXCHANGE THAT INFORMATION WITH OTHERS **THROUGH** SPEECH THE
ORAL WORLD OF OUR DISTANT ANCESTORS MAY WELL HAVE HAD EMOTIONAL AND INTU-
ITIVE DEPTHS THAT WE CAN NO LONGER APPRECIATE. MCLUHAN BELIEVED THAT PE-
RELITERATE PEOPLE MUST HAVE ENJOYED A PARTICULARLY INTENSE SENSUOUS
INVOLVEMENT WITH THE WORLD WHEN WE LEARNED TO READ. HE ARGUED WE SUFFER
ED A CONSIDERABLE DETACHMENT FROM THE FEELINGS OF EMOTIONAL INVOLVEM-
ENT THAT A NONLITERATE MAN OR SOCIETY WOULD EXPERIENCE.⁵⁷ IT IS HARD FOR US
TO IMAGINE TODAY BUT NO SPACES SEPARATED THE WORDS IN EARLY WRITING. IN
THE BOOKS INKED BY SCRIBES WORDS RAN TOGETHER WITHOUT ANY BREAK ACROSS
EVERY LINE ONE EVERY PAGE IN WHAT SNOW REFERRED AS **SCRIPTURA CONTINUA**. THE
LACK OF WORD SEPARATION REFLECTED LANGUAGES ORIGINALLY IN SPEECH. THE LA-
CK OF WORKED SEPARATION COMBINED WITH THE ABSENCE OF WORD ORDER CONVEN-
TIONS PLACED AN EXTRA COGNITIVE BURDEN ON AN ANCIENT READER. SEXPLAINS
PAUL SAENGER IN SPACE BETWEEN WORDS HIS HISTORY OF THE SCRIBAL BOOK REA-
DING WAS LIKE WORKING OUT A PUZZLE.⁶¹



Encoding optimized for Individual Memory

Oral expression, singing

Internet Engineering Task Force (IETF)
Request for Comments: 6265
Obsoletes: 2965
Category: Standards Track
ISSN: 2070-1721

A. Barth
U.C. Berkeley
April 2011

HTTP State Management Mechanism

Abstract

This document defines the HTTP Cookie and Set-Cookie header fields. These header fields can be used by HTTP servers to store state (called cookies) at HTTP user agents, letting the servers maintain a stateful session over the mostly stateless HTTP protocol. Although cookies have many historical infelicities that degrade their security and privacy, the Cookie and Set-Cookie header fields are widely used on the Internet. This document obsoletes [RFC 2965](#).

Status of This Memo

This is an Internet Standards Track document.

This document is a product of the Internet Engineering Task Force (IETF). It represents the consensus of the IETF community. It has received public review and has been approved for publication by the Internet Engineering Task Force. Further information on this standard is available in Section 2 of RFC 5741.

Information about the current status of this document, any errata, and how to provide feedback on it may be obtained at <http://www.rfc-editor.org/info/rfc6265>.

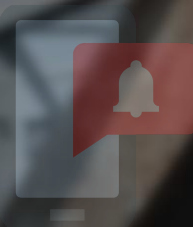
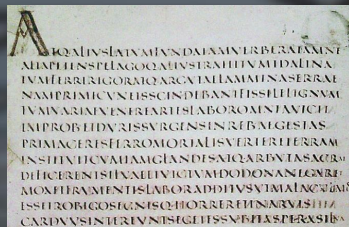
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For humans

Brain evolution Intellectual technologies



For developers

Neuroplasticity

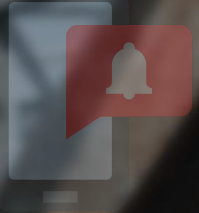
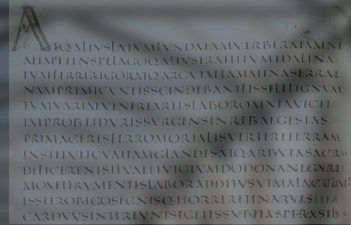
Encode, Abstract, Associate

