

# O Ecossistema Web

Um review da maior plataforma universal de desenvolvimento.

*@fernahh*

@fernahh

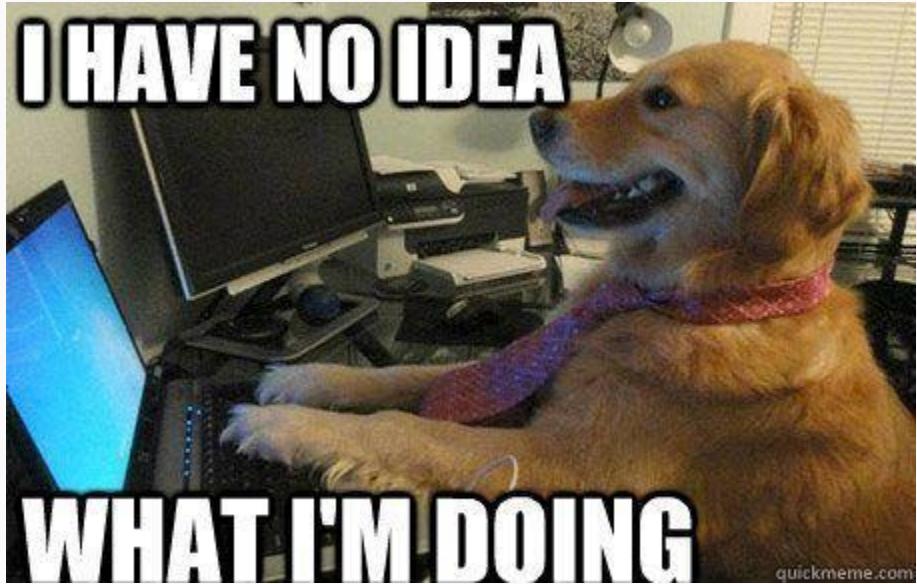
fernahh.com

# ContaAzul

[contaazul.com/vagas](http://contaazul.com/vagas)

# 2011

Meu primeiro emprego como desenvolvedor foi em uma agência de comunicação, onde tinha um “*setor de web*”.



quickmeme.com

# A web como plataforma

*Uma das maneiras mais fáceis de se aprender a programar.*

# 1. Um arquivo HTML

1. Um arquivo HTML
2. Um browser

1. Um arquivo HTML
2. Um browser

*Zero downloads. Zero instalações. Zero configurações.*

```
<!DOCTYPE html>
<html lang="pt-br">
<head>
  <meta charset="UTF-8">
  <title>Hello, world!</title>
  <style>
    h1 {
      font-family: sans-serif;
    }
  </style>
</head>
<body>
  <div id="root"></div>

  <script type="text/javascript">
    const render = (el, markup) => el.innerHTML = markup

    const rootElement = document.getElementById('root')
    const headingElement = '<h1>Hello, World!</h1>'

    render(rootElement, headingElement)
  </script>
</body>
</html>
```

```
<!DOCTYPE html>
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  </script>
</body>
</html>
```

HTML é uma das melhores linguagens para criar conteúdo.

*É acessível, expressiva e simples.*

```
<!DOCTYPE html>
<html lang="pt-br">
<head>
  <meta charset="UTF-8">
  <title>Hello, world!</title>
  <style>
    h1 {
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    render(rootElement, headingElement)
  </script>
</body>
</html>
```

O CSS, de longe, é uma das *melhores maneiras* de criar layouts ricos.

```
<!DOCTYPE html>
<html lang="pt-br">
<head>
  <meta charset="UTF-8">
  <title>Hello, world!</title>
  <style>
    h1 {
      font-family: sans-serif;
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    render(rootElement, headingElement)
  </script>
</body>
</html>
```

O JavaScript é a linguagem *mais popular do mundo*. Nos permite criar aplicações ricas de grande valor aos usuários.

