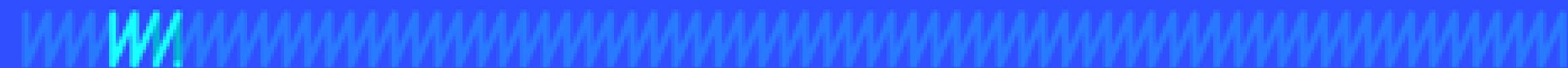


Wellington Della Mura

PROGRESSIVE WEB APP

SITe 2017 – CCT/UENP





Wellington Della Mura

della.mura@gmail.com

Professor Colaborador no CCT/UENP
(Ciência da Computação e Sistemas de Informação)

Mestre em Ciência da Computação (UEL2016).
Especialista em Tecnologia Java (UTFPR2009).
Graduado em Sistemas de Informação (UENP2007).

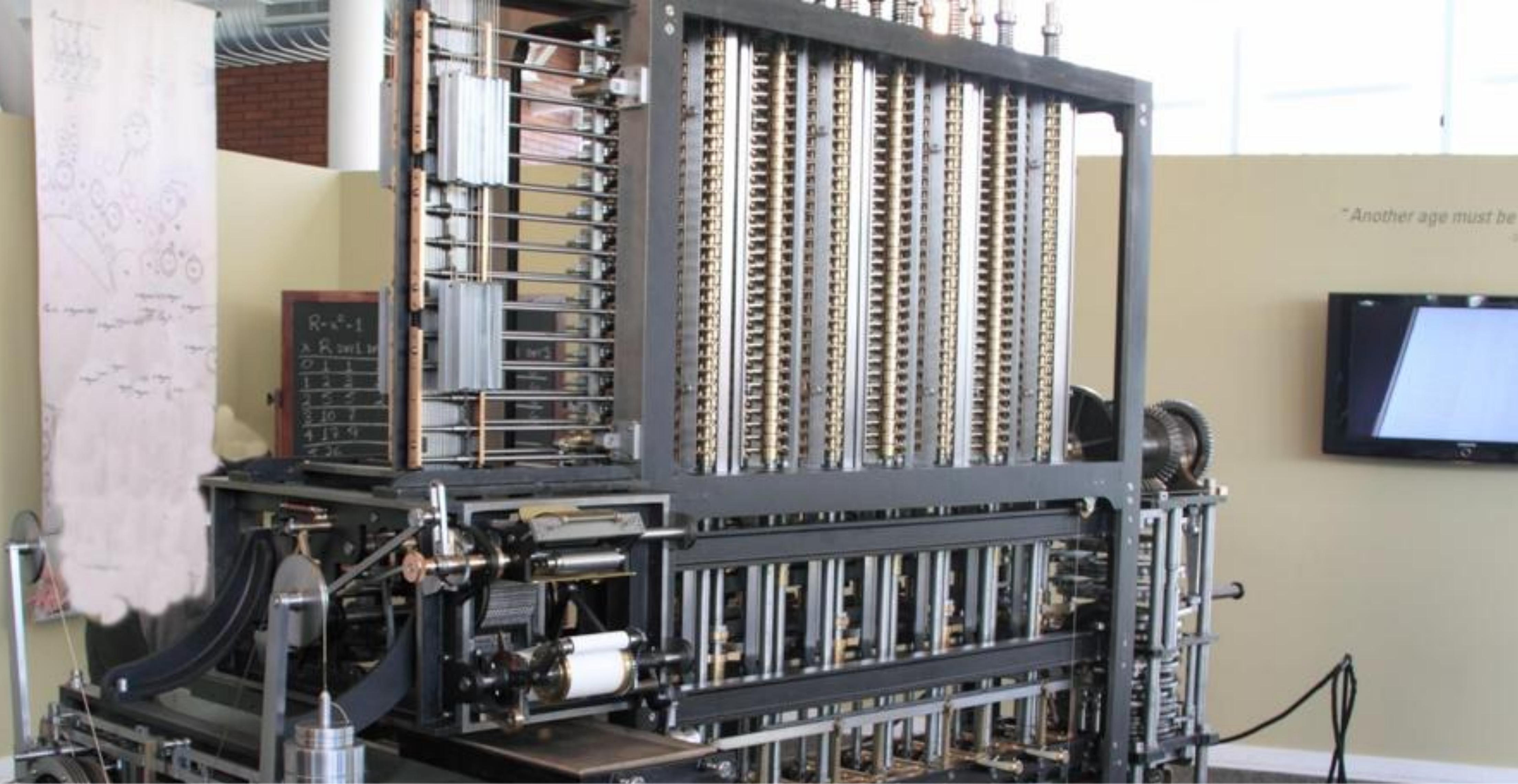
Áreas de interesse

Teoria da computação, Compiladores, Desenvolvimento Web e IoT

<http://github.com/wellingtondellamura>
<http://wellington.della-mura.com.br>



**PROGRESSIVE
WEB APP**
SITe 2017 – CCT/UENP

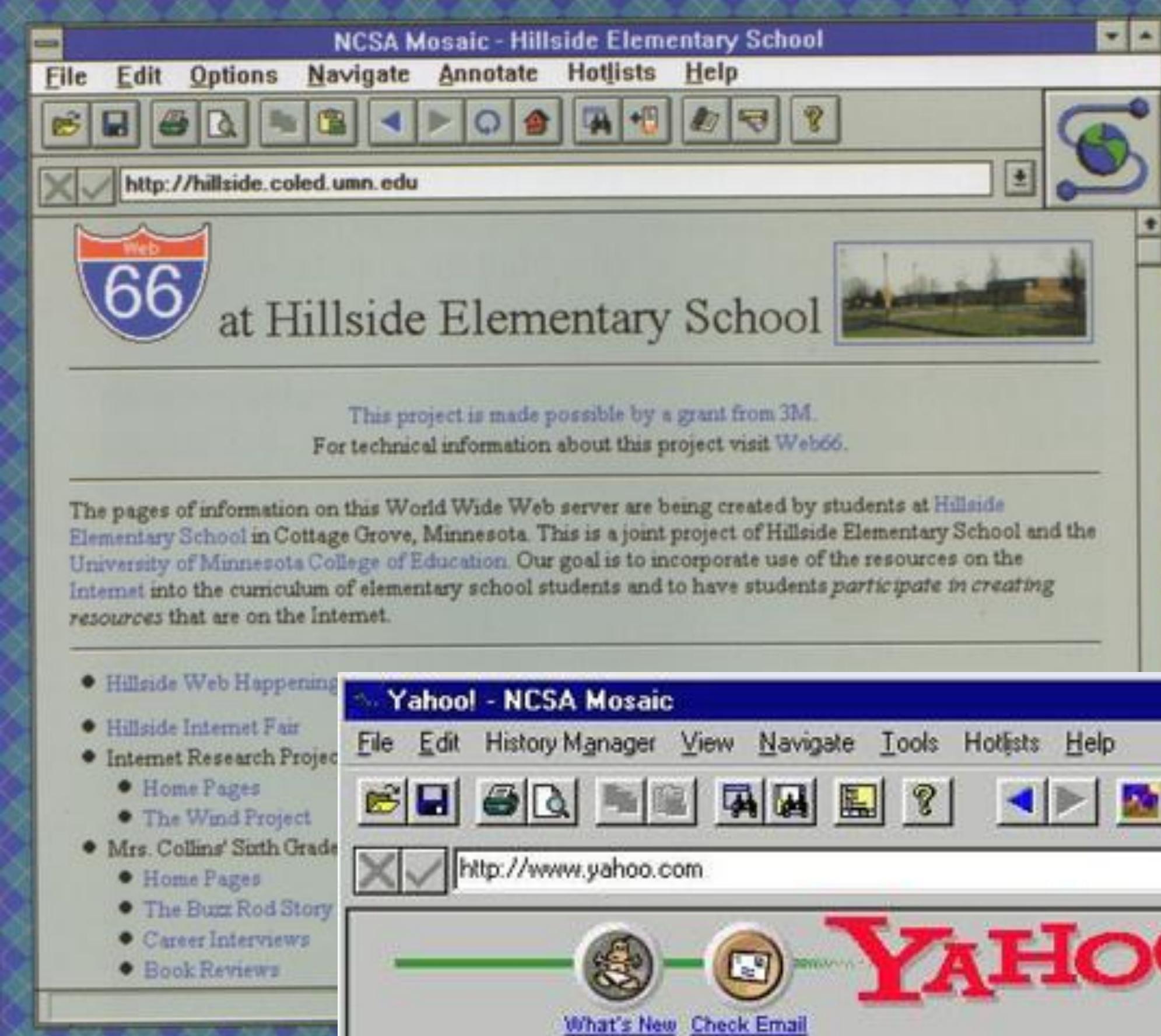


Designed 1822-ish

**UM DOS MAIORES PROBLEMAS
DOS SOFTWARES É
SUA DISTRIBUIÇÃO**



Tim McLain
Internet Writer/Surfer
Classroom Connect



Yahoo! - NCSA Mosaic

File Edit History Manager View Navigate Tools Hotlists Help

http://www.yahoo.com


[What's New](#) [Check Email](#) [Personalize](#) [Help](#)

Yahoo! Auctions
Pokemon, Rolex, 'N Sync

free_email@yahoo.com

Win Free Flowers
FTD.COM

[Search](#) [advanced search](#)

[Shopping](#) - [Auctions](#) - [Yellow Pages](#) - [People Search](#) - [Maps](#) - [Travel](#) - [Classifieds](#) - [Personals](#)
[Games](#) - [Chat](#) - [Clubs](#)

[Mail](#) - [Calendar](#) - [Messenger](#) - [Companion](#) - [My Yahoo!](#) - [News](#) - [Sports](#) - [Weather](#) - [TV](#)

Tue 06/06/00 9:33:04

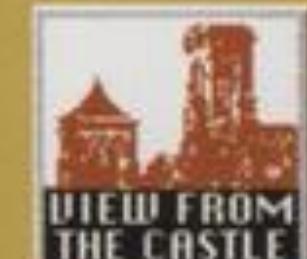
NCSA Mosaic - The Smithsonian Institution Home Page

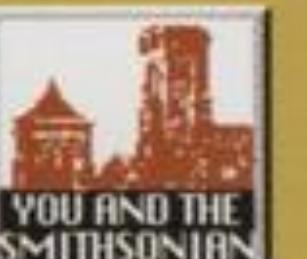
File Edit Options Navigate Annotate Hotlists Help

http://www.si.edu/

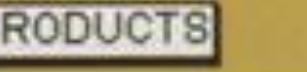
The SMITHSONIAN

America's Treasure House for Learning

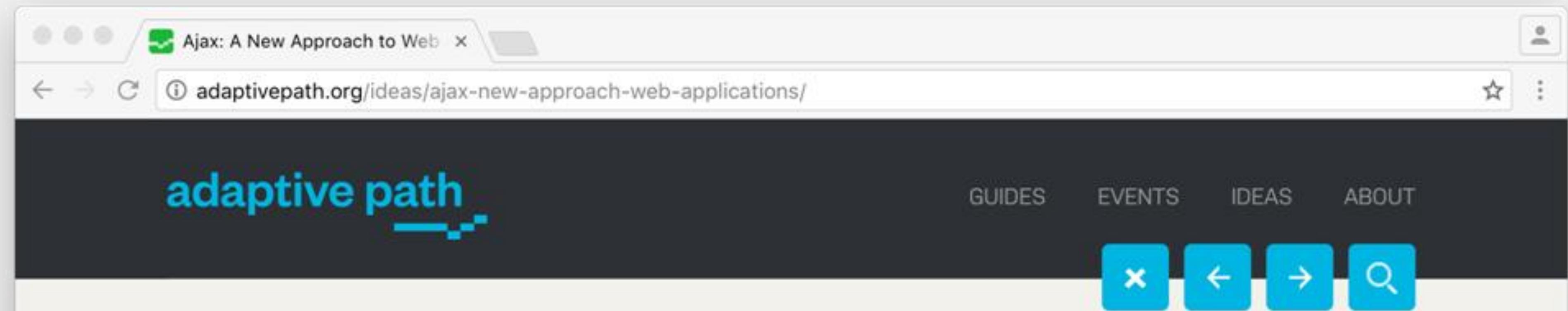
 **WELCOME**
 **VIEW FROM THE CASTLE**


 **WHAT'S NEW**
 **YOU AND THE SMITHSONIAN**

 **PLACES**
 **ACTIVITIES**
 **RESOURCES**

 **PEOPLE**
 **PERSPECTIVES**
 **PRODUCTS**

If this server is busy, you may want to visit the Smithsonian mirror site in California.