Added value

For teams, users, humanity

For humans

Brain evolution Intellectual technologies



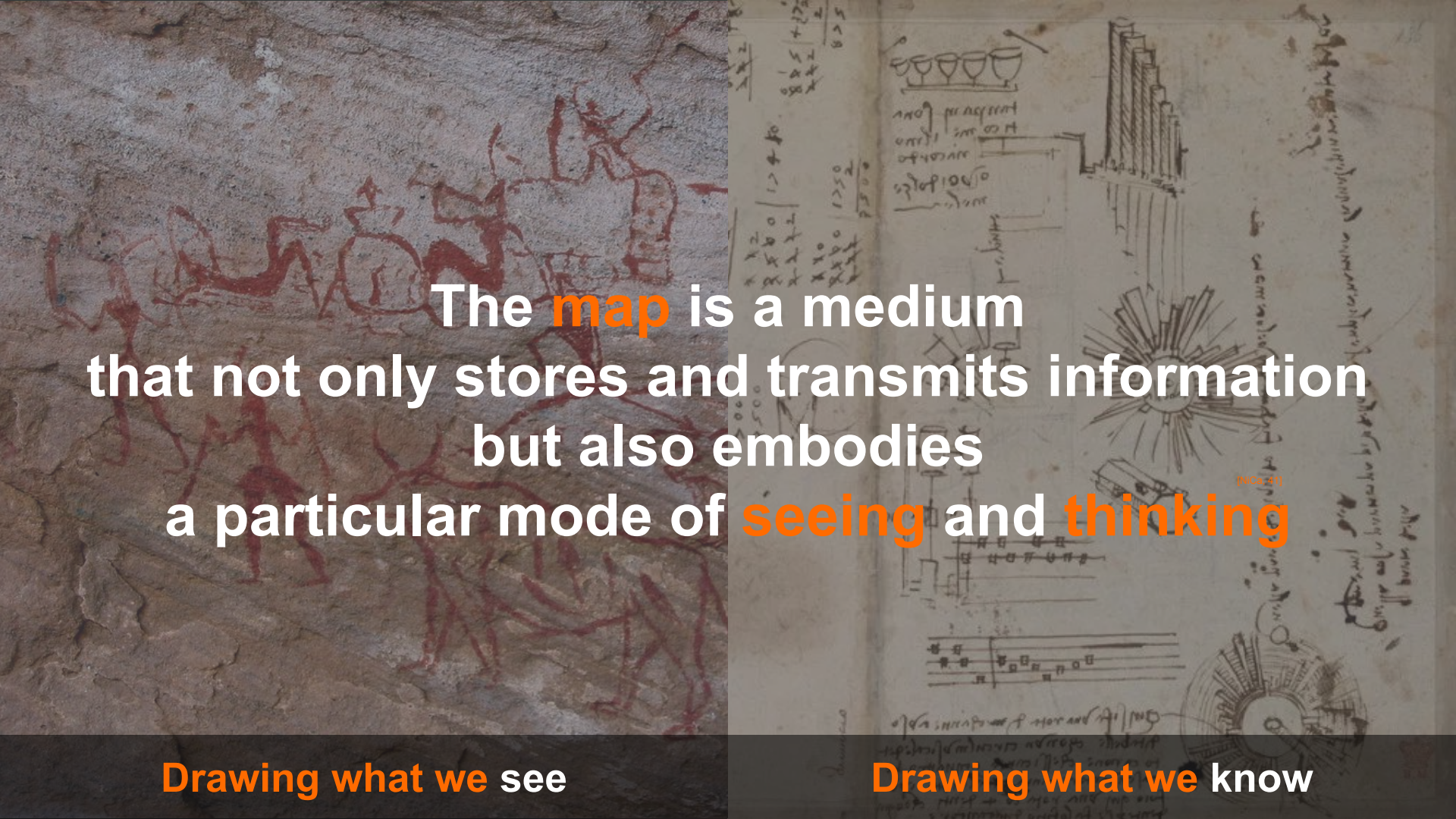
For developers

Neuroplasticity

Encode, Abstract, Associate

Added value

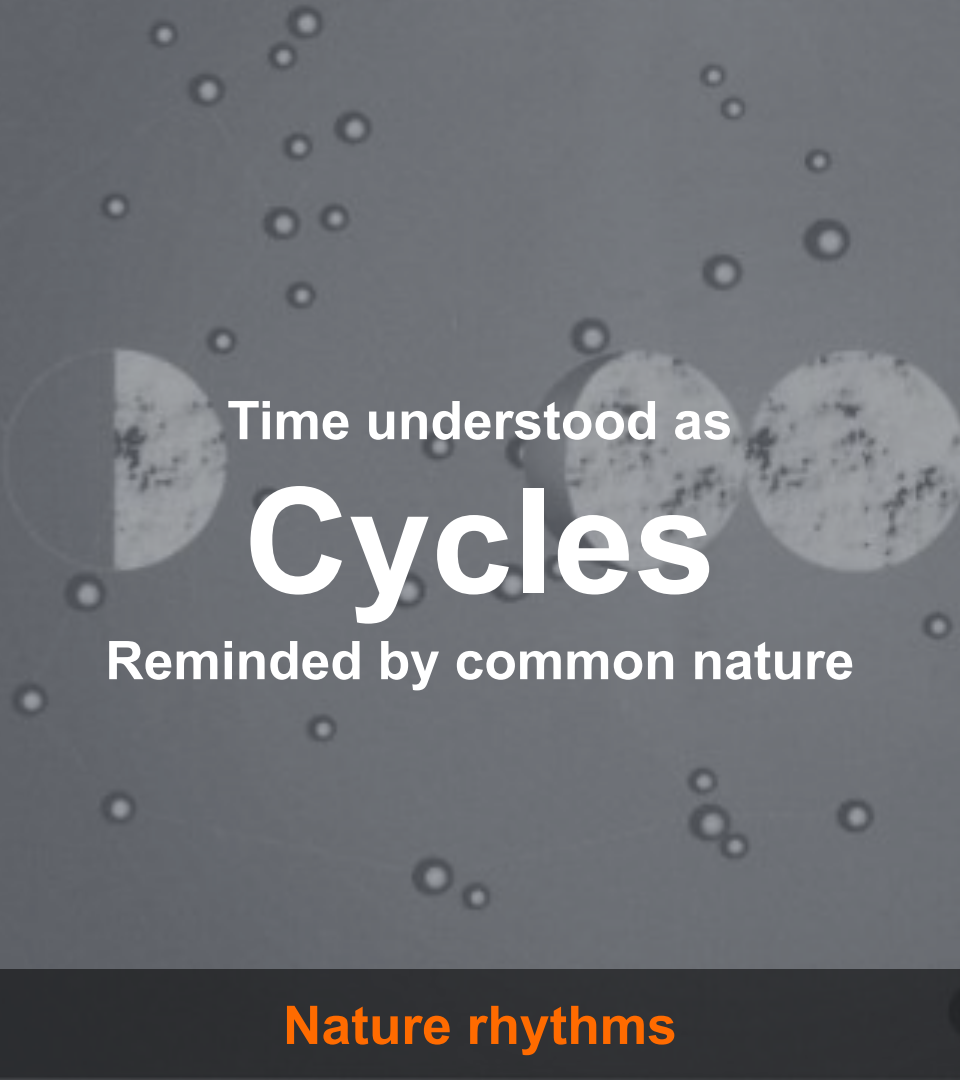
For teams, users, humanity



The **map** is a medium
that not only stores and transmits information
but also embodies