Desktop

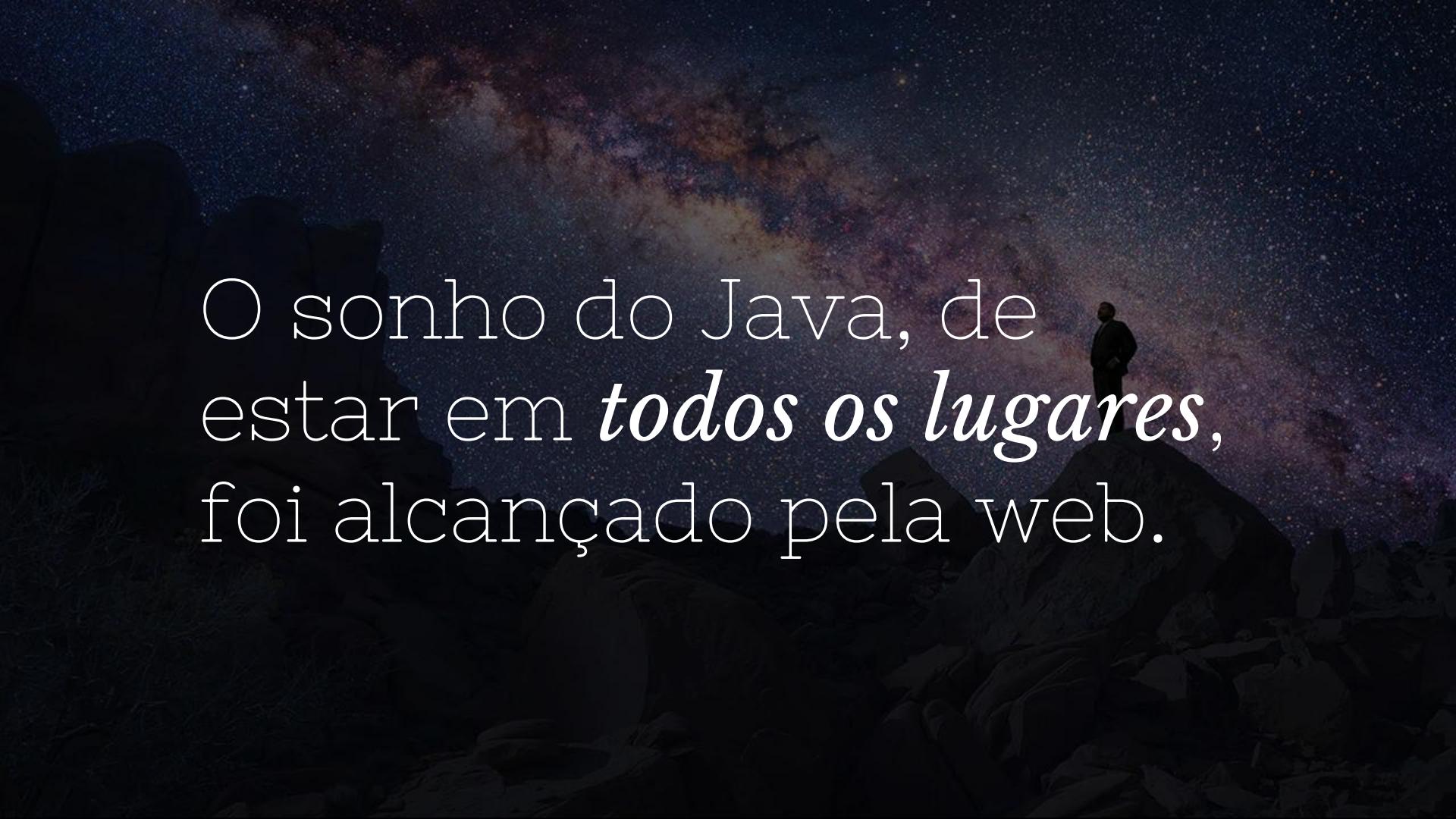
Celulares

Tablets

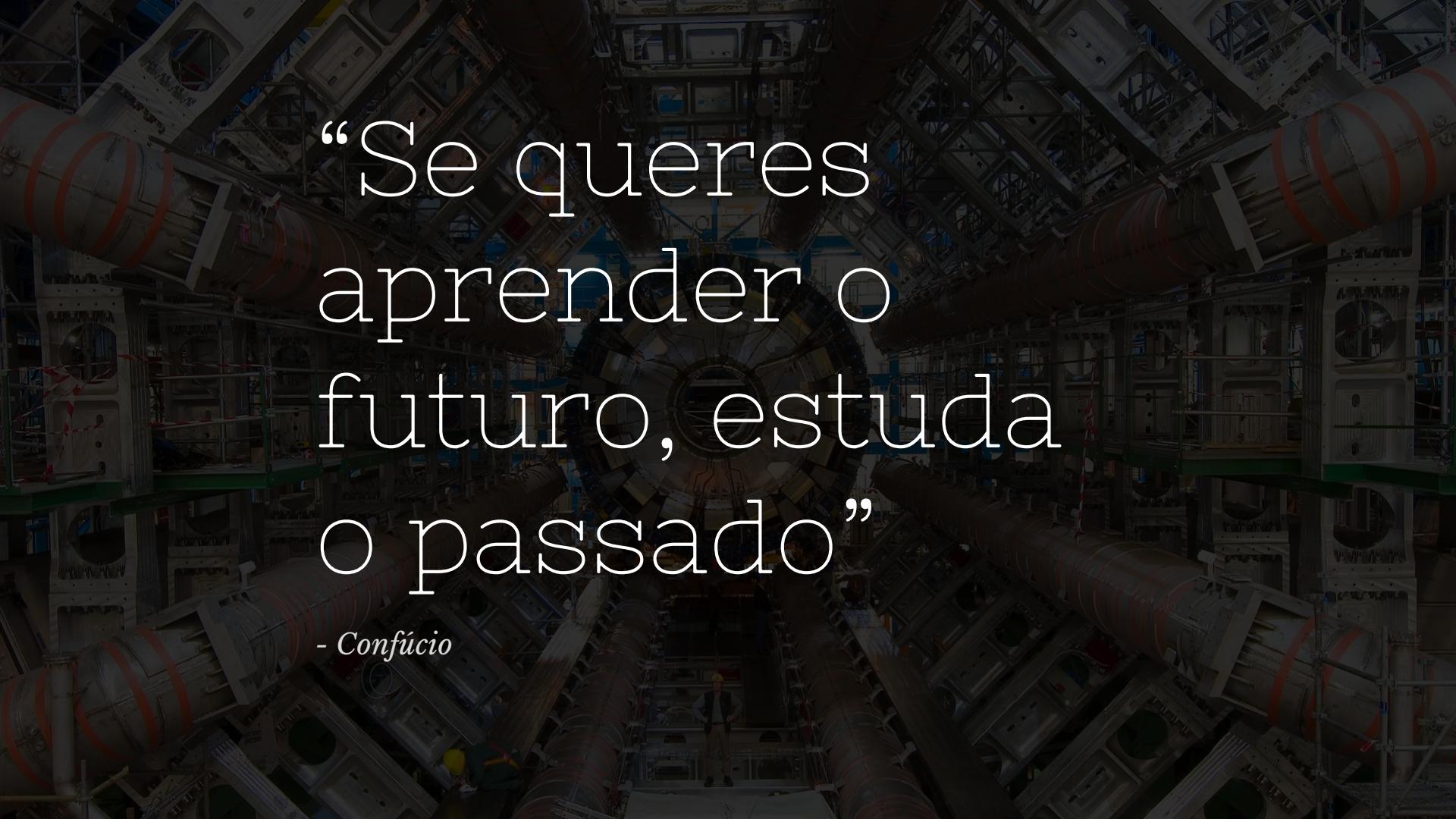
Smart TVs

Video games

...

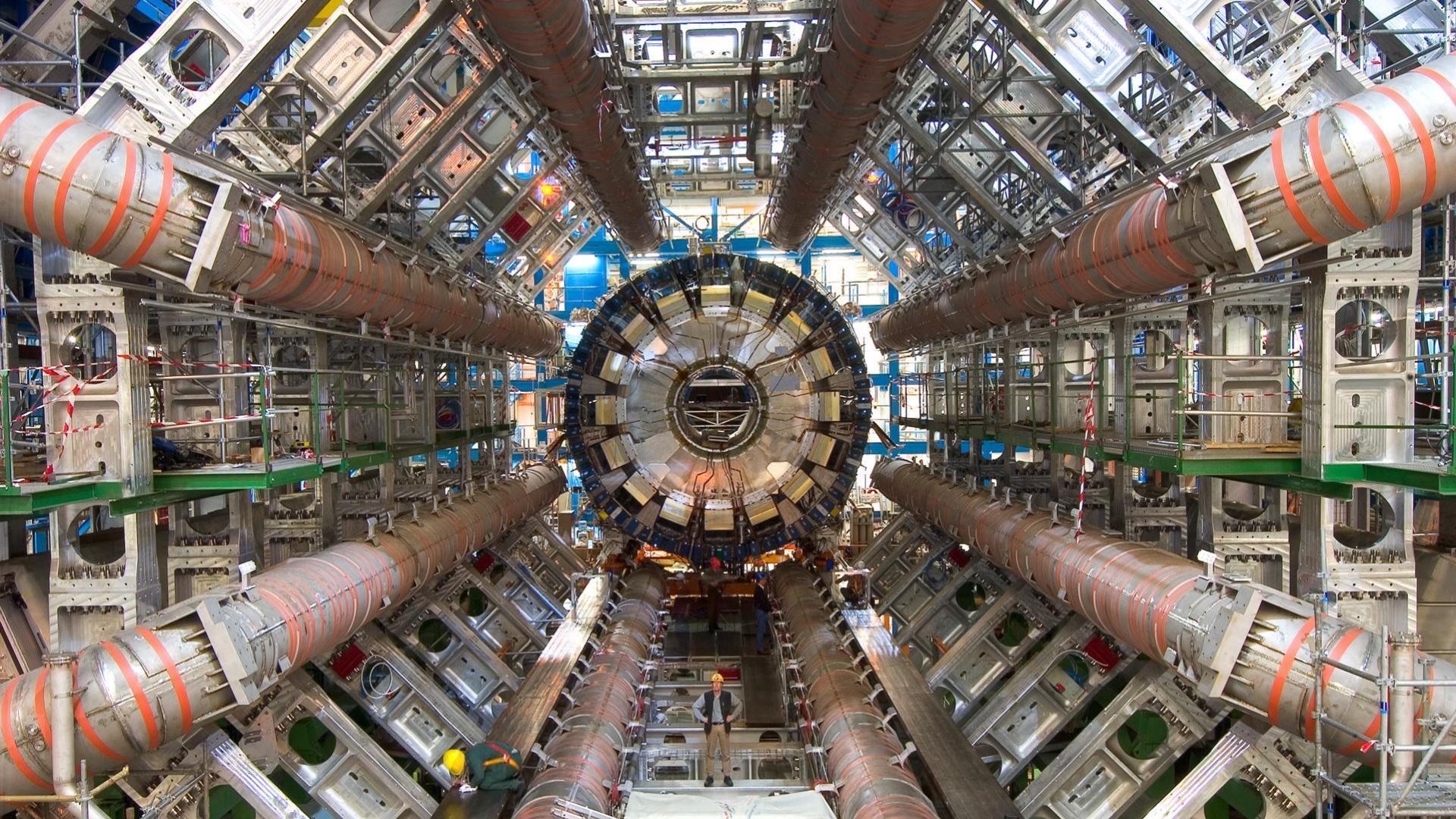
The background of the image is a dark, star-filled space with a visible galaxy and nebula. In the foreground, there is a dark silhouette of a person standing on a rocky cliff edge, looking out over the vast expanse.

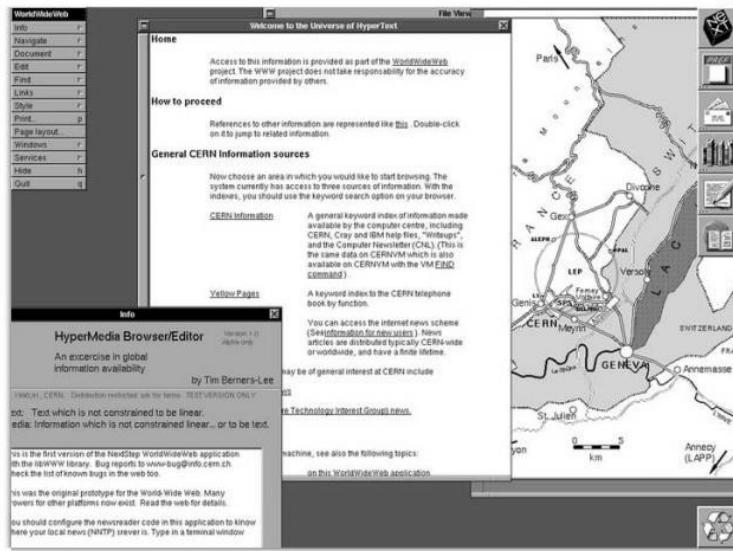
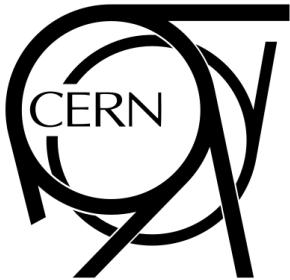
O sonho do Java, de  
estar em *todos os lugares*,  
foi alcançado pela web.



“Se queres  
aprender o  
futuro, estuda  
o passado”