Ajax: A New Approach to Web Applications

February 18, 2005 | By [Jesse James Garrett](#)

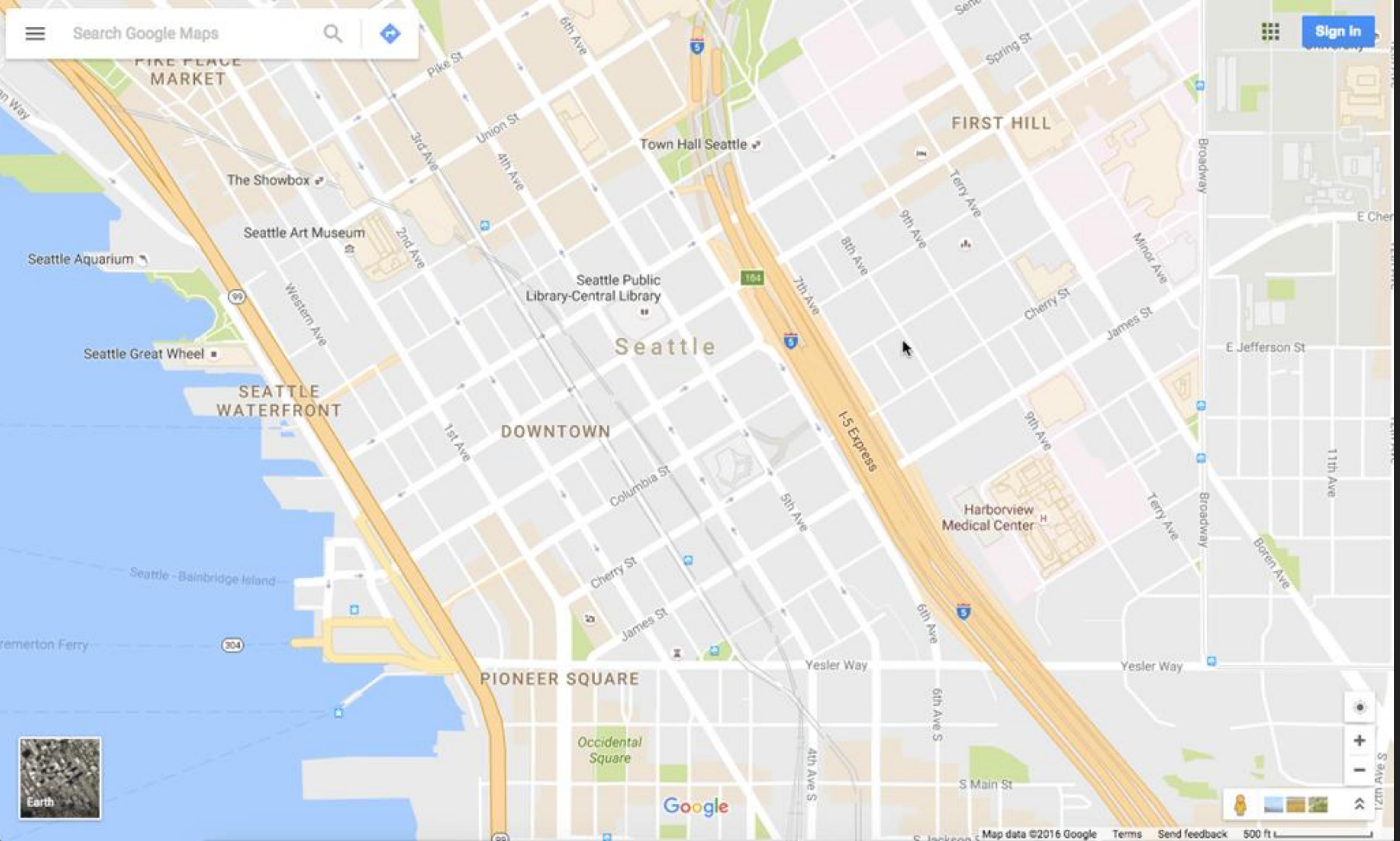
If anything about current interaction design can be called "glamorous," it's creating Web applications. After all, when was the last time you heard someone rave about the interaction design of a product that wasn't on the Web? (Okay, besides the iPod.) All the cool, innovative new projects are online.

Despite this, Web interaction designers can't help but feel a little envious of our colleagues who create desktop software. Desktop applications have a richness and responsiveness that has seemed out of reach on the Web. The same

Search Google Maps



Sign In



Earth

Google

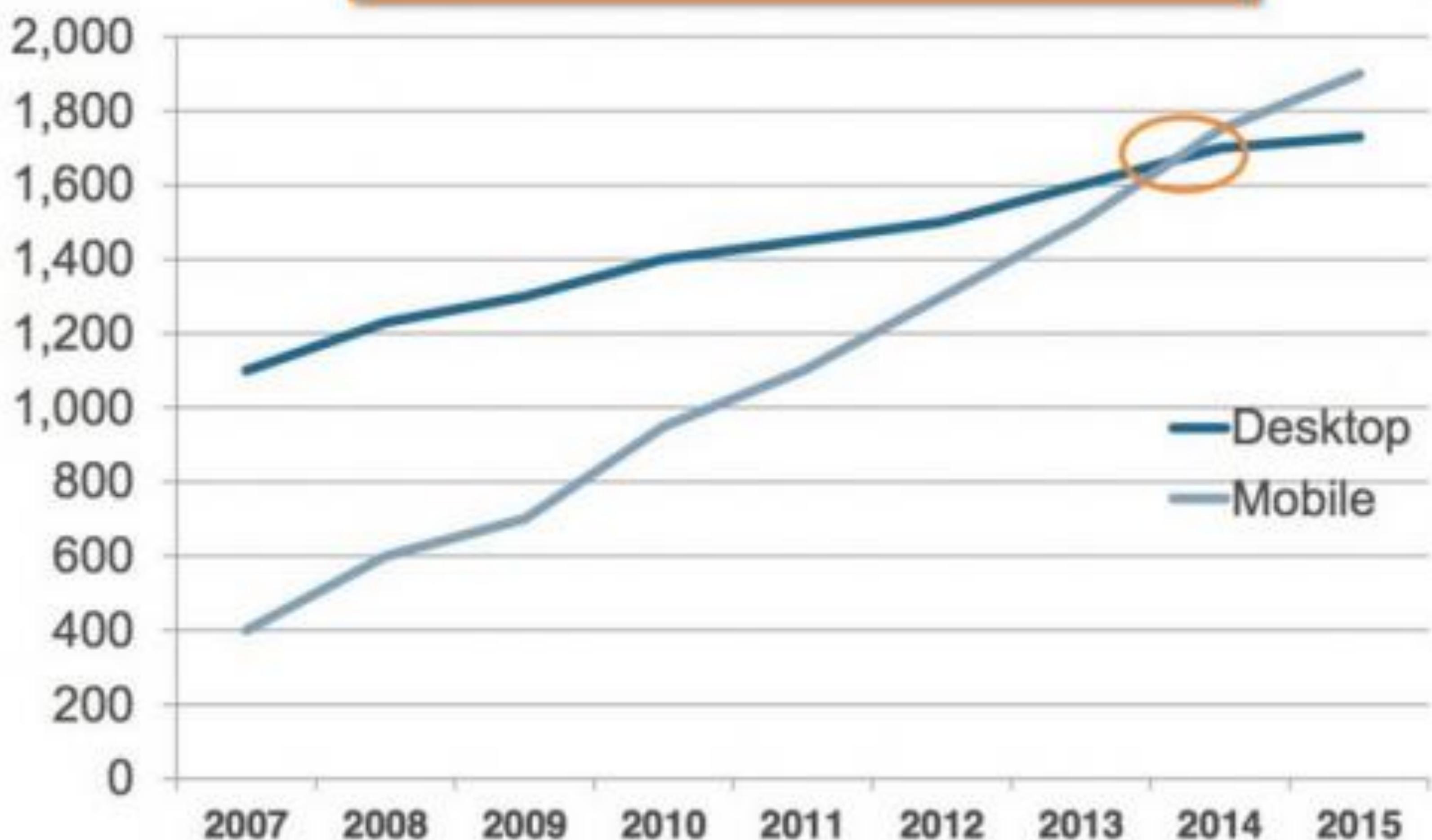
Map data ©2016 Google

Terms

Send feedback

500 ft

Number of Global Users (Millions)



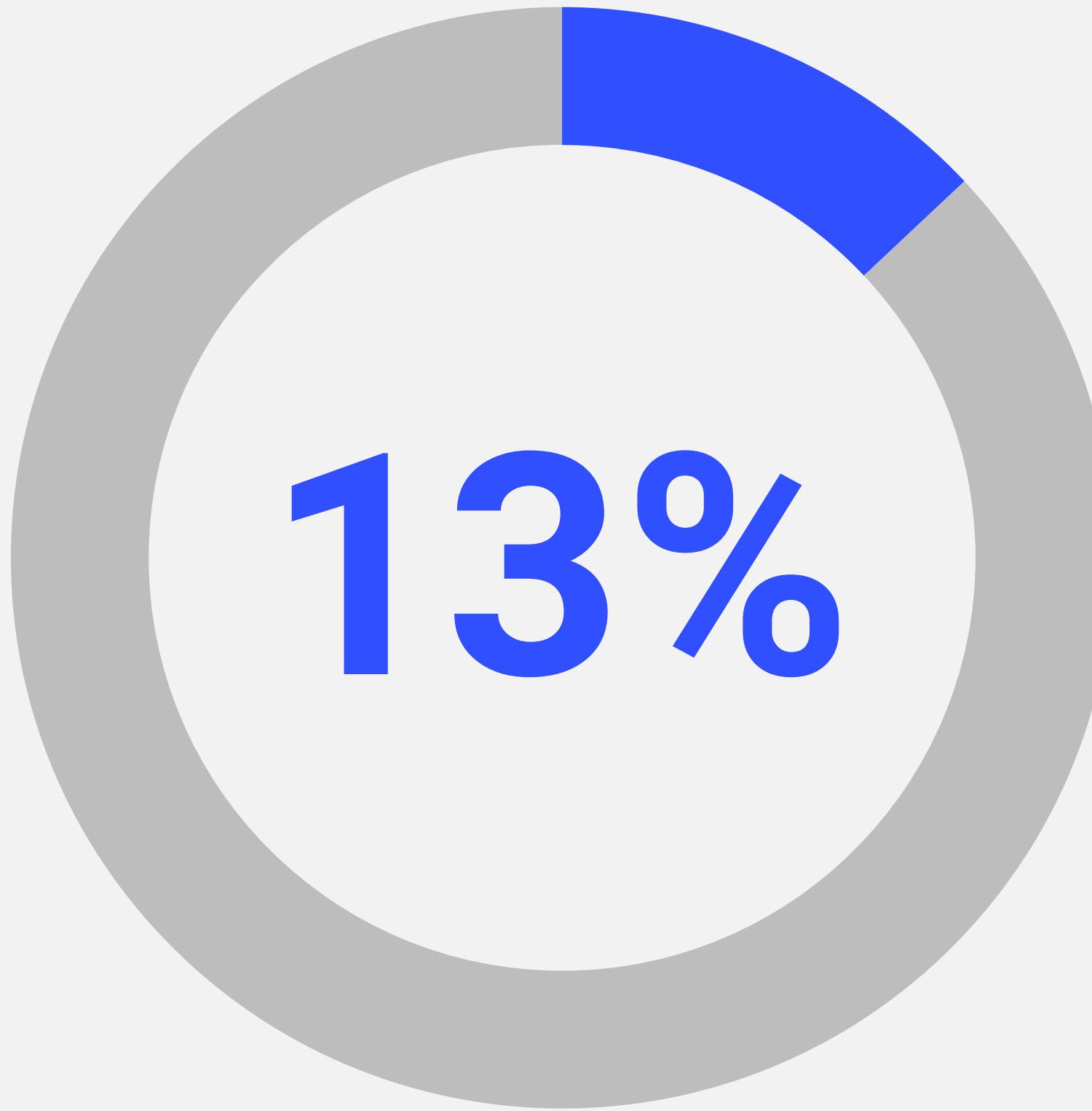
comSCORE

© comScore, Inc. Proprietary and Confidential.