a particular mode of **seeing** and **thinking**

Drawing what we see

Drawing what we know

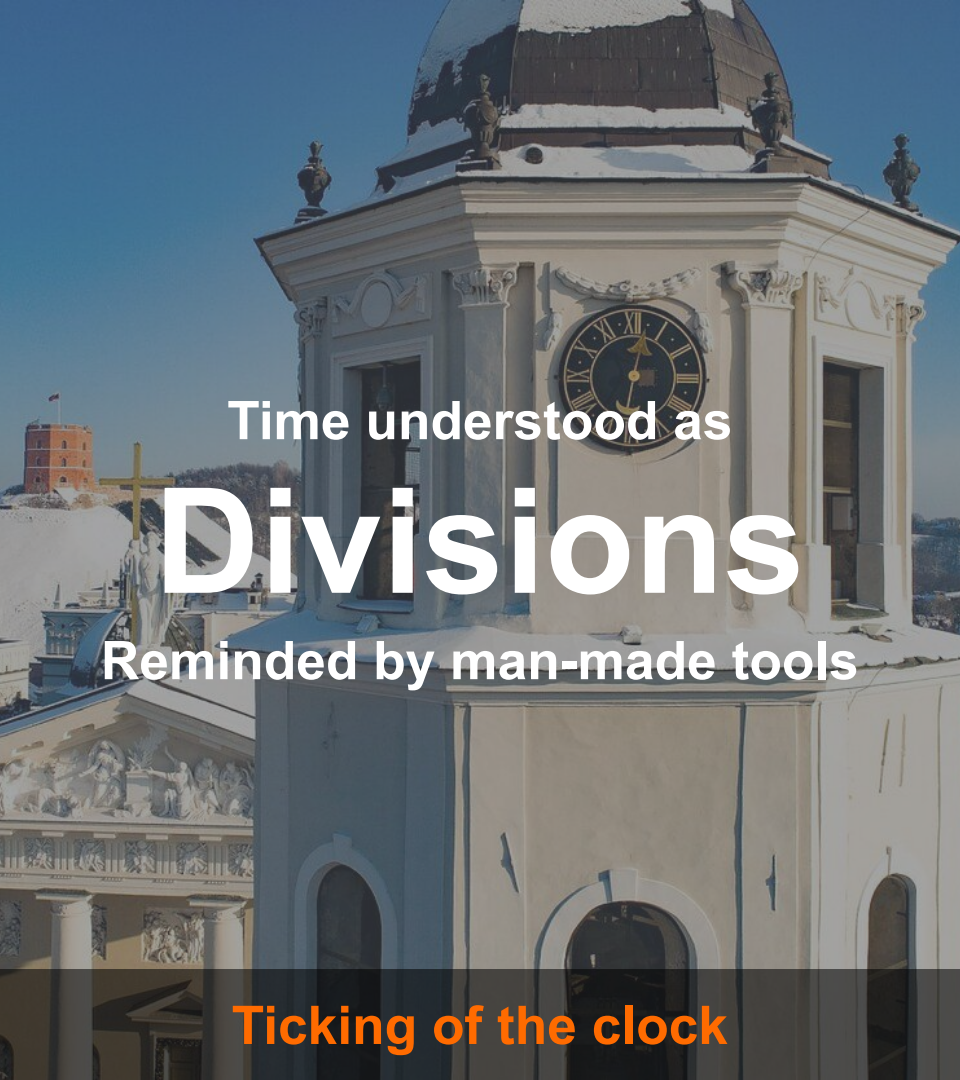


Time understood as

Cycles

Reminded by common nature

Nature rhythms



Time understood as

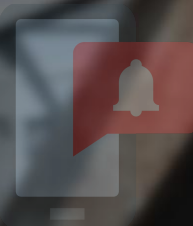
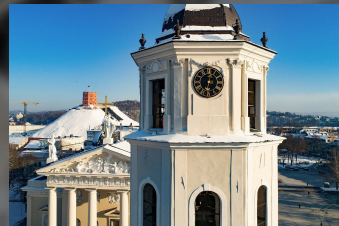
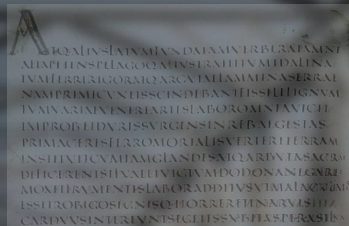
Divisions