- Confúcio



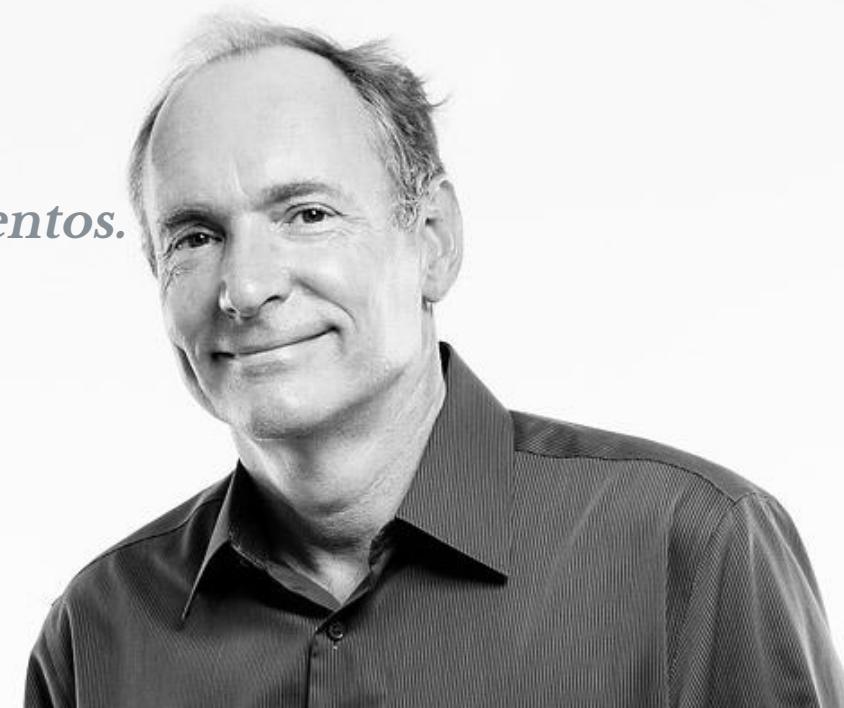


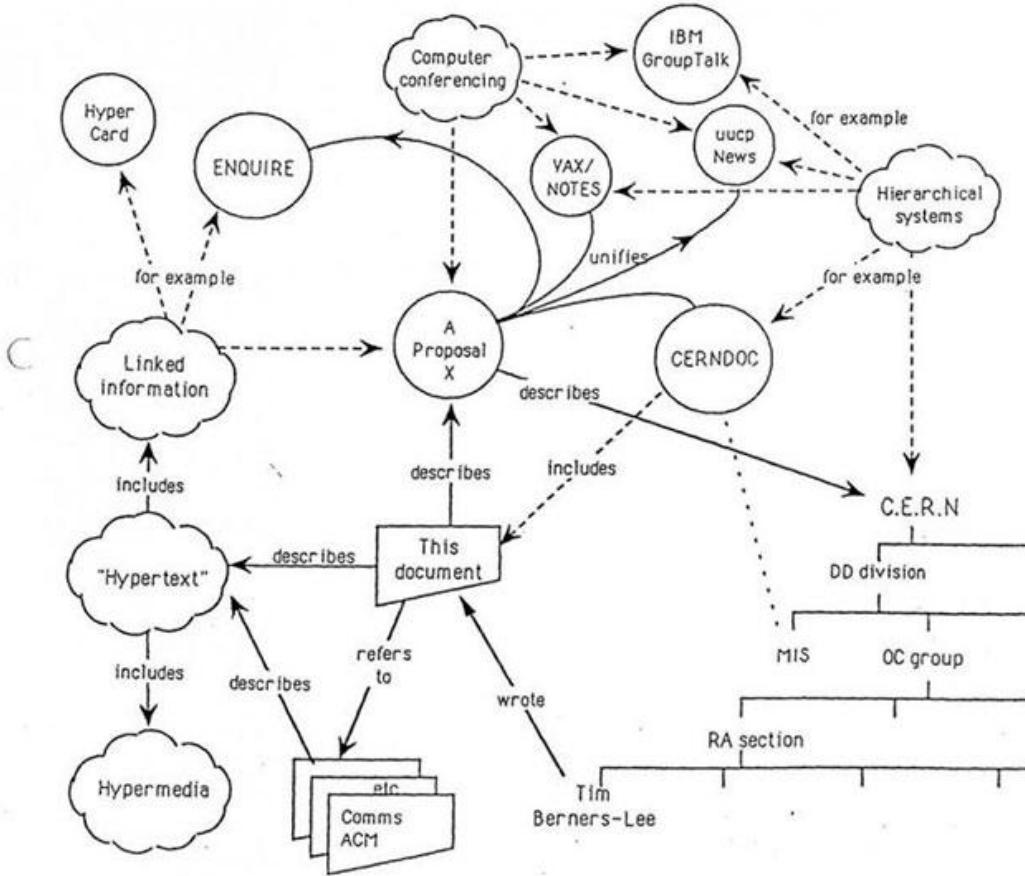
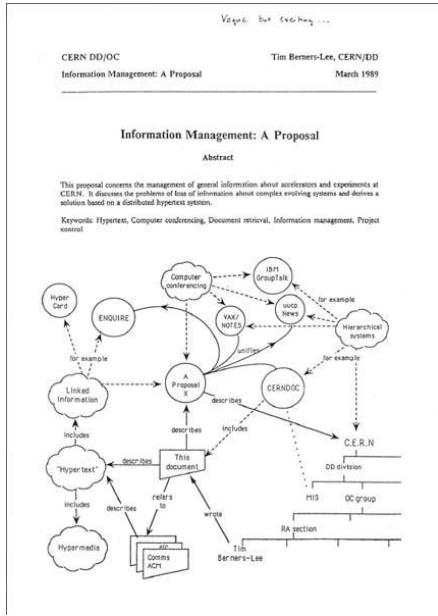
<https://home.cern/topics/birth-web>

Sir Tim Berners-Lee

Criou a web em 1990.

O objetivo? *Compartilhar documentos.*

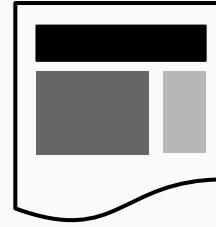




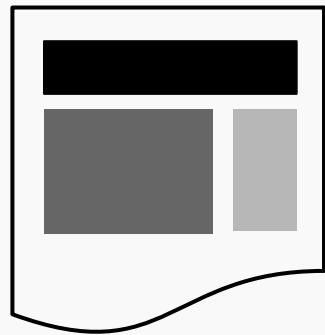
A cada 2 dias, em 2010,  
nós criamos a *mesma*  
*quantidade de informação*  
criada até 2003!

# Documentos

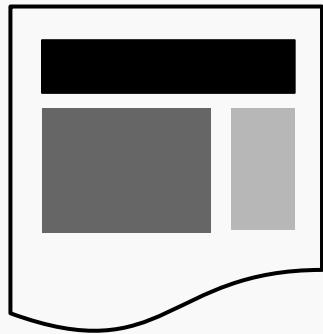
*Grupo de páginas que seguem o mesmo padrão de comportamento e estilo.*



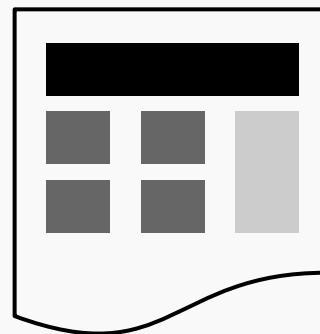
/home



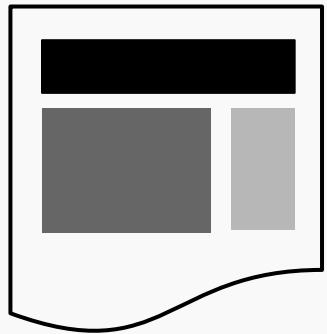
/home



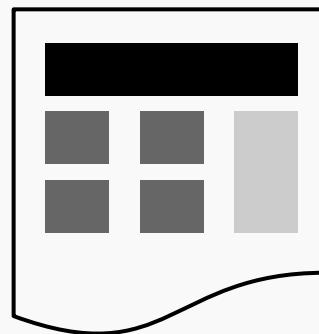
/products



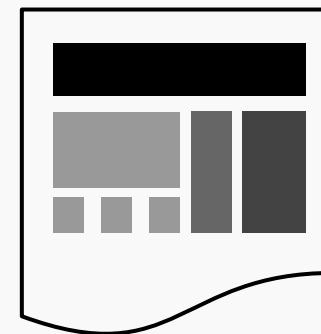
/home



/products

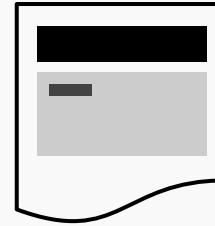


/product/1

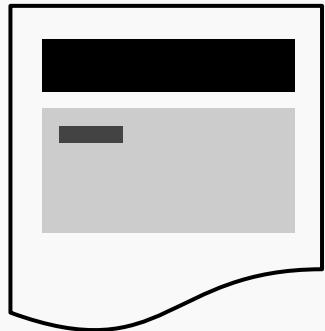


# Aplicações

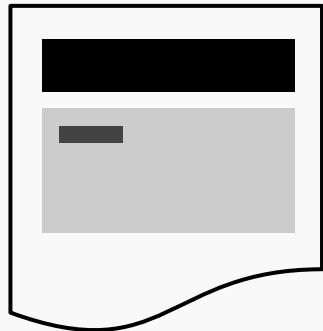
Ao invés de várias páginas, é apenas uma com *estados diferentes*.



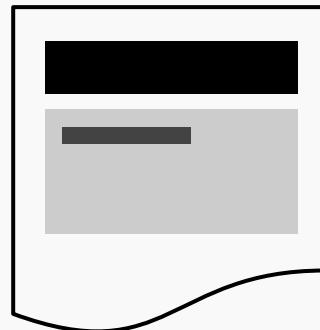
/signup



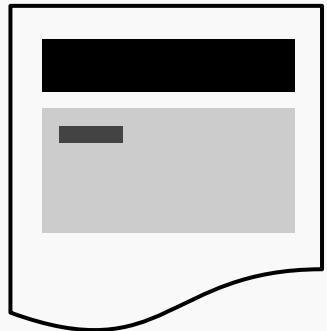
/signup



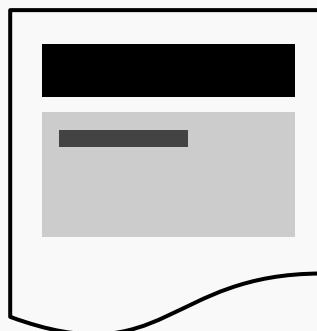
/step/1



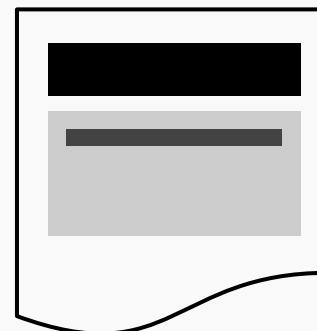
/signup



/step/1



/step/2



# 1993, 1994 e 1995

Surgimento do CSS e JavaScript. Porém, as tecnologias web nasceram sem especificação. Cada browser tinha a sua *implementação do HTML*.

# 2001

Apesar de ter suporte, a web quase não tinha imagens. A maioria dos portais tinham apenas imagens e gifs.