24

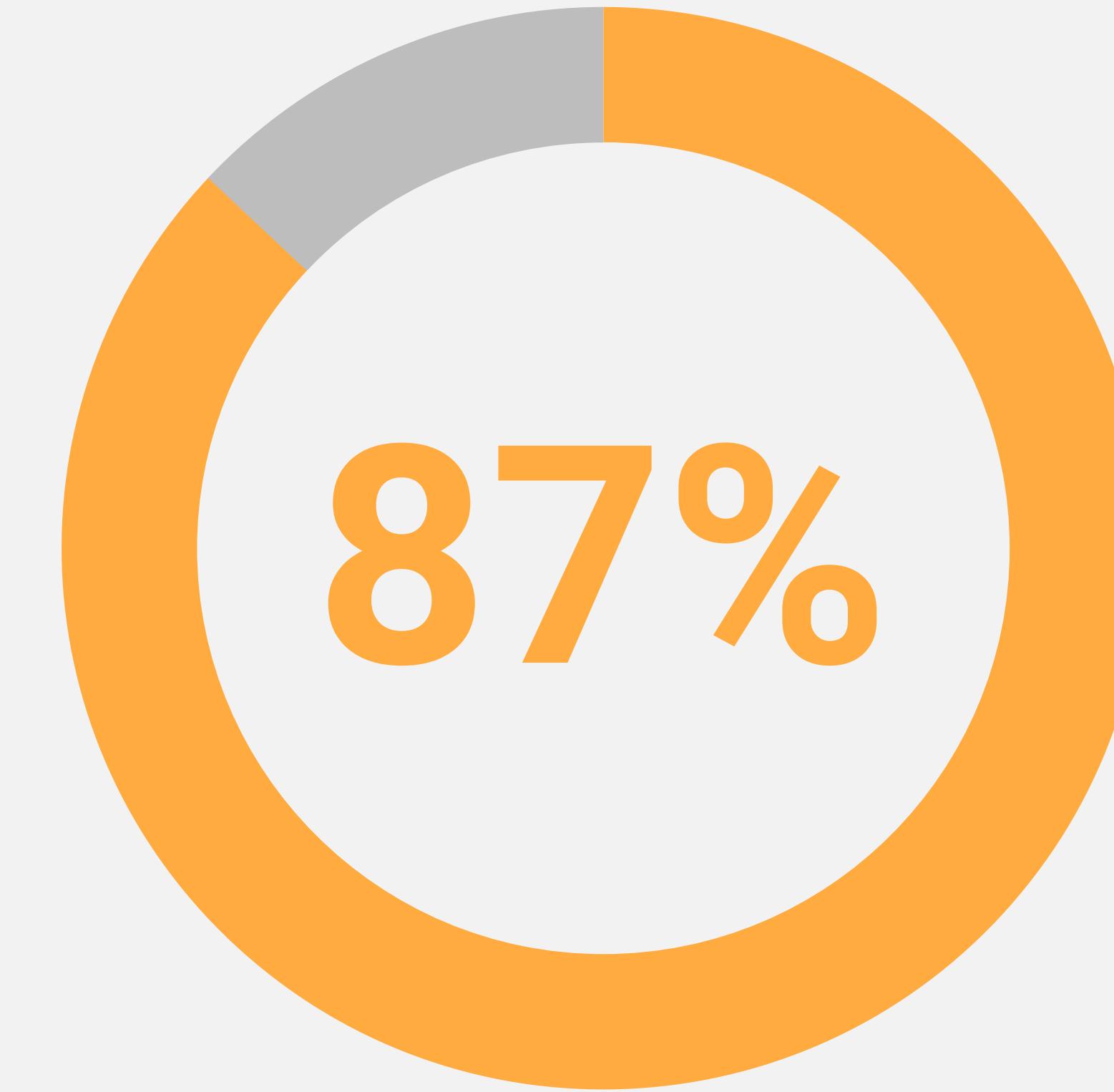
Source: Morgan Stanley Research

USUÁRIOS DE SMARTPHONES GASTAM MAIS TEMPO COM APLICAÇÕES NATIVAS DO QUE NAVEGANDO NA WEB



Mobile web

VS.