Reminded by man-made tools

Ticking of the clock

For humans

Brain evolution Intellectual technologies



For developers

Neuroplasticity

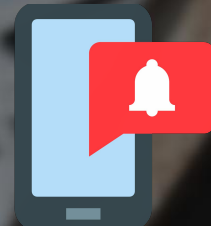
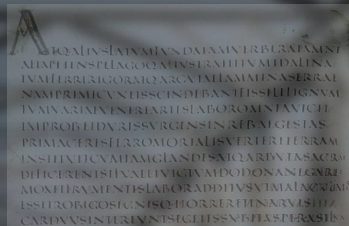
Encode, Abstract, Associate

Added value

For teams, users, humanity

For humans

Brain evolution Intellectual technologies



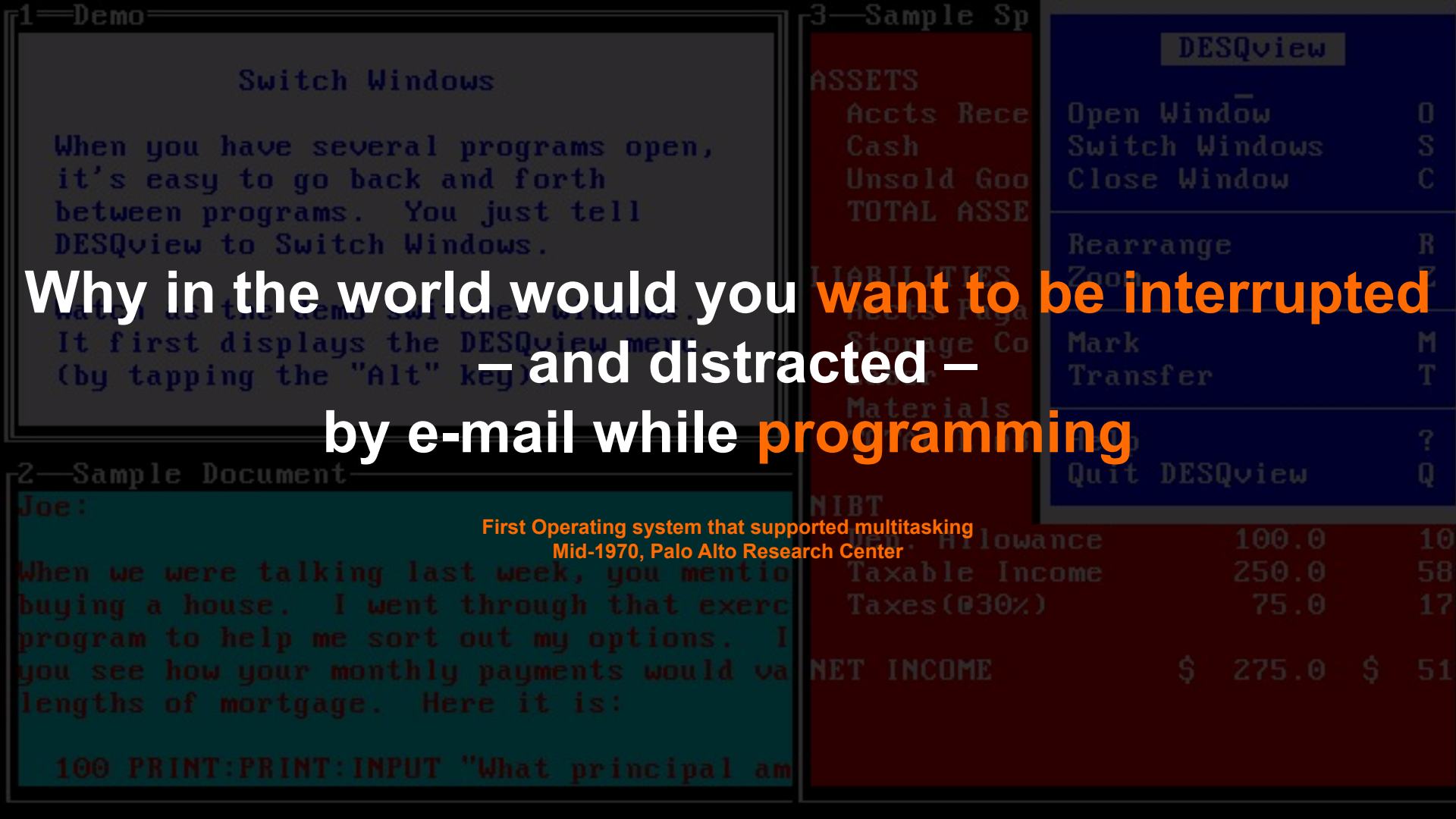
For developers

Neuroplasticity

Encode, Abstract, Associate

Added value

For teams, users, humanity



Switch Windows

When you have several programs open, it's easy to go back and forth between programs. You just tell DESQview to Switch Windows.