# A era dos plugins

Para assistir um vídeo ou conteúdo interativo na web, era necessário usar plugins de *tecnologias proprietárias*.

Adobe Flash

Microsoft Silverlight

Adobe Shockwave Player

Applet Java

RealPlayer

# WHATWG

Fundado por membros da *Apple, Mozilla e Opera*, com objetivo de criar uma nova direção para o HTML.

O *HTML5* é mais do que uma especificação. É um conjunto de tecnologias abertas.

Semântica

Storage

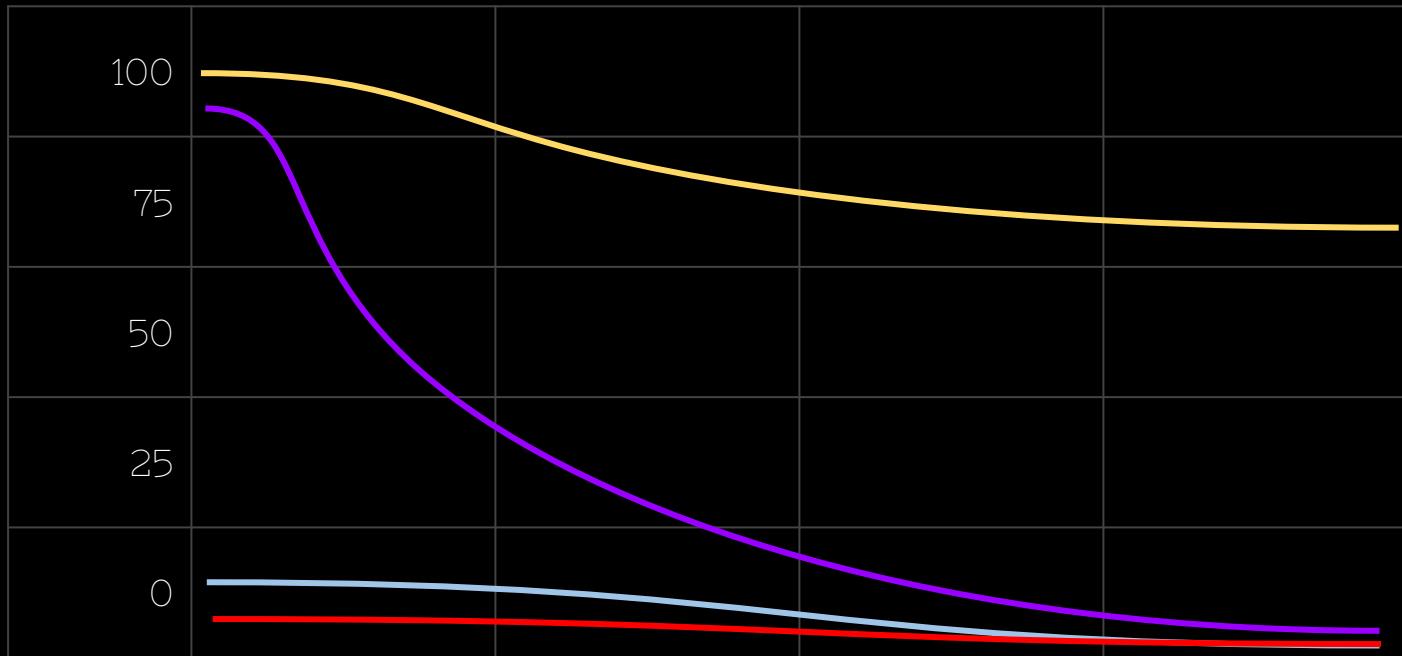
<audio>

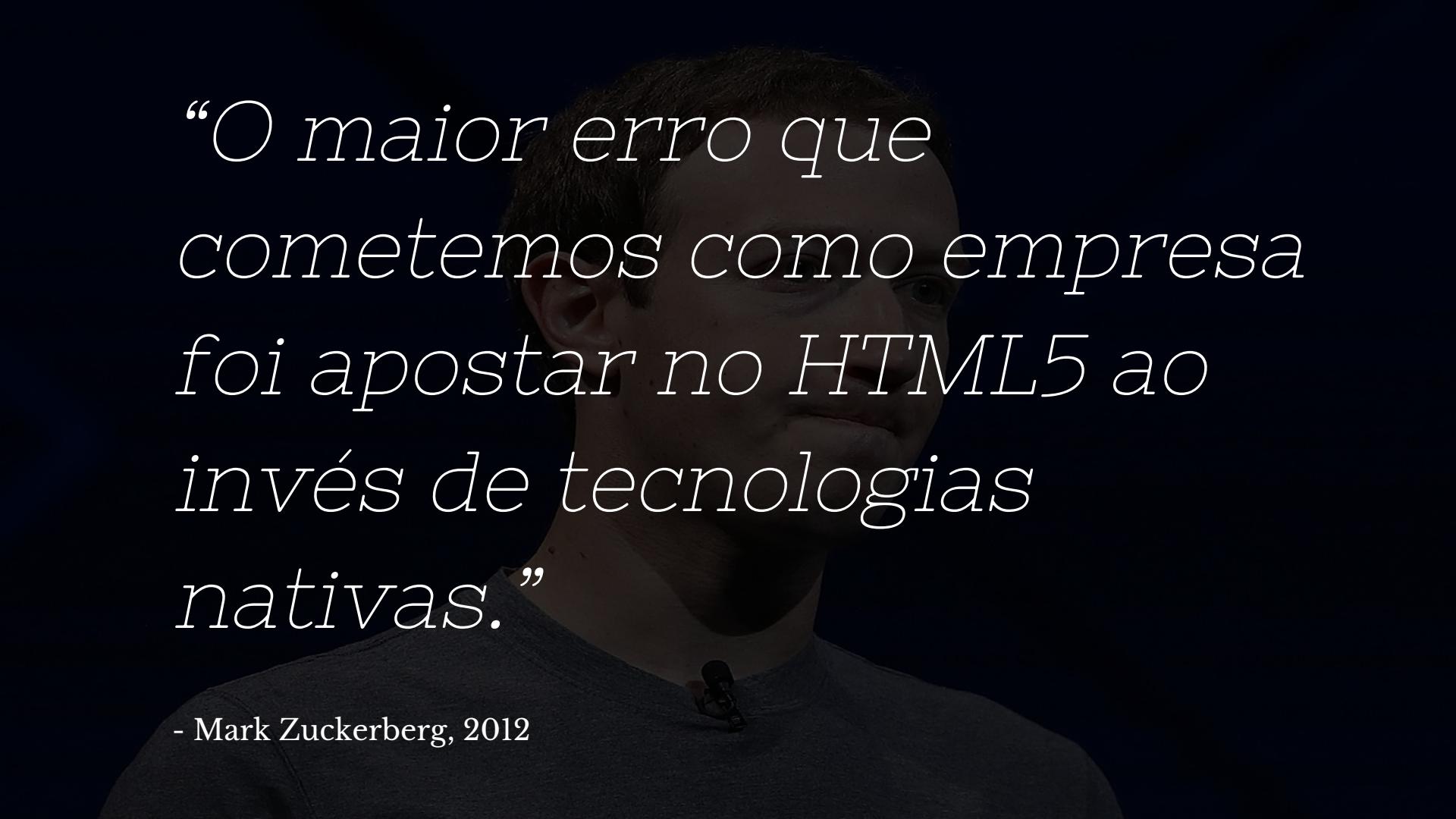
<video>

Geolocation

...

- Javascript
- Flash
- Silverlight
- Applet



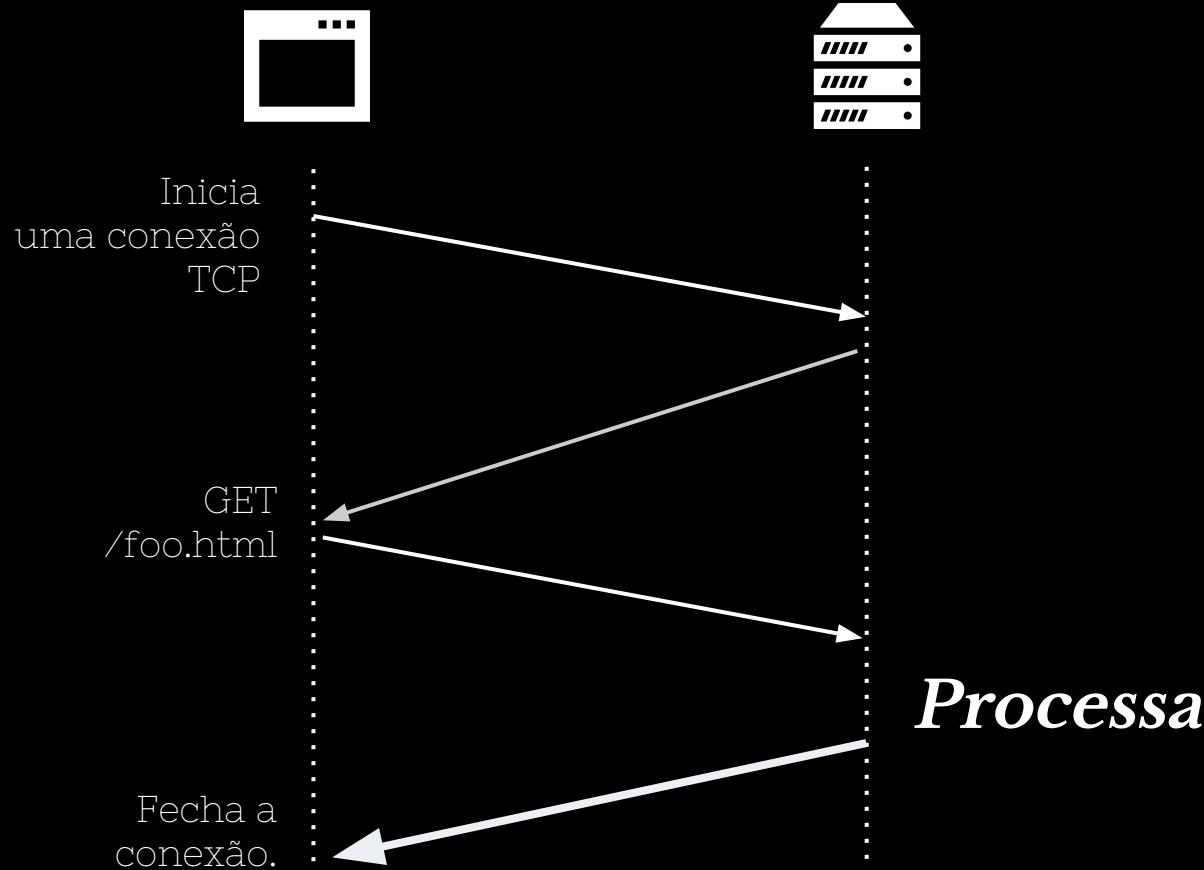
A dark, close-up portrait of Mark Zuckerberg. He is looking slightly to the right of the camera with a thoughtful expression. His hair is dark and messy, and he appears to be wearing a dark t-shirt. The lighting is low, creating strong shadows on one side of his face.