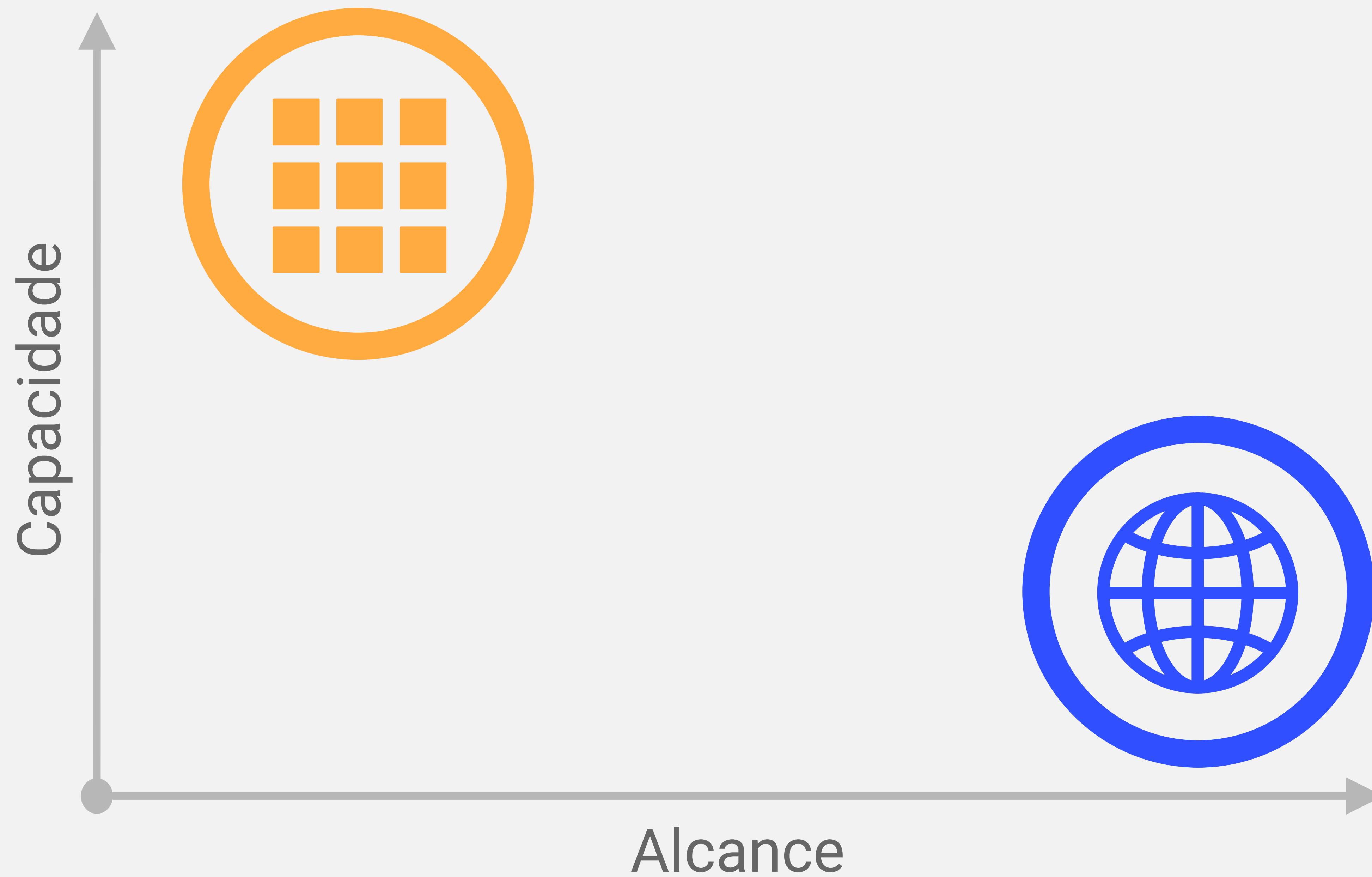


Apps

80%

DO TEMPO É GASTO COM
OS 3 APLICATIVOS
PREFERIDOS DO USUÁRIO

Source: comScore Mobile Metrix, U.S., Age 18+, June 2015



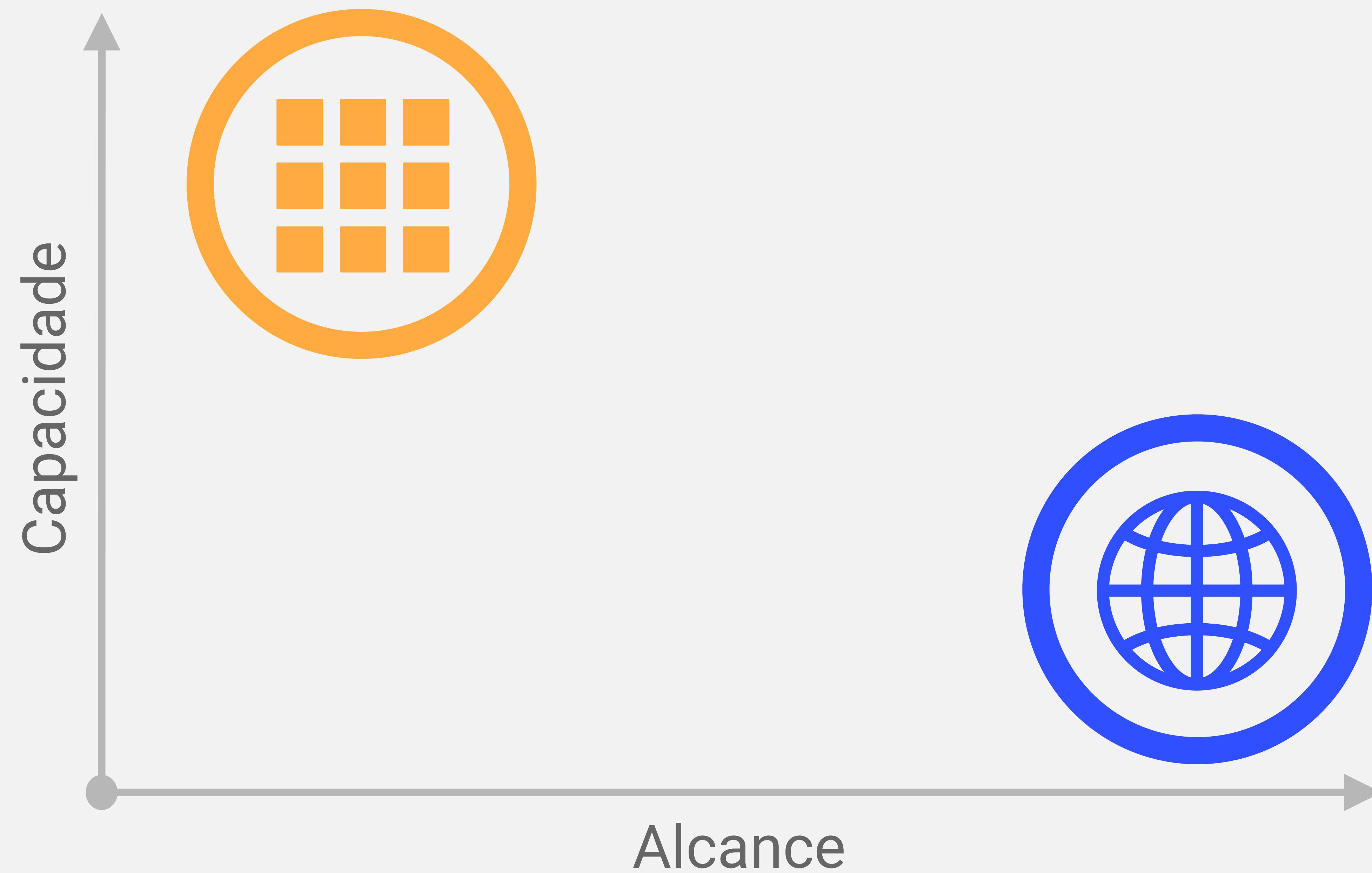
ZERO

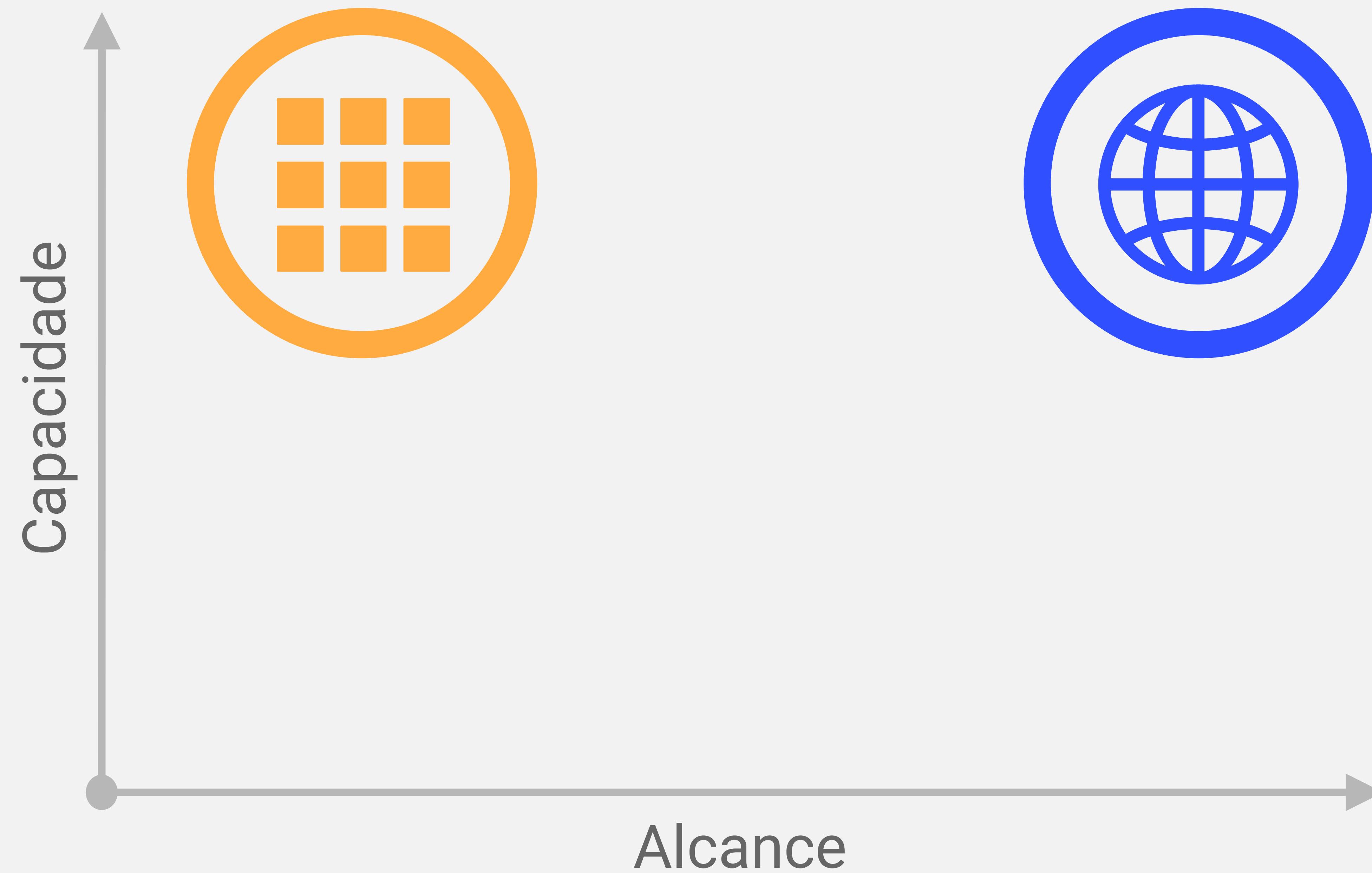
É O NÚMERO DE NOVOS APPS
QUE UM USUÁRIO COMUM
INSTALA NO SEU DISPOSITIVO

Source: comScore Mobile Metrix, U.S., Age 18+, June 2015

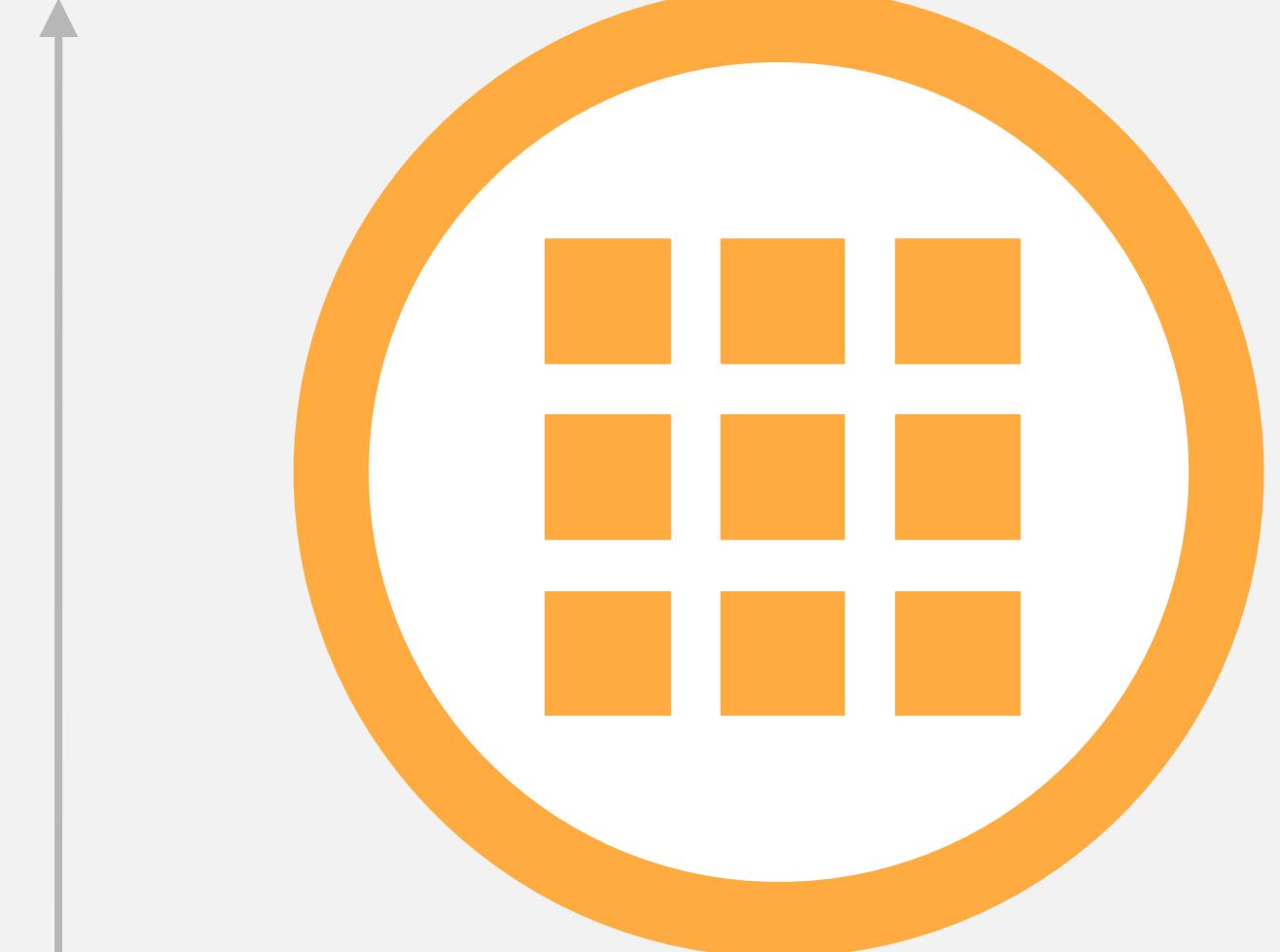
POR QUE DEVO CONSTRUIR PROGRESSIVE WEB APPS?







Capacidade



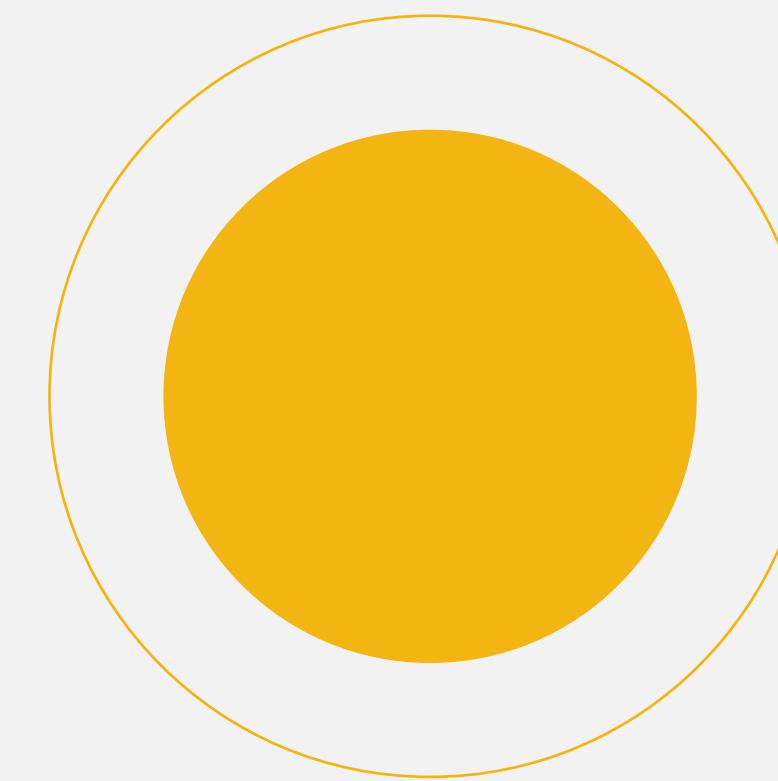
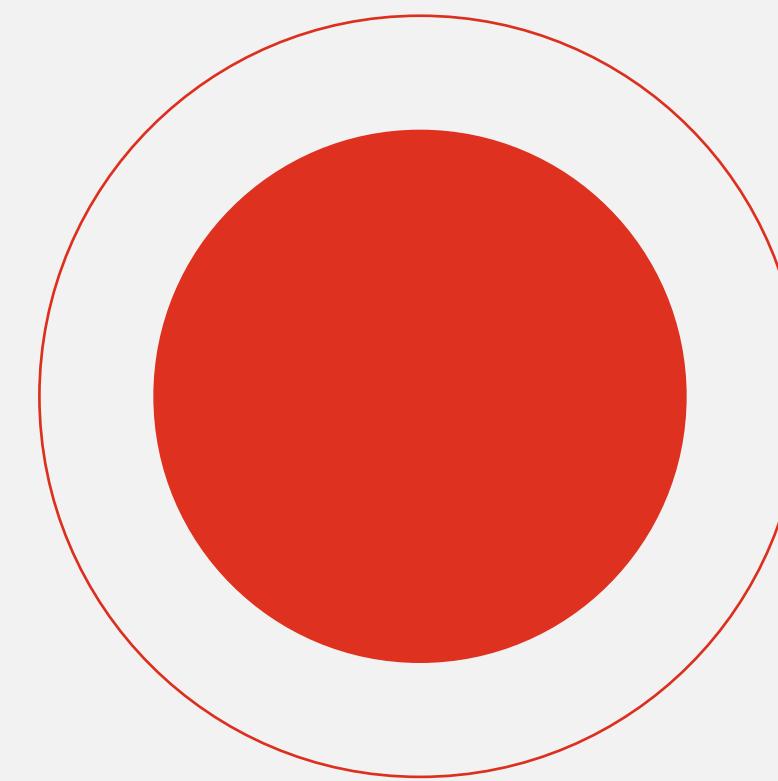
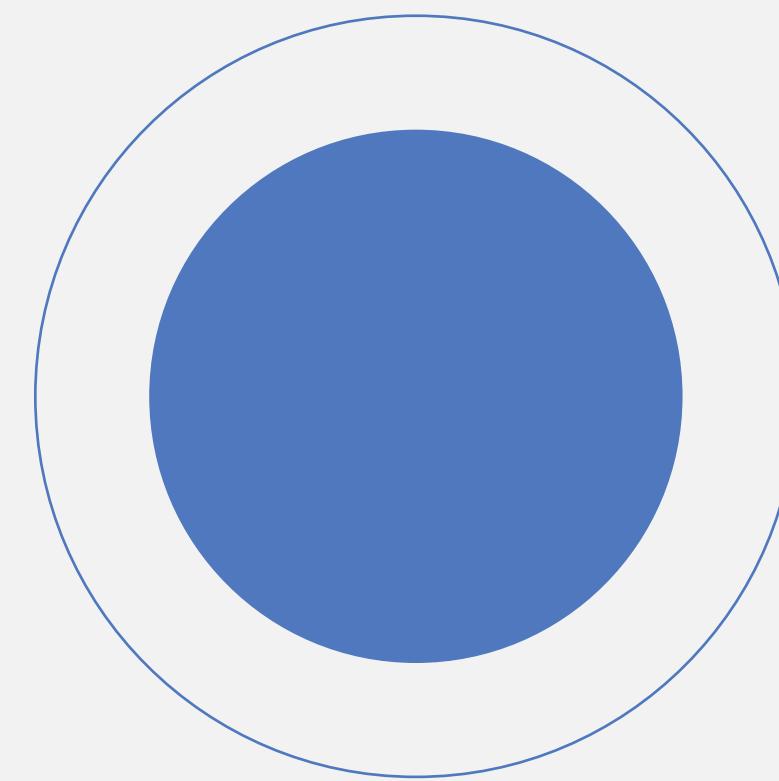
Alcance