Why in the world would you want to be interrupted - and distracted - by e-mail while programming

ASSETS

Accts Rece
Cash
Unsold Goo
TOTAL ASSE

LIABILITIES

Accts Paya
Storage Co
Materials

NIBT

Allowance
Taxable Income
Taxes(@30%)

NET INCOME

DESQview

Open Window
Switch Windows
Close Window

Rearrange

Mark
Transfer

Quit DESQview

First Operating system that supported multitasking
Mid-1970, Palo Alto Research Center

100 PRINT:PRINT:INPUT "What principal am



Association optimized for

Memorizing

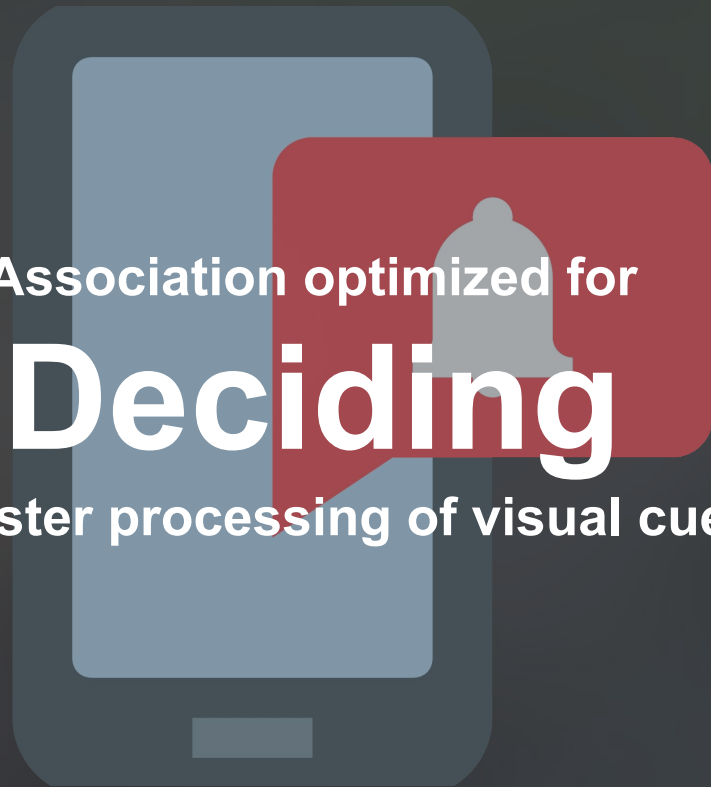
By limiting input senses and speed

Linear deep reading

Association optimized for

Deciding

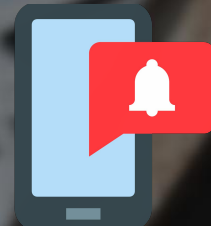
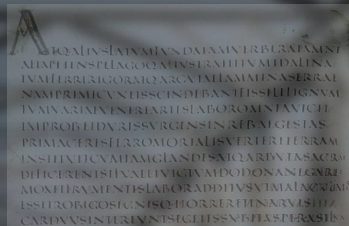
By faster processing of visual cues