*“O maior erro que cometemos como empresa foi apostar no HTML5 ao invés de tecnologias nativas.”*

- Mark Zuckerberg, 2012

# HTTP

Muitos dos *approaches* criados e usados na web, são para contornar problemas deste protocolo.



# World Wide Web

The WorldWideWeb (W3) is a wide-area [hypermedia](#) information retrieval initiative aiming to give universal access to a large universe of documents.

Everything there is online about W3 is linked directly or indirectly to this document, including an [executive summary](#) of the project, [Mailing lists](#), [Policy](#), November's [W3 news](#), [Frequently Asked Questions](#).

## What's out there?

Pointers to the world's online information, [subjects](#), [W3 servers](#), etc.

## Help

on the browser you are using

## Software Products

A list of W3 project components and their current state. (e.g. [Line Mode](#), X11 [Viola](#), [NeXTStep](#), [Servers](#), [Tools](#), [Mail robot](#), [Library](#))

## Technical

Details of protocols, formats, program internals etc

## Bibliography

Paper documentation on W3 and references.

## People

A list of some people involved in the project.

## History

A summary of the history of the project.

## How can I help ?

If you would like to support the web..

## Getting code

Getting the code by [anonymous FTP](#), etc.

<http://bit.ly/19uElk0>

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on the browser you are using

Software

	Inspector	Console	Debugger	Style Editor	Performance	Network							
Technique	✓ Method	File	Domain	Type	Size	0 ms	640 ms	1,28 s					
Bibliography	▲ 304 GET	TheProject.html	info.cern.ch	html	2,16 KB								→ 1558 ms

Paper documentation on W3 and References.

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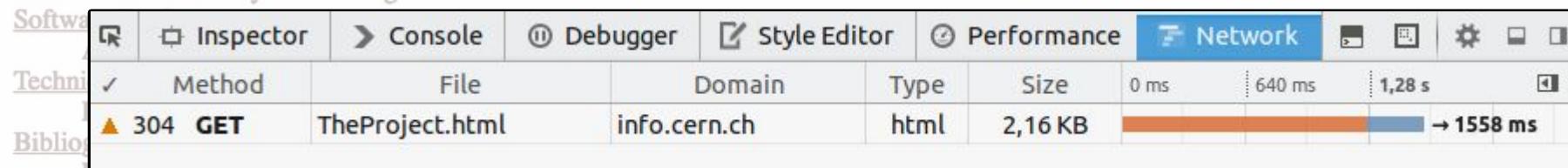
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só 2KB!

g1.globo.com

ASSINE JÁ MINHA CONTA E-MAIL ENTRAR

DESAFIO  
60 RAZÕES  
PARA COMPRAR O SEU APÉ

APÉS DE 2 QUARTOS  
NAS MELHORES LOCALIZAÇÕES

MRV  
Engenharia

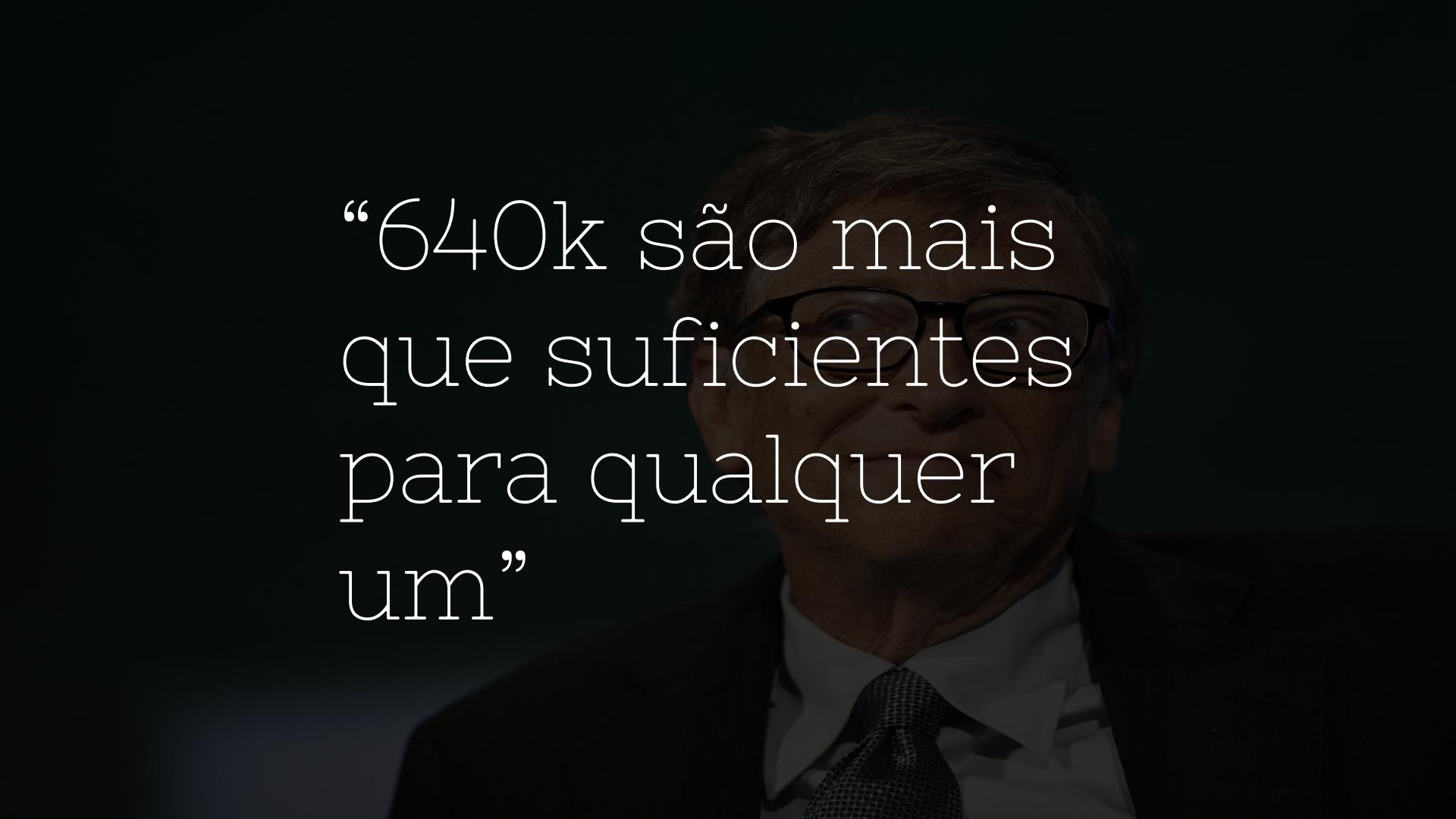
SUPREMO

STF decide hoje se suspende ou não envio da denúncia contra Temer à Câmara

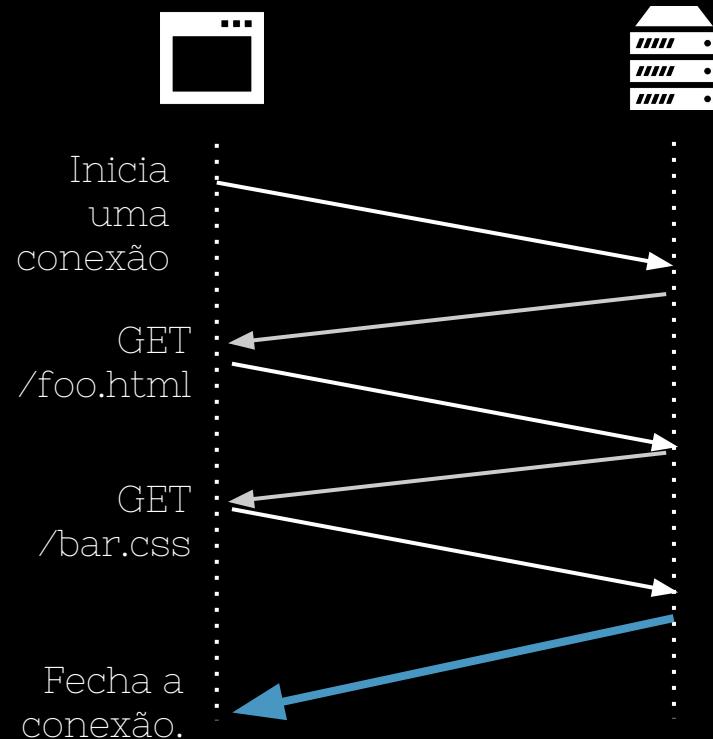
Defesa pede que denúncia seja enviada após apuração de suposta omissão na delação da JBS. PGR aponta Temer como líder de organização criminosa.