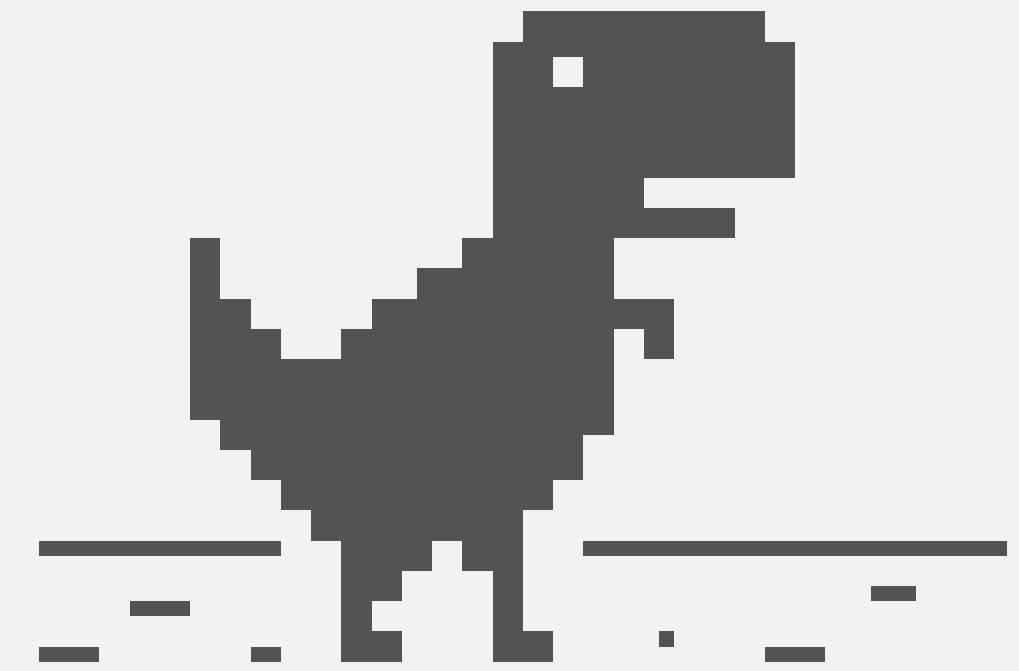
Progressive Web Apps

SÃO UM NOVO NÍVEL DE
PREOCUPAÇÃO A QUALIDADE DA
SUA EXPERIÊNCIA DE USUÁRIO

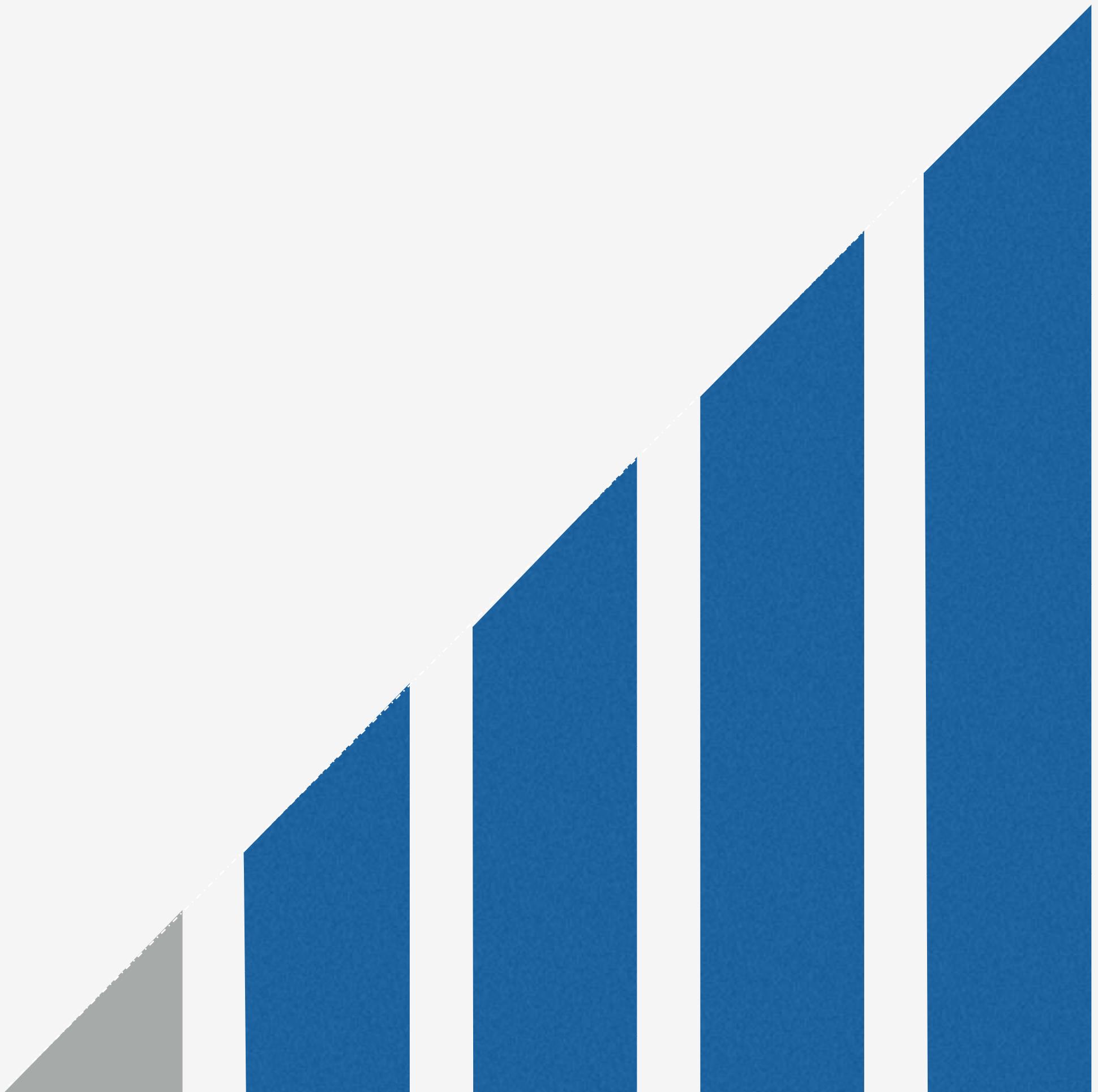
A experiência do usuário deve ser...