Multitasking, Browsing

For humans

Brain evolution Intellectual technologies



For developers

Neuroplasticity

Encode, Abstract, Associate

Added value

For teams, users, humanity

For humans

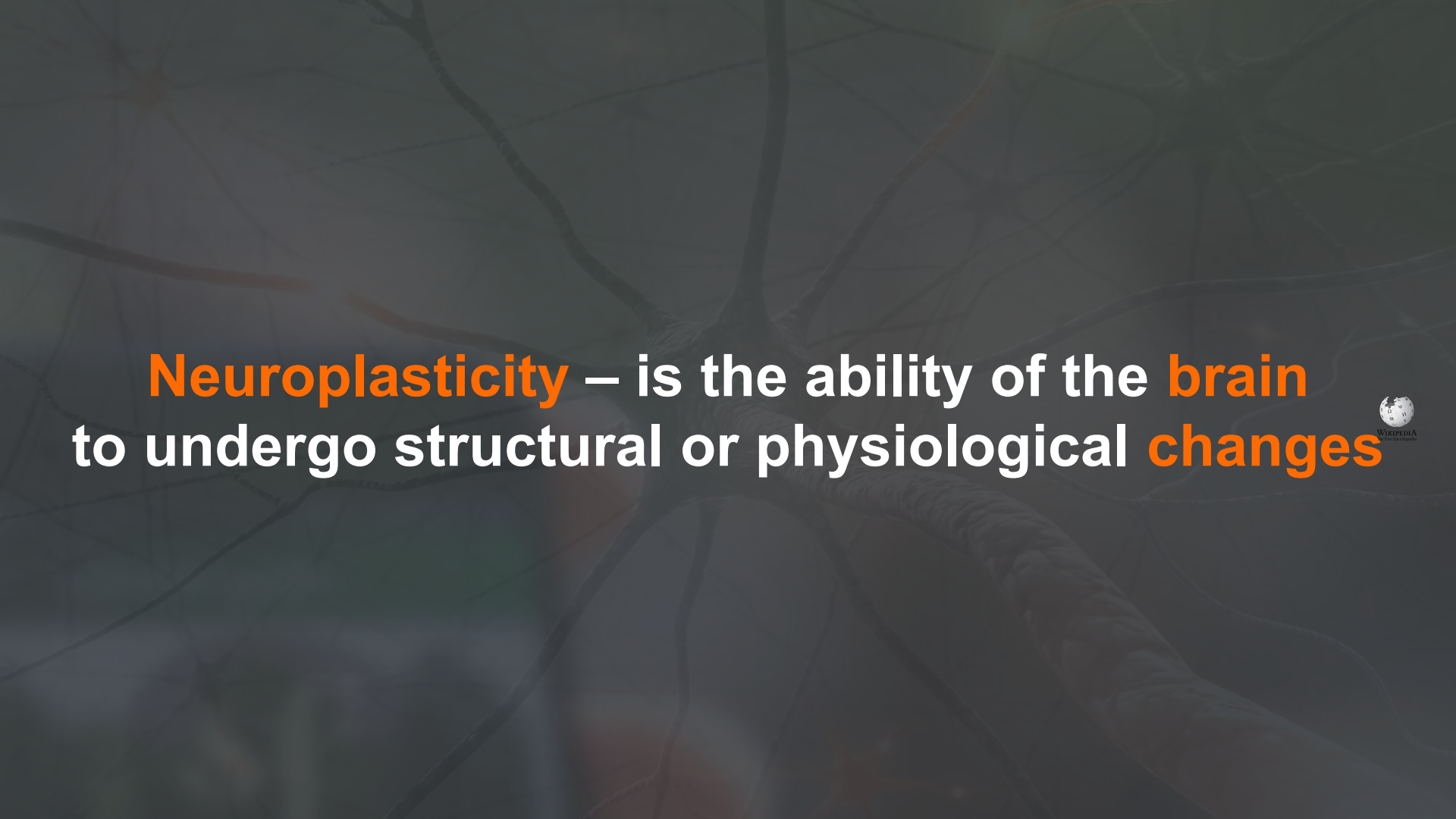
Brain evolution
Intellectual technologies
Neuroplasticity

For developer

Encode
Abstract
Associate

Added value

For teams
For users
For humanity

The background of the slide is a dark, grayscale micrograph of neural tissue, showing a complex network of branching processes, likely dendrites or axons, with some brighter, more defined structures.

Neuroplasticity – is the ability of the **brain** to undergo structural or physiological **changes**



WIKIPEDIA
The Free Encyclopedia

Not technology

Is technology

Neuroplasticity – is the ability of the **brain** to undergo structural or physiological **changes**

The best technology

A child learns to **talk**
without instructions

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Not technology Is technology

The best technology

The **Net** delivers precisely the kind of sensory and cognitive stimuli
– **repetitive, intensive, interactive, addictive** –
that have shown to result in strong and rapid alterations
In brain circuits and functions ^[NiCa, 116]

For humans

Brain evolution
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For users
For humanity



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For users
For humanity

Old web development

1994-1995

```
<html><head><title>Form Example</title></head>
<body><h1>My Example Form</h1>
<form action="form.phtml" method="POST">
Name: <input type="text" name="name">
Age: <input type="text" name="age">
<br><input type="submit">
</form>
<?if($name):?>
Hi <?echo $name?>, you are <?echo $age?> years old
<?endif?>
</body></html>
```

25 Years of PHP

Modern web development

```
<?php
declare(strict_types=1);

namespace Examples;

class ExampleClass
{
    public function doSomething(): void
    {
        print_r($this->filter());
    }

    private function cleanString(string $string, string $except): string
    {
        return str_replace($except, '', $string);
    }

    /**
     * @return array|string[]
     */
    private function filter(): array
    {
        $stringValues = [
            'foo',
            'bar',
        ];

        return array_filter(
            $stringValues,
            fn (string $value): string => $this->cleanString($value, 'b')
        );
    }
}
```

1994-1995

```
<html><head><title>Form Example</title></head>
<body><h1>My Example Form</h1>
<form action="form.phtml" method="POST">
Name: <input type="text" name="name">
Age: <input type="text" name="age">
<input type="submit">
</form>
<?php echo "No spam, please!" <?php echo "old"
</body></html>
```

Readable

Code as text book

```
<?php
```

```
declare(strict_types=1);
```

```
namespace Examples;
```

```
class ExampleClass
```

```
{
```

```
    public function doSomething(): void
```

```
    {
```

```
        print_r($this->filter());
```

```
    }
```

```
    private function cleanString(string $string, string $except): string
```

```
    {
```

```
        return str_replace($except, '', $string);
```

```
    }
```

```
    /**
```

```
     * @return array<string>
```

```
     */
```

```
    private function filter(): array
```

```
    {
```

```
        $stringValues = [
```

```
            'foo',
```

```
            'bar',
```

```
        ];
```

```
        return array_filter(
```

```
            $stringValues,
```

```
            fn (string $value): string => $this->cleanString($value, 'b')
```

```
        );
```

```
    }
```

```
}
```