230 requests | 2.5 MB transferred | Finish: 23.30s | DOMContentLoaded: 2.37s | Load: 6.86s

❖ 252 requests  
❖ 2.5mb de transferência

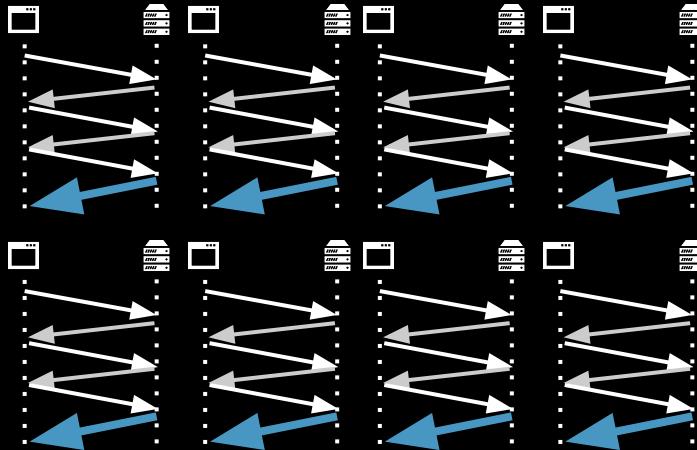
A dark, low-key portrait of Steve Jobs. He is shown from the chest up, wearing dark-rimmed glasses and a dark suit jacket over a light-colored shirt and a patterned tie. His hair is thinning and receding. The lighting is dramatic, with strong highlights on his forehead and around his eyes, while the rest of his face and the background are in deep shadow.

“640k são mais  
que suficientes  
para qualquer  
um”



# Múltiplos hosts

No HTTP 1.1, podemos abrir de 4 a 8 conexões por origem.



# Surgimento do NodeJS

*Além de levar o JavaScript para o servidor,  
permitiu desenvolvedores criarem ferramentas  
melhores.*



script-x.js

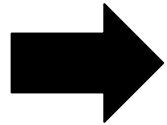
script-y.js

script-z.js

script-x.js

script-y.js

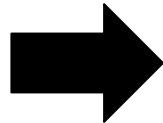
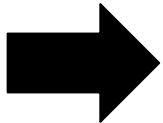
script-z.js



script-x.js

script-y.js

script-z.js



script.min.js

# HTTP/2

Depois de 16 anos, saiu a nova versão do protocolo HTTP, com importantes mudanças para a web.

# #1 Compressão automática

- ❖ GZIP é padrão obrigatório.
- ❖ Headers são binários e comprimidos

HTTP/1.1 200 OK

Content-Type: text/html; charset=utf-8

Transfer-Encoding: chunked

Connection: keep-alive

Status: 200 OK

X-UA-Compatible: IE=Edge,chrome=1

ETag: "4618f5c69dfa0ee8cb492830482c0bbe"

Cache-Control: max-age=0, private, must-revalidate

Set-Cookie: \_fernahh\_session=BAh7B0kiD3Nlc3Npb25f....

Date: Sat, 21 Mar 2015 19:23:51 GMT

Server: nginx/1.6.0 + Phusion Passenger 4.0.42

<!DOCTYPE html>...

00101010101010101

01010101

010101010100

0101010101

01010101101

010101010

?T?%.?JI?;1?R,1?T?.?[mS???,1? Q?\_?\*f0

?{{?un?T?%.?JI?;1?R,1?T?.?[mS???,1? Q?

\_?\*f0?{{?un,1?T?.?[mS?T?%?????????????0

00101010101010101

01010101

010101010100

0101010101

01010101101

010101010



Binário

?T?%.?JI?;1?R,1?T?.?[mS???,1? Q?\_?\*f0

?{{?un?T?%.?JI?;1?R,1?T?.?[mS???,1? Q? ← GZIP

\_?\*f0?{{?un,1?T?.?[mS?T?%?????????????0

?T?%.?JI?;1?R,1?T

JI?;1?R,1?T

?,%JI?;1?R,1?T

1?R,1?T???m, ← HPACK

;T?un,1?TU

?R,1??R,1?m1R

?T?%.?JI?;1?R,1?T?.?[mS???,1? Q?\_?\*f0

?{{?un?T?%.?JI?;1?R,1?T?.?[mS???,1? Q? ← GZIP

\_?\*f0?{{?un,1?T?.?[mS?T?%?????????????0

???????????????????

???????????

???????????????????

??????????????

??????????????

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???

???

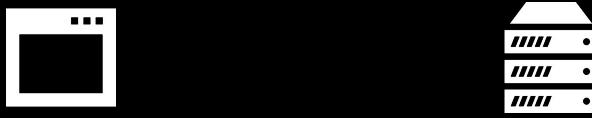
???

Ah sim,  
← temos HTTPS!

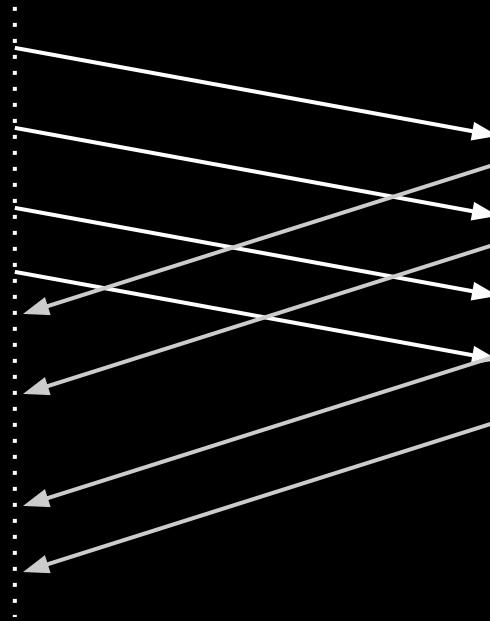
HTTP/1.1 200 OK  
Content-Type: text/html; charset=utf-8  
Transfer-Encoding: chunked  
Connection: keep-alive  
Status: 200 OK  
  
X-UA-Compatible: IE=Edge,chrome=1  
ETag: "4618f5c69dfa0ee8cb492830482c0bbe"  
Cache-Control: max-age=0, private, must-revalidate  
  
Set-Cookie: \_fernahh\_session=BAh7B0kiD3Nlc3Npb25f....  
Date: Sat, 21 Mar 2015 19:23:51 GMT  
Server: nginx/1.6.0 + Phusion Passenger 4.0.42  
<!DOCTYPE html>...  
  
0010101010101010101  
01010101  
0101010100  
0101010101  
010101101  
010101010  
  
?T?%.?JI?;1?R,1?T?.?[m ???,1? Q?\_?\*f0  
?{{?un?T?%.?JI?;1?R,1?T?.?[m ???,1? Q?  
\_?\*f0?{{?un,1?T?.?[m ?T?%????????????0

# #2 Multiplexing

- ❖ Requisições e respostas paralelas
- ❖ Mais de uma requisição por conexão



Inicia  
uma  
conexão

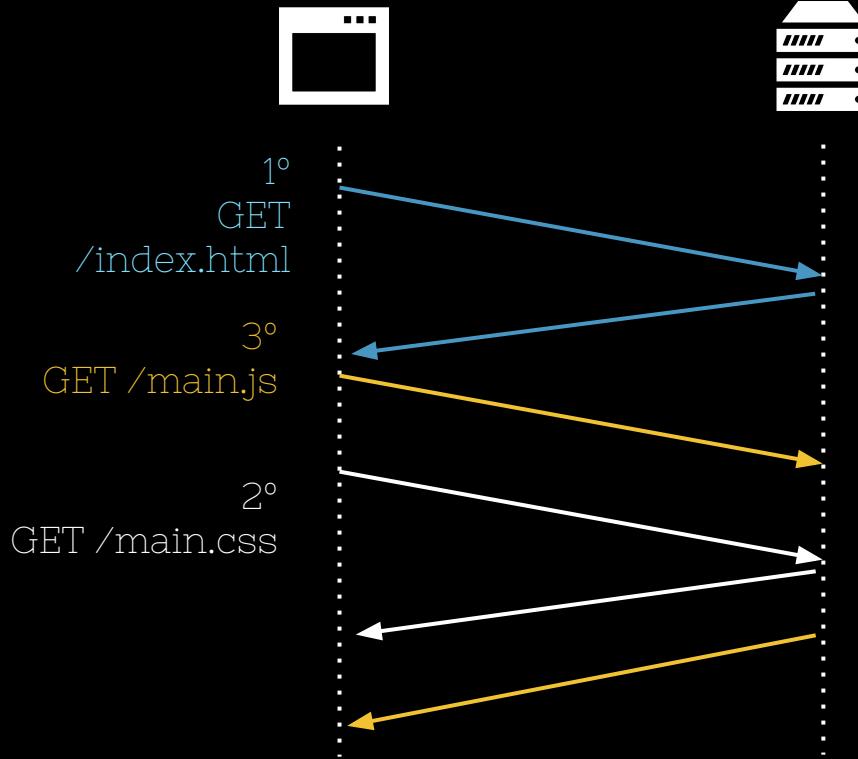


Fecha a  
conexão.