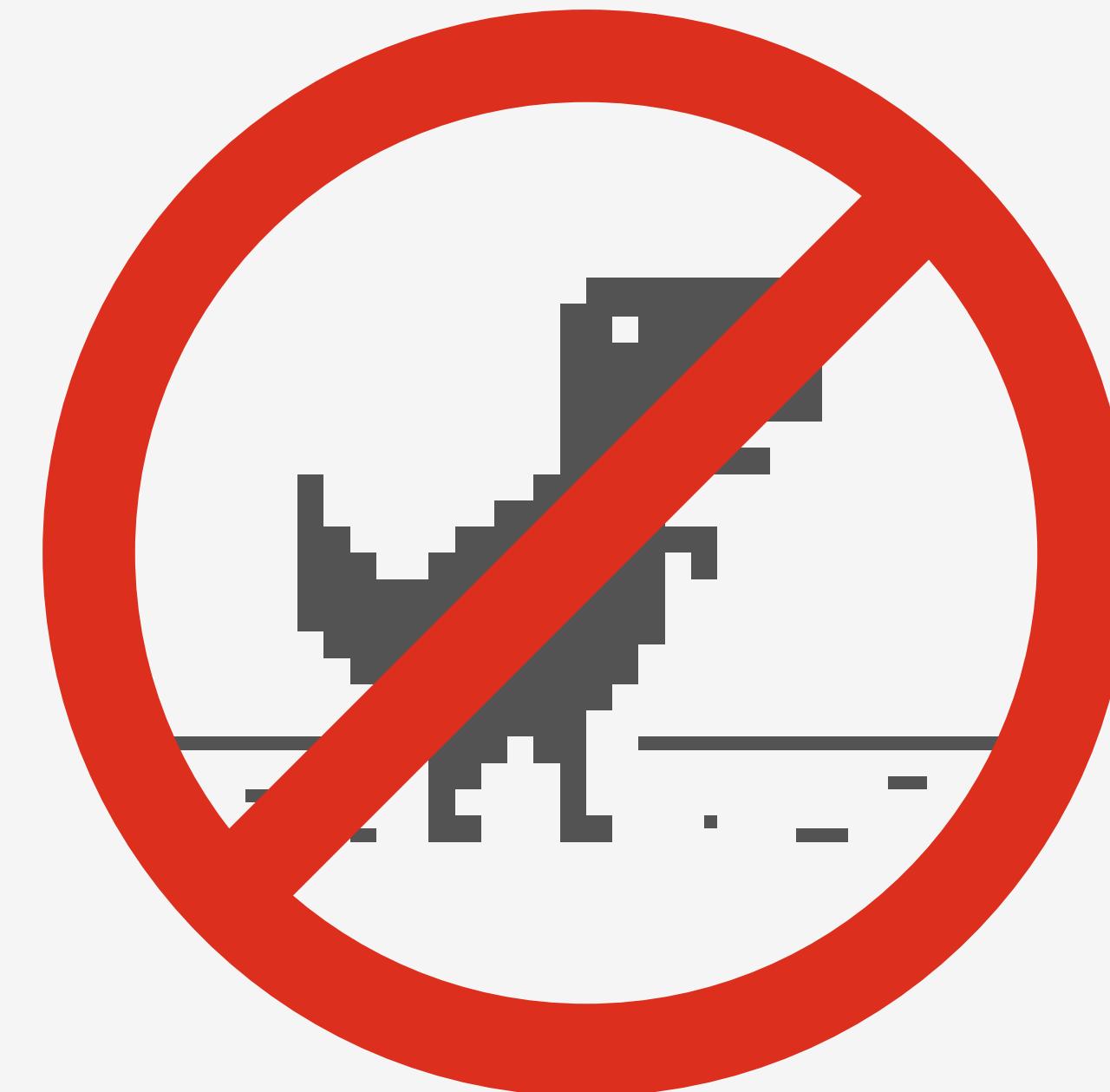
Confiável

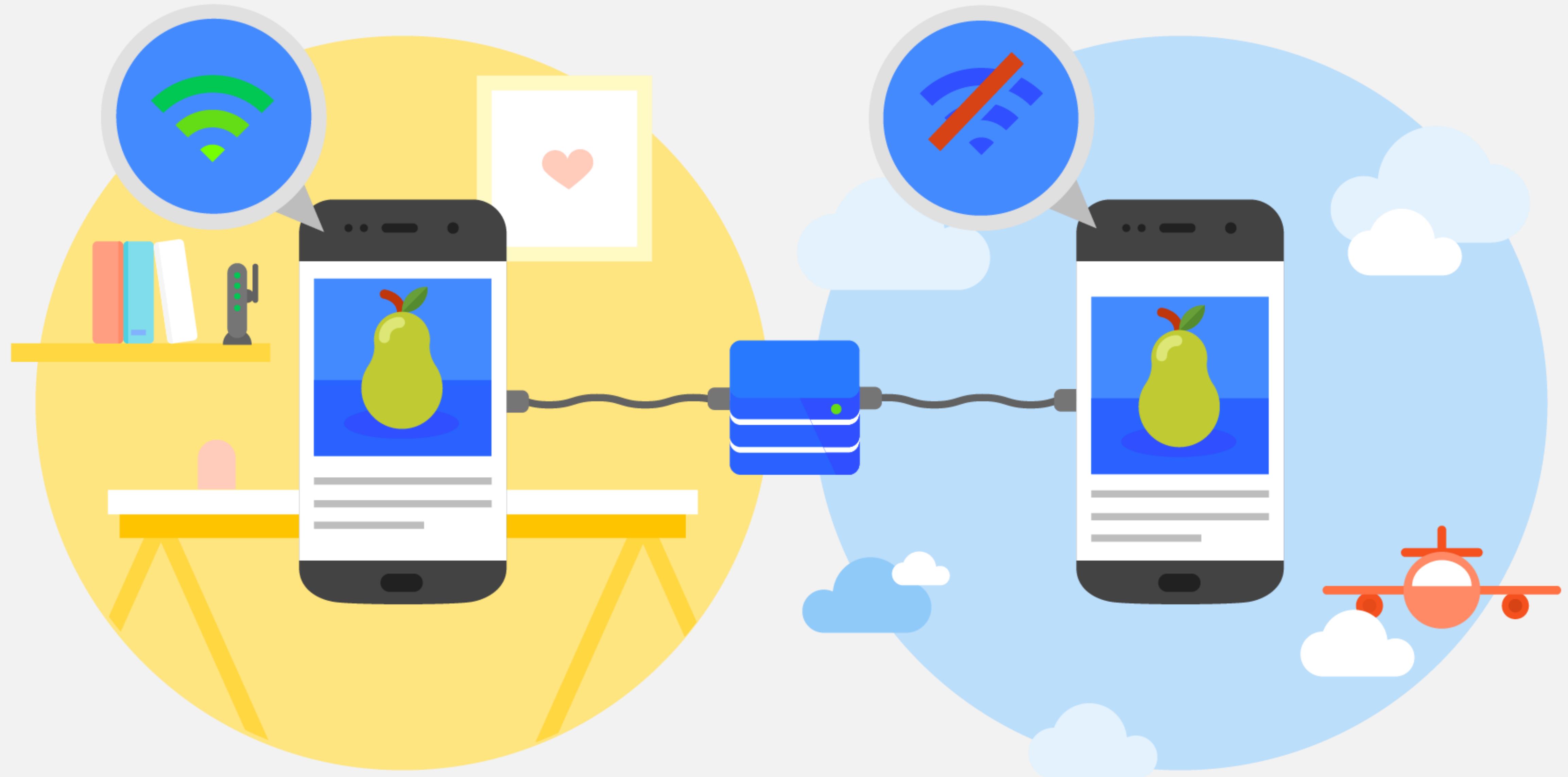


Lie-Fi

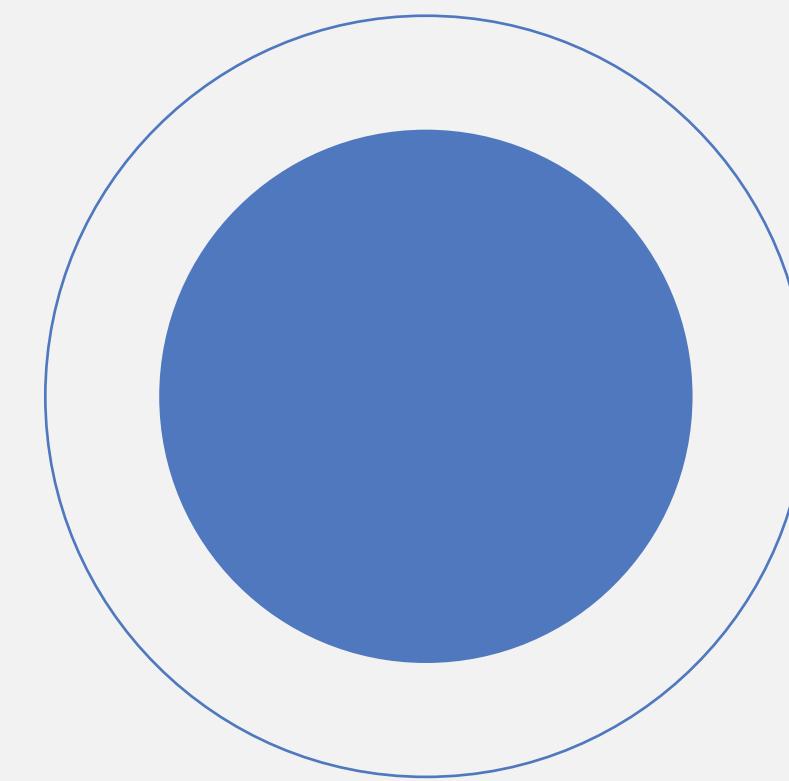


Confiabilidade significa nunca
mostrar mostrar o dinossauro (Downasaur)

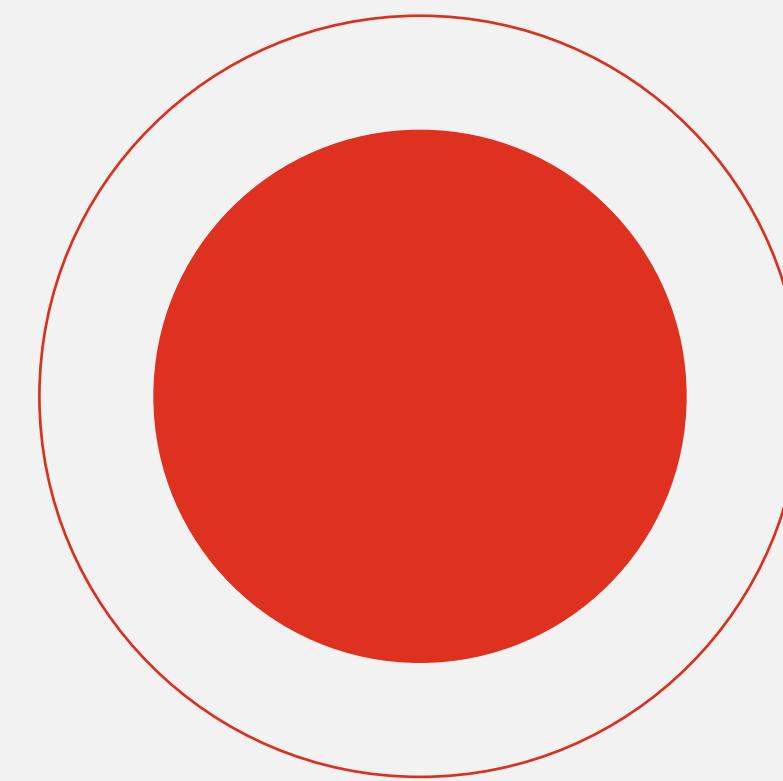




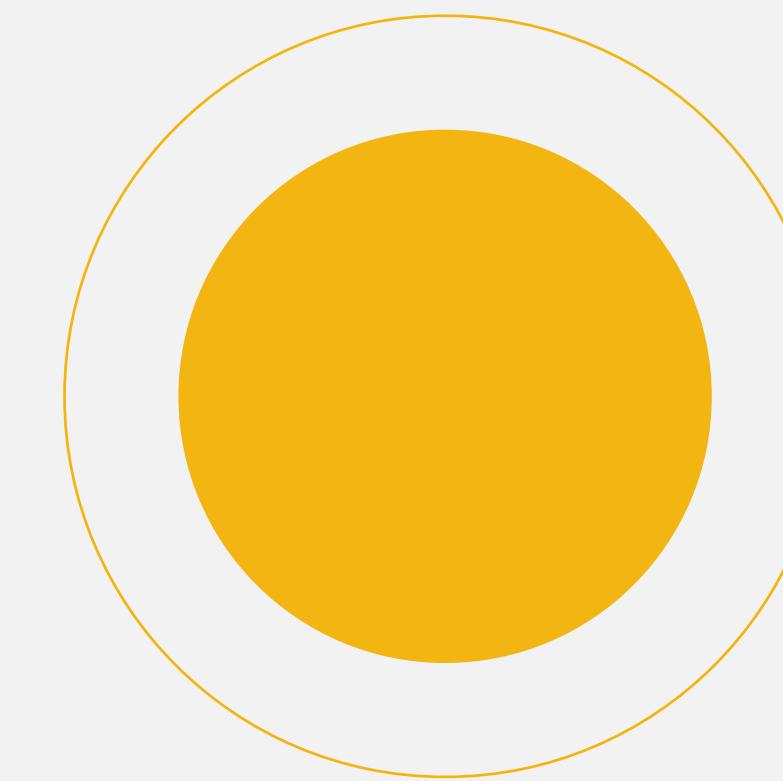
A experiência do usuário deve ser...



Confiável



Rápida



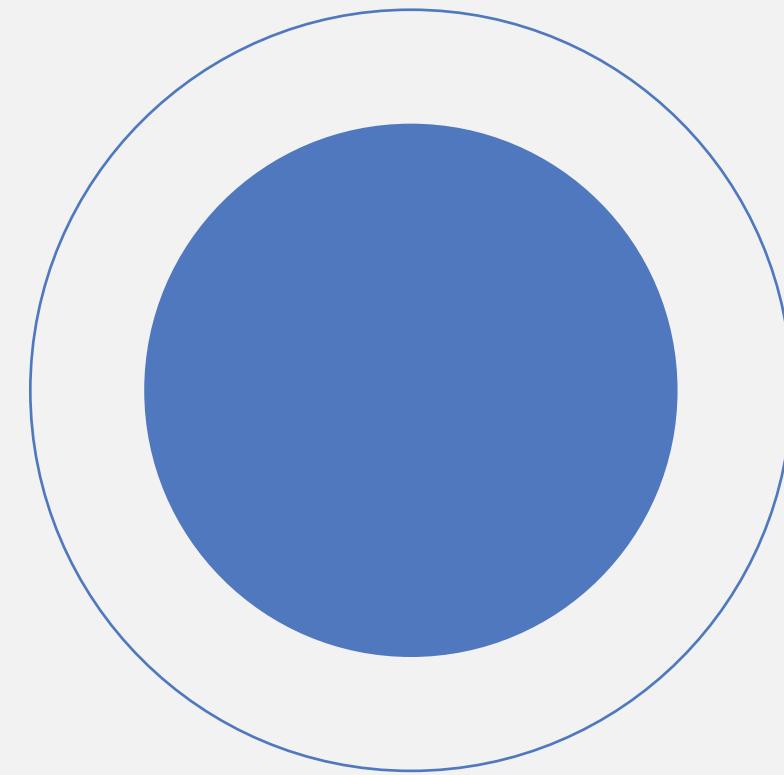
Fácil



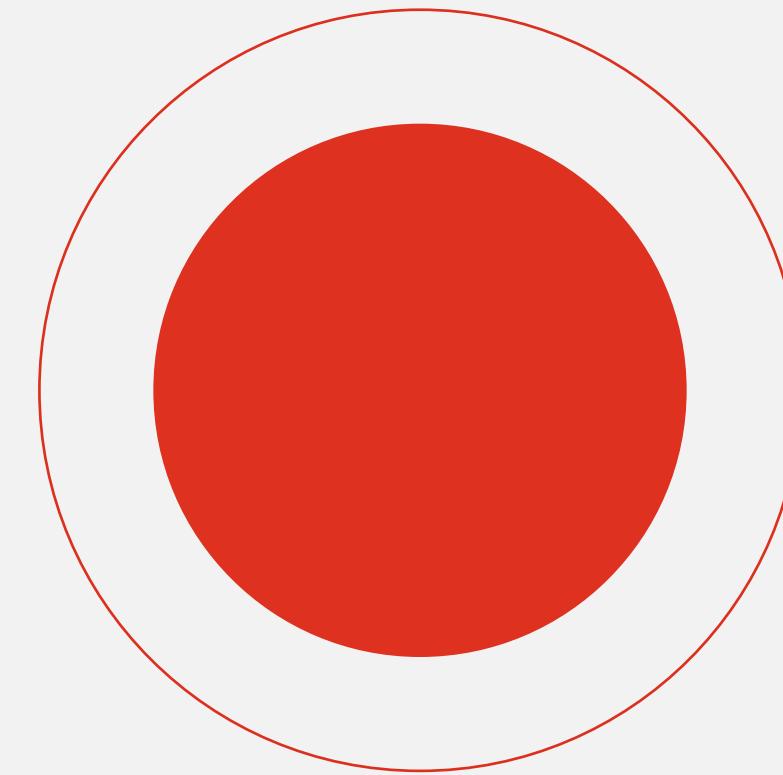
40%

dos usuários abandona um site se
ele demorar mais que **3 segundos**
para carregar

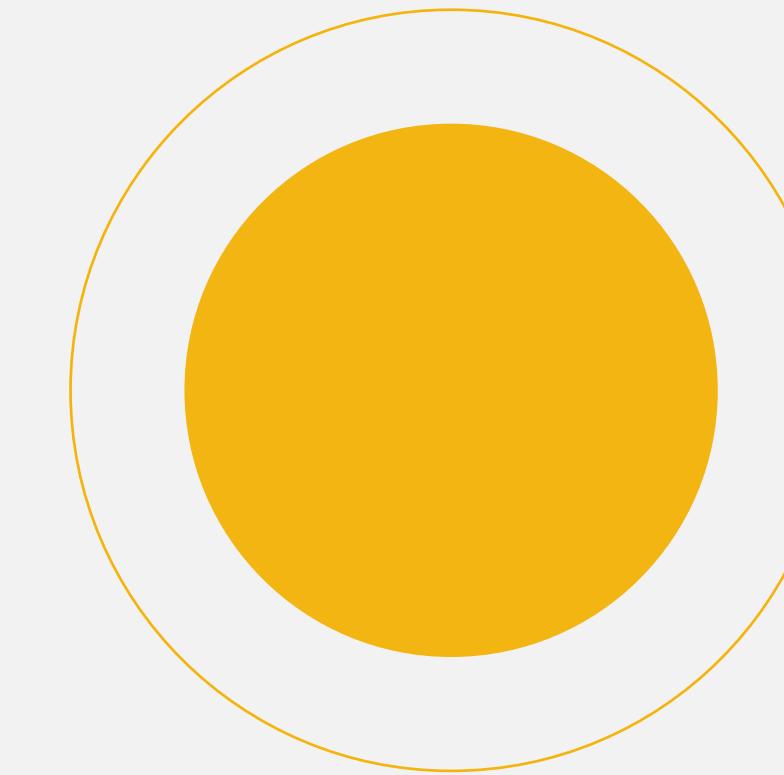
A experiência do usuário deve ser...