Stepping

Code as visual boxes

25 Years of PHP



For humans

Brain evolution
Intellectual technologies
Neuroplasticity

For developer

Encode
Abstract
Associate

Added value

For teams
For users
For humanity



For humans

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Intellectual technologies
Neuroplasticity

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Common `programming paradigms` include:[\[1\]](#)[\[2\]](#)[\[3\]](#)

- **imperative** in which the programmer instructs the machine how to change its state,
 - **procedural** which groups instructions into procedures,
 - **object-oriented** which groups instructions together with the part of the state they operate on,
- **declarative** in which the programmer merely declares properties of the desired result, but not how to compute it
 - **functional** in which the desired result is declared as the value of a series of function applications,
 - **logic** in which the desired result is declared as the answer to a question about a system of facts and rules,
 - **mathematical** in which the desired result is declared as the solution of an optimization problem

```
1  # Be more productive
2
3  ```php
4  $a = count([]);
5  ```
6  ```javascript
7  let a = [].length;
8  ```
9  ```twig
10 {{ a|length }}
11 ```
12 ```go
13 a := len([]string{})
14 ```
```


Common `programming paradigms` include:^{[1][2][3]}

- **imperative** in which the programmer instructs the machine how to change its state,
 - **procedural** which groups instructions into procedures,
 - **object-oriented** which groups instructions together with the part of the state they operate on,
- **declarative** in which the programmer merely declares properties of the desired result, but not how to compute it
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 - **logic** in which the desired result is declared as the answer to a question about a system of facts and rules,
 - **mathematical** in which the desired result is declared as the solution of an optimization problem

Complex

Patterns to think easier

Simple

Characters to observe easier

```
1  # Be more productive
2
3  ```php
4  $a = count([]);
5  ```
6  ```javascript
7  let a = len([])
8  ```
9  ```twig
10 {{ a|length }}
11 ```
12 ```go
13 a := len([]string{})
14 ```
```

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Added value

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For users
For humanity


```
docker run -it -v $PWD:/data php:zts-alpine3.11 sh
```

```
/ # nano
```

```
sh: nano: not found
```

```
/ # vim
```

```
sh: vim: not found
```

```
/ # phpstorm
```

```
sh: phpstorm: not found
```

```
/ # bash
```

```
sh: bash: not found
```

```
/ # echo "works"
```

```
works
```

```
/ # # But I know PHP
```

```
/ # # I can (?) still
```

```
/ # # Code in PHP
```

File Edit View Navigate Code Refactor Run Tools VCS Window Help

demo src Controller Admin BlogController.php

BlogController.php x

```
48 * * 'admin_index' is a nice shortcut to th
49 * to create simpler links in the templat
50 * could move this annotation to any othe
51 * the route name and therefore, without
52 *
53 * @Route("/", methods="GET", name="admin_ino
54 * @Route("/", methods="GET", name="admin_pos
55 */
56 public function index(PostRepository $posts):
57 {
58     $authorPosts == $posts->findBy(['author'
59
60     return $this->render(view: 'admin/blog/ind
61 }
62
63 /** Creates a new Post entity. ...*/
72 public function new(Request $request): Respon
73 {
```

El npm

2: Git

Terminal

6: TODO

Externally added files can be added to Git // View Files // Always Add // Don't Ask Again (12 minutes ago)