# #3 Priorização de requests

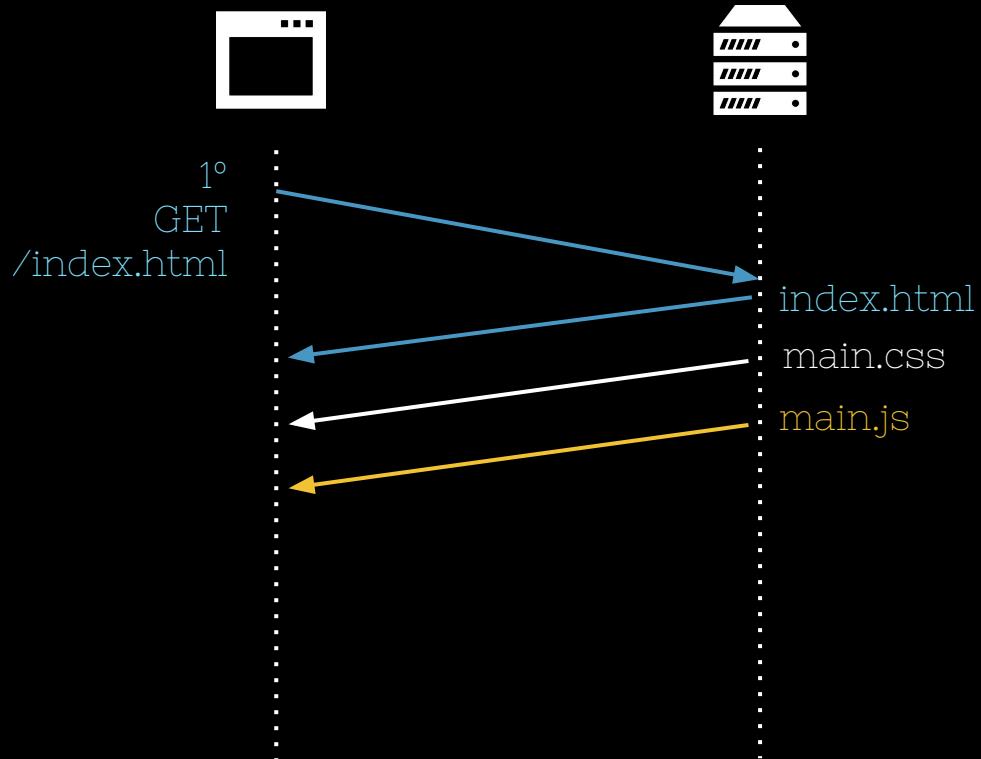
- ❖ Priorização de recursos
- ❖ Escolhemos o que o usuário verá primeiro

A prioridade do  
CSS é maior!



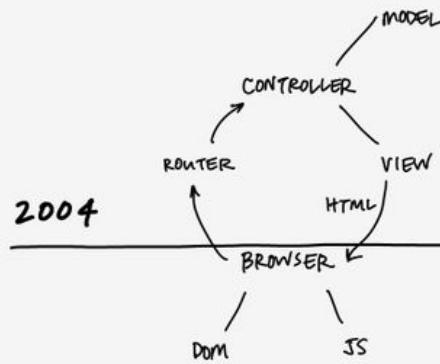
# #4 Server Push

- ❖ O servidor poderá enviar recursos

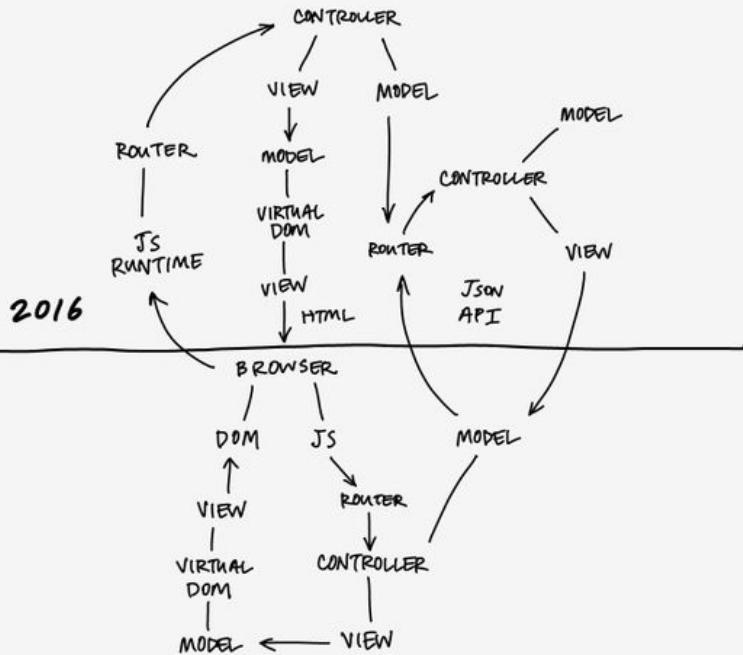


# Guerra de frameworks

*Uma enxurrada de frameworks e bibliotecas  
surgiram para ajudar desenvolvedores web.*



2004



2016

<https://twitter.com/sstephenson/status/730039913052176384>

Encontrar a solução  
para seu problema  
num mar de  
tecnologias é uma  
*habilidade.*

#1

Conheça muito bem os  
*requisitos e problemas* que  
você quer resolver antes  
de começar.

Tecnologias surgem  
de forma rápida, mas  
empresas as  
*adotam lentamente.*

#2

Aposte em arquiteturas  
*plugáveis e modulares.*

“Escreva programas  
que façam *apenas uma*  
*coisa* mas que façam  
*bem feito.*”

#3

Acompanhe as  
comunidades. Elas  
servem como um  
*termômetro de tecnologias.*

Requisitos de aplicações  
web mudam com  
frequência.

*Esteja preparado.*

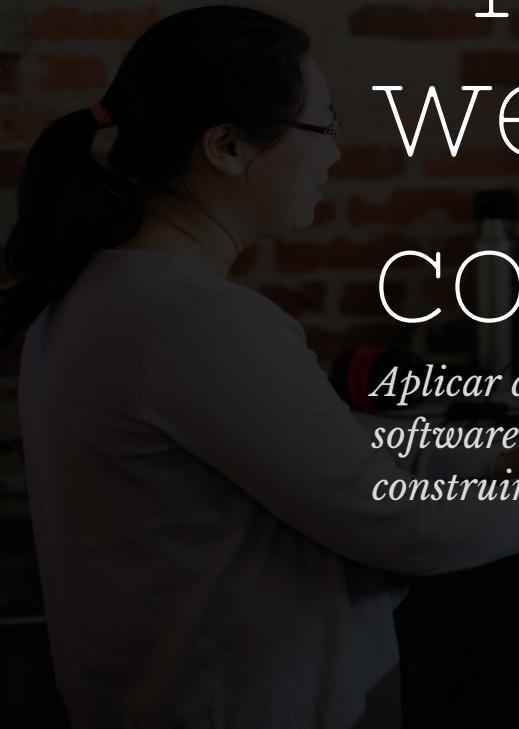


# changelog

[meetup.com/changelog](https://meetup.com/changelog)

# Aplicações web são complexas

*Aplicar conceitos e técnicas de engenharia de software faz todo sentido, afinal, buscamos construir produtos escaláveis.*



#4

Deixe o código *melhor* do  
que quando você pegou.

# Refactoring

Também é papel do desenvolvedor alertar quando refactoring é necessário.

# Débitos técnicos

Uma forma de medir e argumentar para o  
negócio quanto seu *codebase* está ruim.

# Testes

São imprescindíveis em projetos que precisam crescer.

Be the first to clip this slide

Clip slide

como *encarar* o  
desenvolvimento  
*front-end*

1 of 71

<https://www.slideshare.net/jeancarloemer/como-encarar-o-desenvolvimento-frontend>

# Progressive Enhancement

*Novas tecnologias tendem a ser amigáveis com a web. É possível desenvolver código para browsers modernos e manter compatibilidade.*

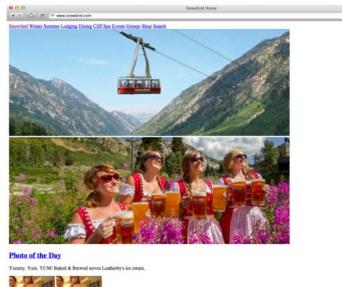
# Sigh, JavaScript

The best sites, only accessible to some.

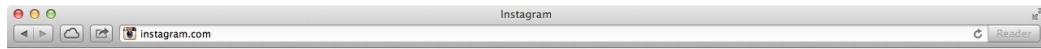
## Well done: Snowbird

Snowbird is a ski and summer resort in Utah. Designed and developed by Rally Interactive, this site is a great example of progressive enhancement.

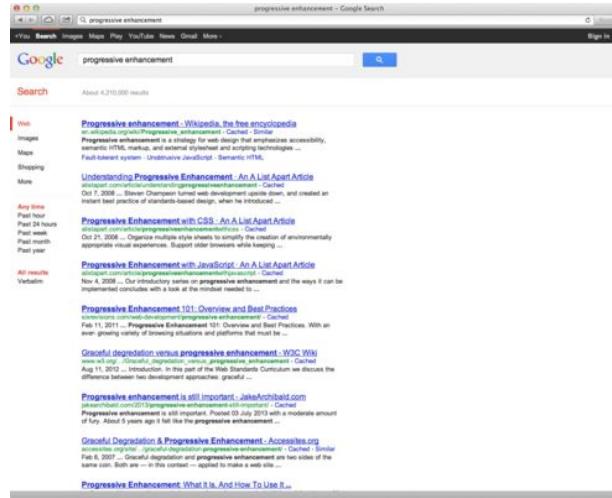
With CSS and JavaScript disabled, all of the main content is still present in HTML.