Confiável



Rápida



Engajada

Engajamento

Imersivo

Tela Cheia,
Aparência
nativa,
orientação de
tela, etc.

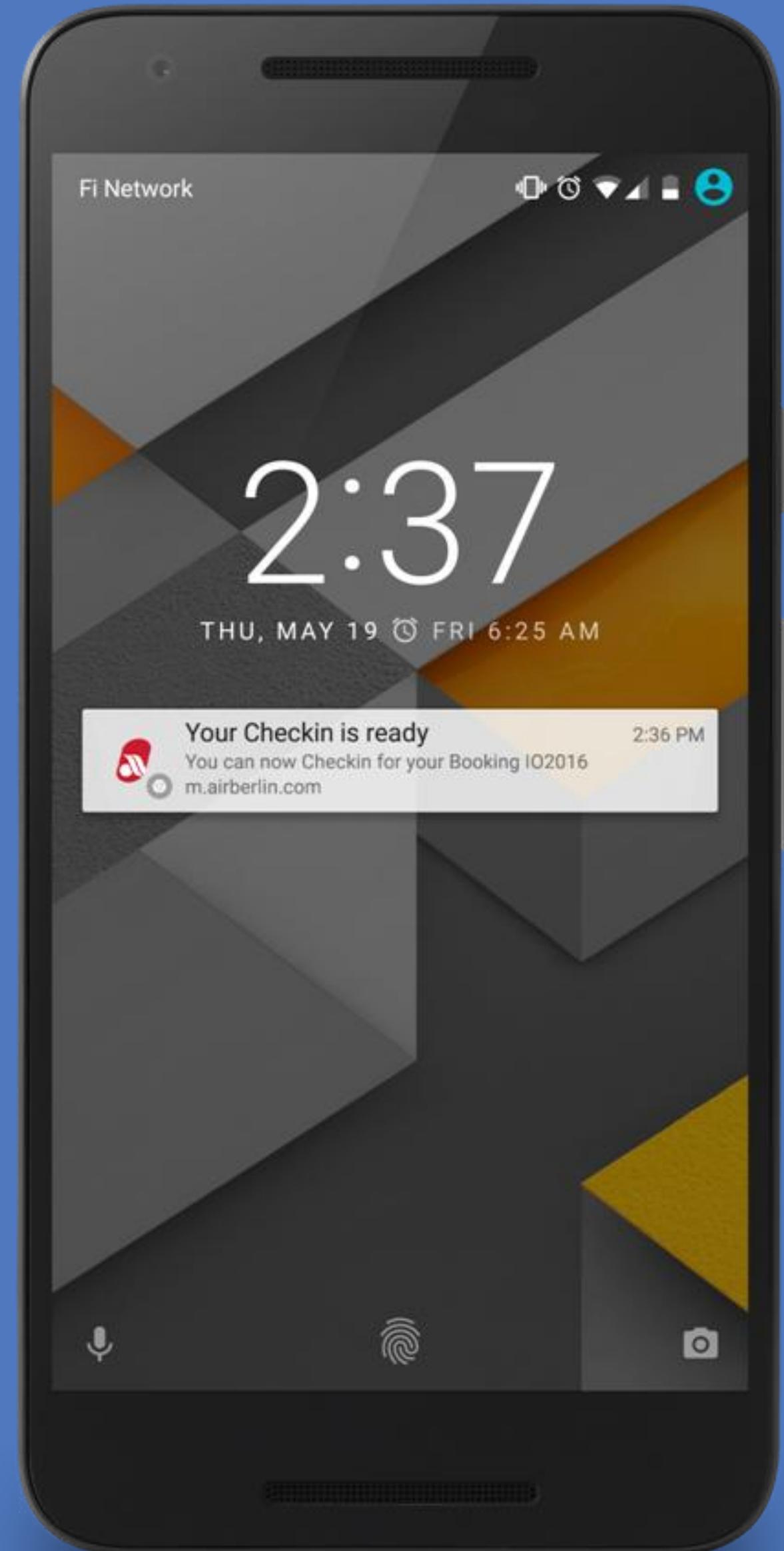
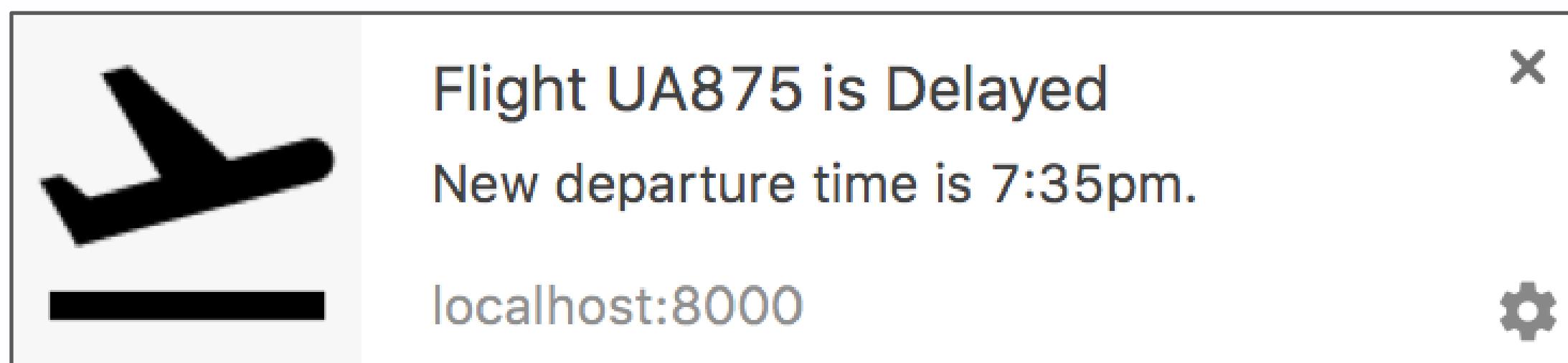
Tela Inicial

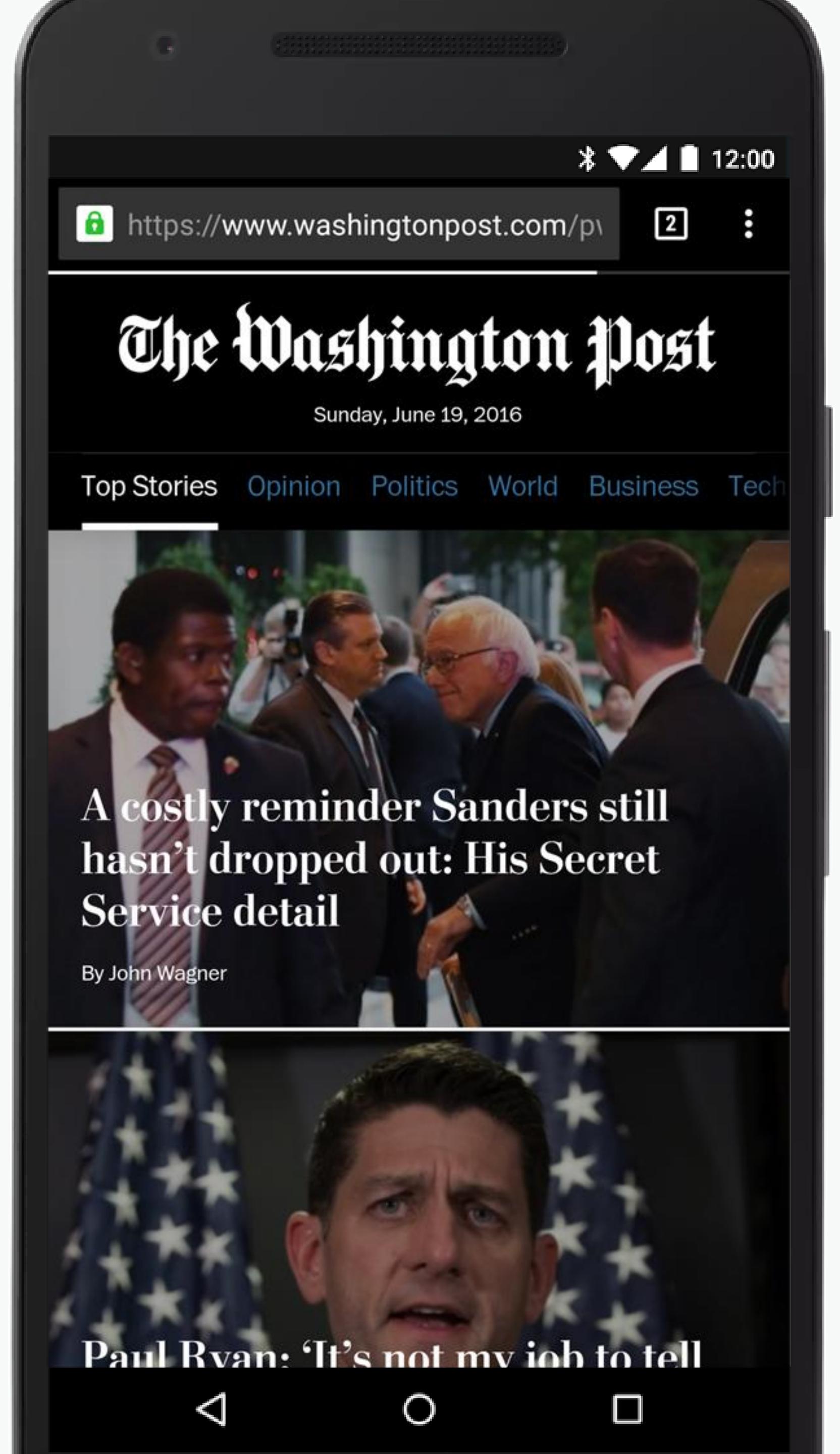
Um atalho na
tela inicial
facilita o
acesso