Youself

In mind compilation

From others

Depend on tools/peers to help

```
demo - BlogController.php
File Edit View Navigate Code Refactor Run Tools VCS Window Help
demo src Controller Admin BlogController.php
BlogController.php
48 * * 'admin_index' is a nice shortcut to th
49 * to create simpler links in the templ
50 * could move this annotation to any othe
51 * the route name and therefore, without
52 *
53 * @Route("/", methods="GET", name="admin_in
54 * @Route("/", methods="GET", name="admin_pos
55 *
56 * public function index(Request $request): Response
57 {
58     // Quite interesting to see how to use 'author'
59
60     return $this->render(view: 'admin/blog/index', context: ['author' => $this->getAuthor()]);
61 }
62
63 /** Creates a new Post entity. ...*/
72 public function new(Request $request): Response
73 {
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75 }
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For humans

Brain evolution
Intellectual technologies
Neuroplasticity

For developer

Encode
Abstract
Associate

Added value

For teams
For users
For humanity



For humans

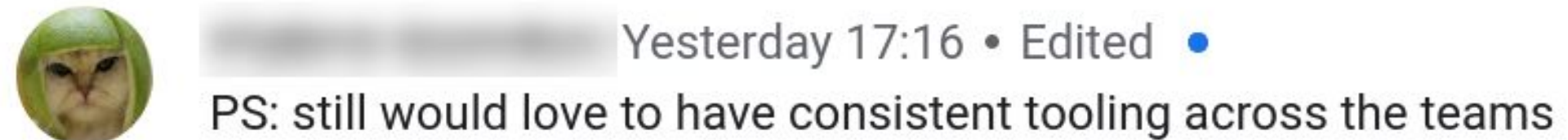
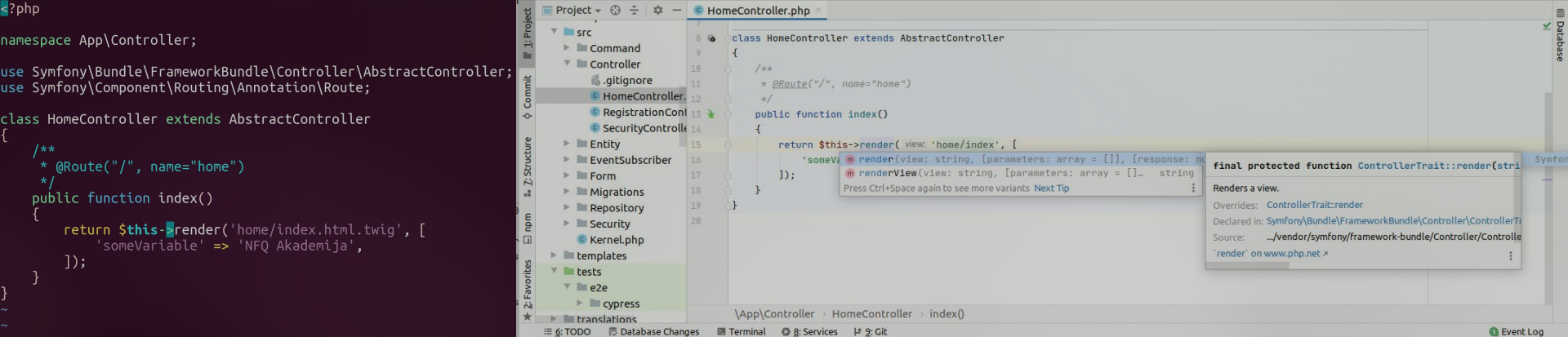
Brain evolution
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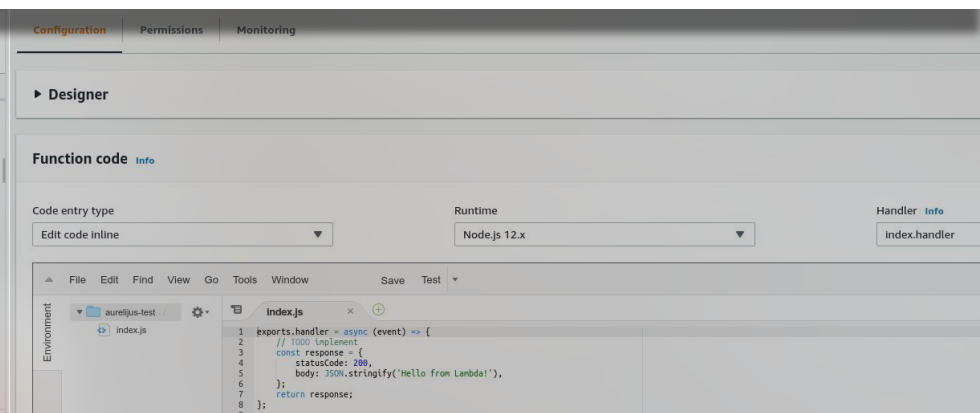
Added value

For teams
For users
For humanity



fx =IFNA(1-MAX(QUERY(IMPORTRANGE('...';"select Col11 WHERE Col1=2020 AND Col2='&T7&'";-1)))

	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
14	Green	%	%	%											
15	Green	%							%	90%					
16	Green	%													
17	Green														
18	Red														
21															





For humans

Brain evolution
Intellectual technologies
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Encode
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For developer

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Associate

Added value

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```
$user = (new FTUserBuilder(a: 'abcdef'))  
    ->bySpeedOfInteraction()  
    ->build();
```

Category	Description
Objective	Make a Smartwatch
Key Result	
Key Initiative	
Key Result	
Key Initiative	Creating a self-service A/B testing solution
Key Initiative	Create a concept for a business-metric based

```
if ($client->variation(variation: "your.flag.key", $user)) {
```

```
    // application code to show the feature
```

For humans

Brain evolution
Intellectual technologies
Neuroplasticity

For developer

Encode
Abstract
Associate

Added value

For teams
For users
For humanity



AIR FORCE
ASSOCIATION

FORC
CIAT

achieve intellectual property protection is by **innovating** fast enough



For humans

Brain evolution
Intellectual technologies
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For developer

Encode
Abstract
Associate

Added value

For teams
For users
For humanity



For humans

**Brain evolution
Intellectual technologies
Neuroplasticity**

For developer

**Encode
Abstract
Associate**

Added value

**For teams
For users
For humanity**

Technologies and thinking

Brain evolution
Intellectual technologies
Neuroplasticity
Encode
Abstract
Associate
For teams
For users
For humanity
For humans
For developers
Added value

If your mind just bowed,
I hope it is for the sake of

Rewiring your brain

(and thinking differently)

If your mind just bowed,
I hope it is for the sake of

Rewiring your brain

(and thinking differently)

E.g. more can bring better,
but limiting can bring different

Technologies changing how we think

If your mind just bowed,
I hope it is for the sake of

Discussion?

(and thinking differently)

E.g. more can bring better,
but limiting can bring different

Aurelijus Banelis