<http://sighjavascript.tumblr.com/>



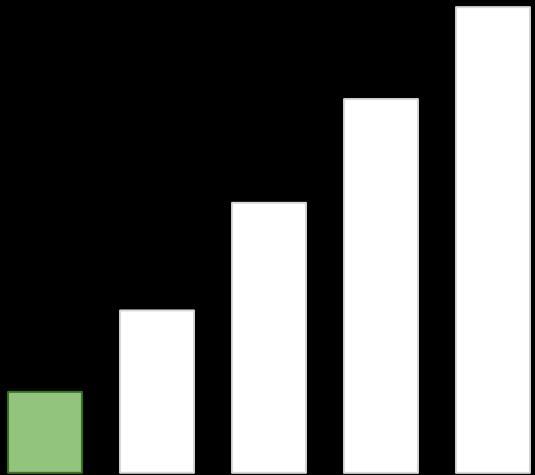




“Em 10 anos, nada do que você construiu hoje que *depende de JS* para mostrar o *conteúdo*, estará disponível e arquivado na web”

- dead to history  
(archive-org);
- unreliable for search  
results;
- ignorable.

<https://speakerdeck.com/tomdale/progressive-enhancement-is-dead-long-live-progressive-enhancement>

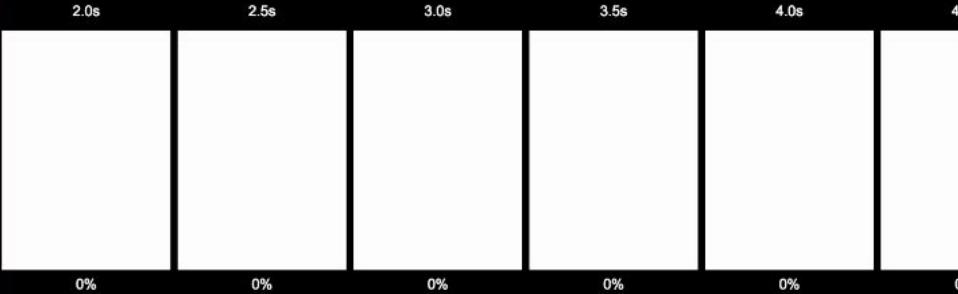


A média de conexão de  
internet de usuários no  
Brasil é ~1.2mb.

“Server rendering is not about SEO, it’s about *performance*. Consider the additional roundtrips to get scripts, styles, and subsequent API requests.”

<https://rauchg.com/2014/7-principles-of-rich-web-applications>

## Without Progressive Enhancement (PE)



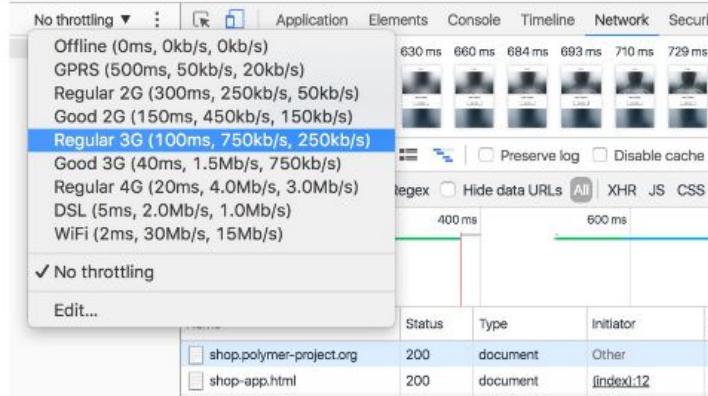
## With PE Server-side rendering + hydration with JS



<https://medium.com/@addyosmani/progressive-web-apps-with-react-js-part-4-site-is-progressively-enhanced-b5ad7cf7a447>

## Debugger

Disable JavaScript



<https://medium.com/@addyosmani/progressive-web-apps-with-react-js-part-4-site-is-progressively-enhanced-b5ad7cf7a447>

# Progressive Web Apps (PWA)

Aplicações web que são confiáveis, rápidas e com uma experiência imersiva.

<https://developers.google.com/web/progressive-web-apps/>

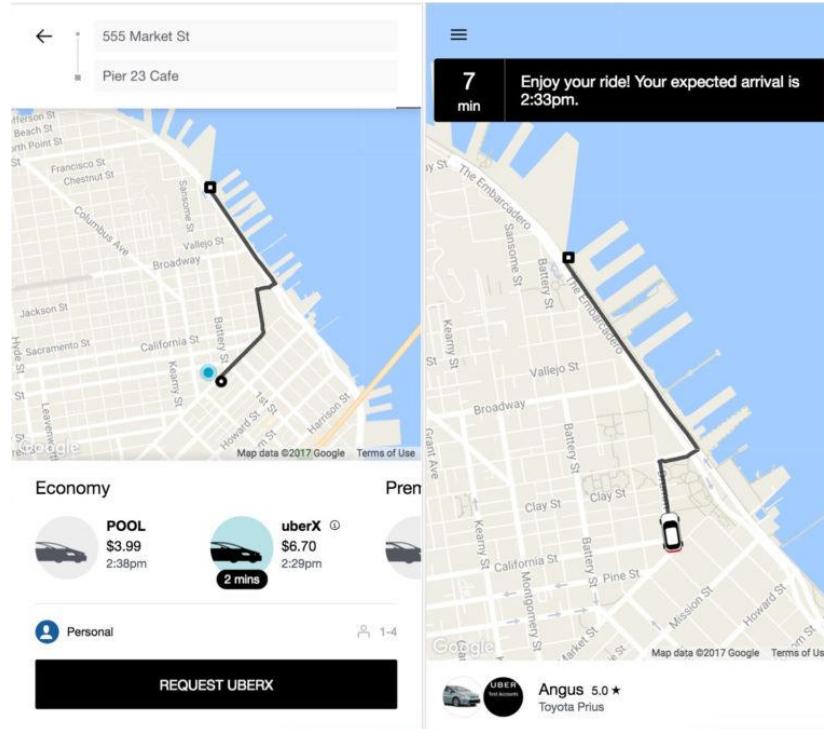


Aplicações web que são confiáveis, rápidas e com uma experiência imersiva.

<https://developers.google.com/web/progressive-web-apps/>

# Web Apps

Aplicações web que são confiáveis, rápidas e com uma experiência imersiva.



<https://eng.uber.com/m-uber/>



Robert Nyman @robertnyman · Jun 28

Happy to see Uber ship a Progressive Web App! -



### Building m.uber: Engineering a High-Performance W..

In this article, we discuss how Uber Engineering designed m.uber, a lightweight web app that delivers a native app experience for riders on mobile browsers.

[eng.uber.com](http://eng.uber.com)



2



12



49



Maximiliano Firtman @firt · Jun 28

It's interesting and weird that they didn't mention PWA in the blog post.



2



1



1



angus @angustweets · Jun 28

I don't like the term. It's meaningless (so called PWAs are only tangentially related to progressive enhancement).



1



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angus @angustweets

Following

Replies to @angustweets @firt @robertnyman

it's a web app. It's small and it's fast. Plain english :)

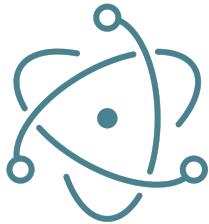
12:29 PM - 28 Jun 2017

“isso é uma  
web app.  
pequena e  
rápida.”





as APIs web  
ainda irão  
melhorar...



# Electron

Permite desenvolvermos desktop apps, que são cross platform com *tecnologias web*.

HTML, CSS e JavaScript

Electron (NodeJS, Chromium)

<https://electron.atom.io/>

HTML, CSS e JavaScript

Electron (NodeJS, Chromium)

SO

<https://electron.atom.io/>

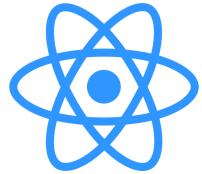
Spotify

Visual Studio Code

Slack

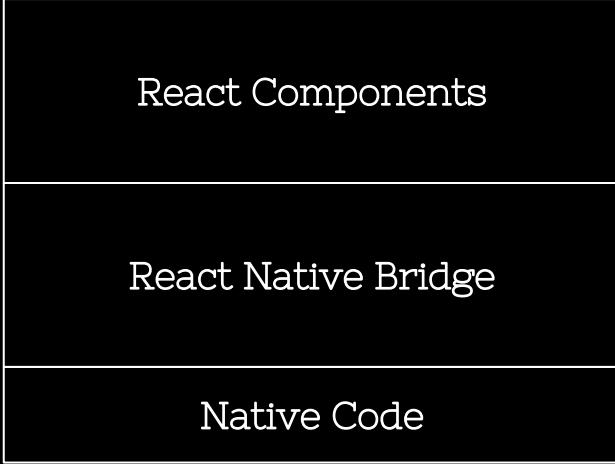
Hyper

Atom



# React Native

Framework para construir *aplicativos nativos* com React.



React Components

React Native Bridge

Native Code

Facebook

AirBnb

Instagram

Skype

Walmart

The background of the image is a dark, atmospheric scene of a large colony of bats in flight over a dense forest at night. A single bat is prominently featured in the center, its wings spread wide against the dark sky.

*Faça parte dessa  
revolução.*

*Aposte na  
web!*

*obrigado!*

@fernahh

fernahh.com