Notificações

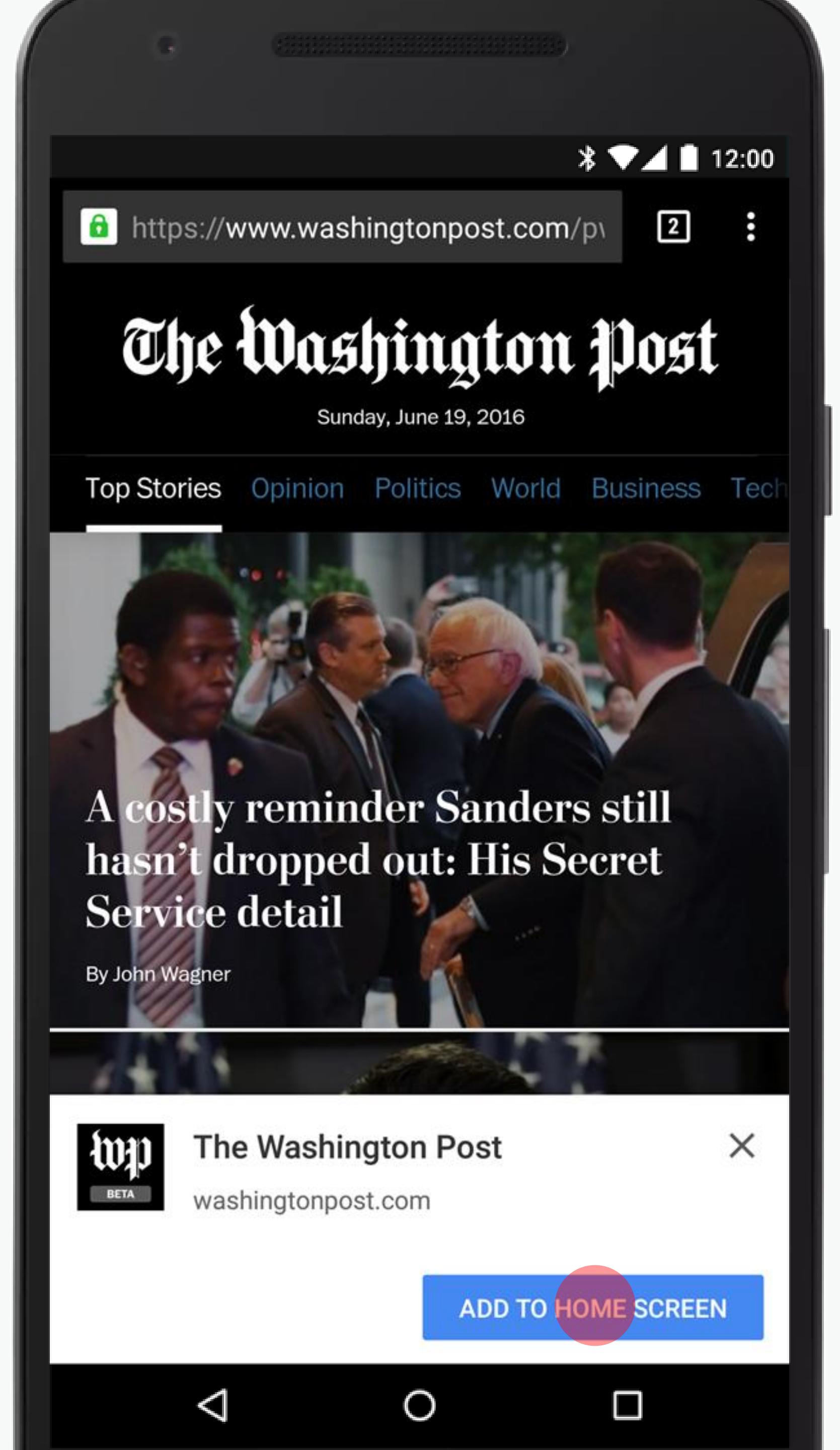
Notificações
Push

Web Push Notifications

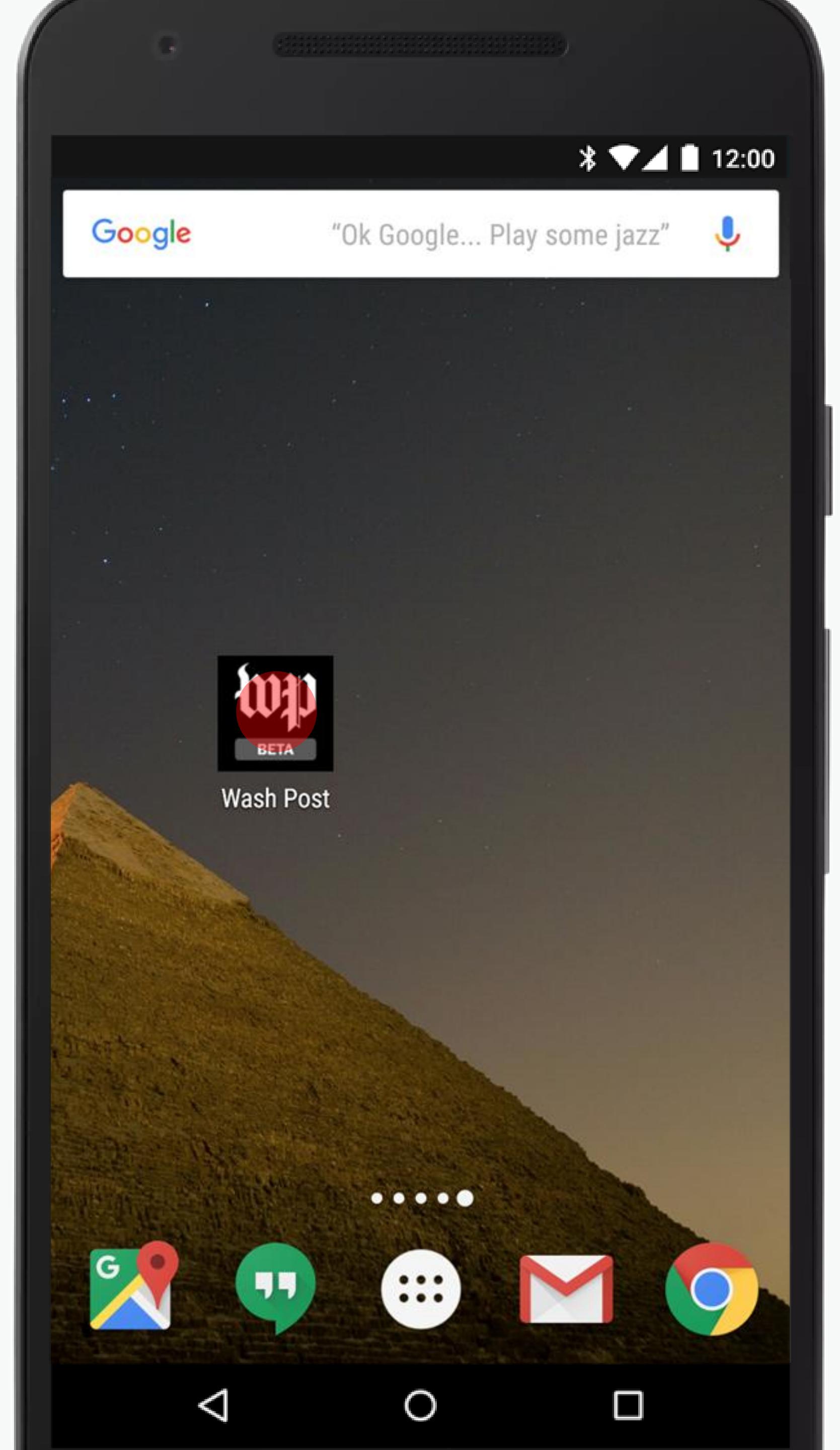




<https://wapo.com/pwa>







* □ 12:00



BETA

The Washington Post



* □ 12:00

The Washington Post

Sunday, June 19, 2016

Top Stories Opinion Politics World Business Tech



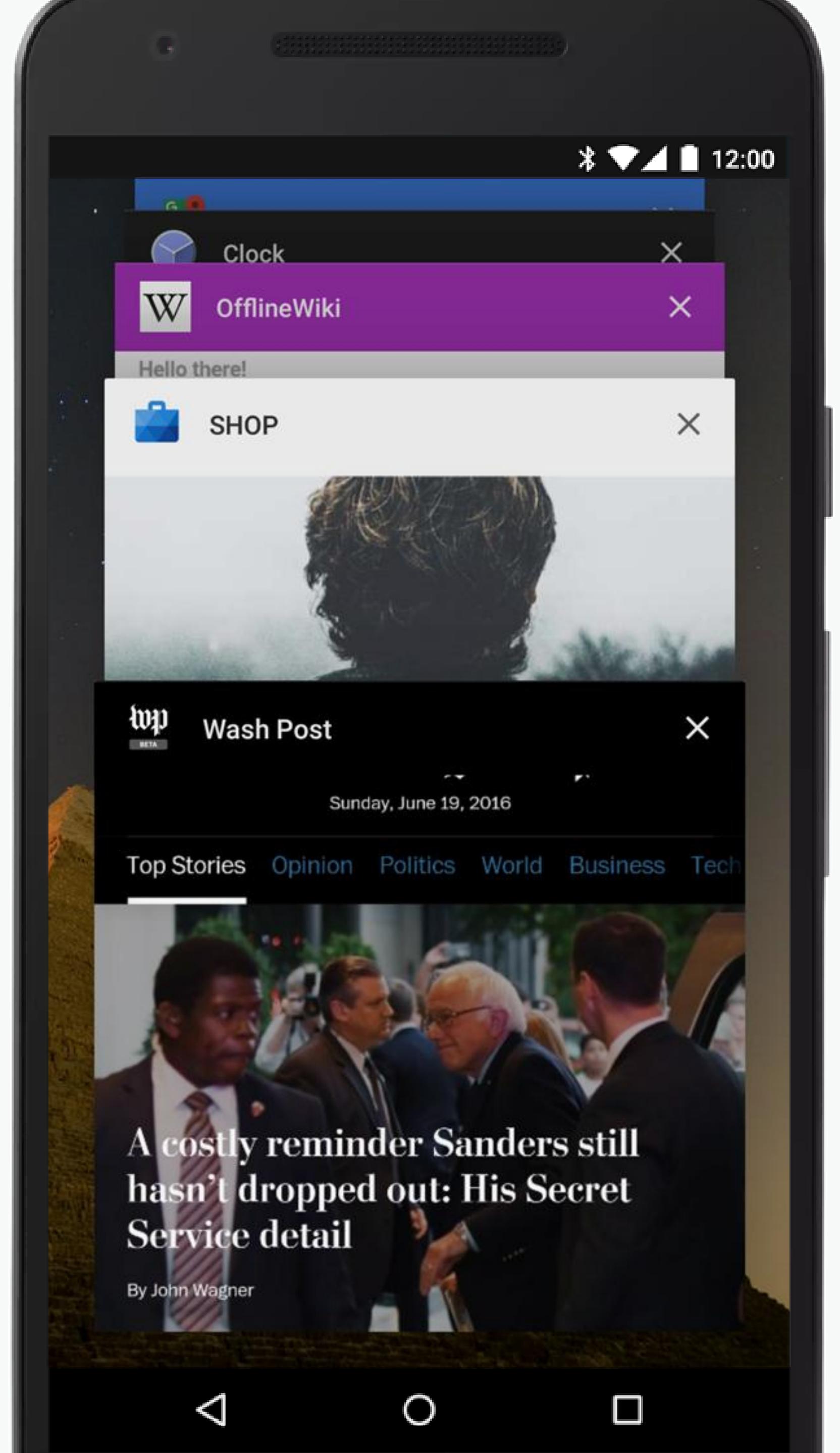
A costly reminder Sanders still
hasn't dropped out: His Secret
Service detail

By John Wagner



Paul Ryan: 'It's not my job to tell
delegates what to do'

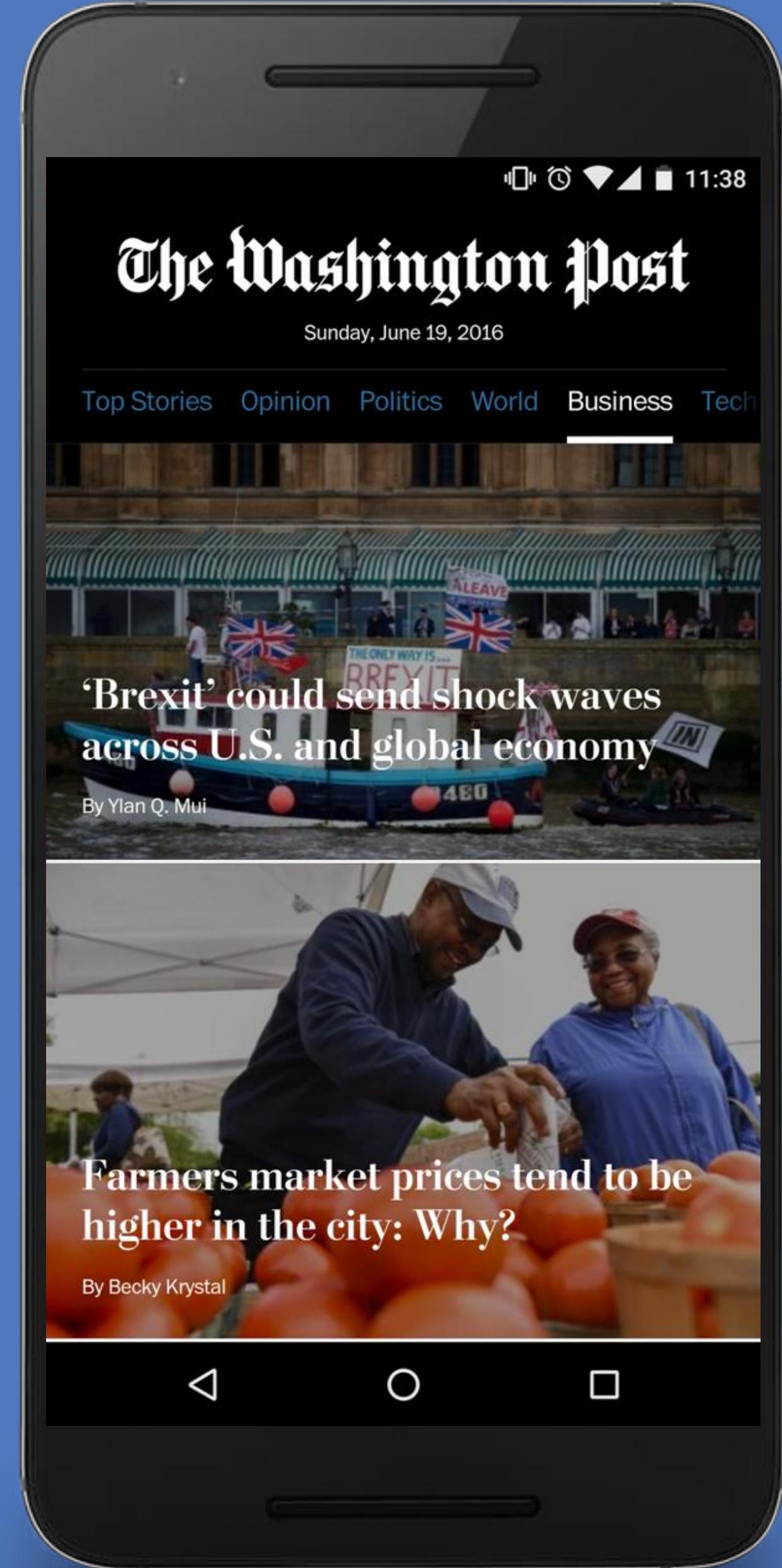




The Washington Post

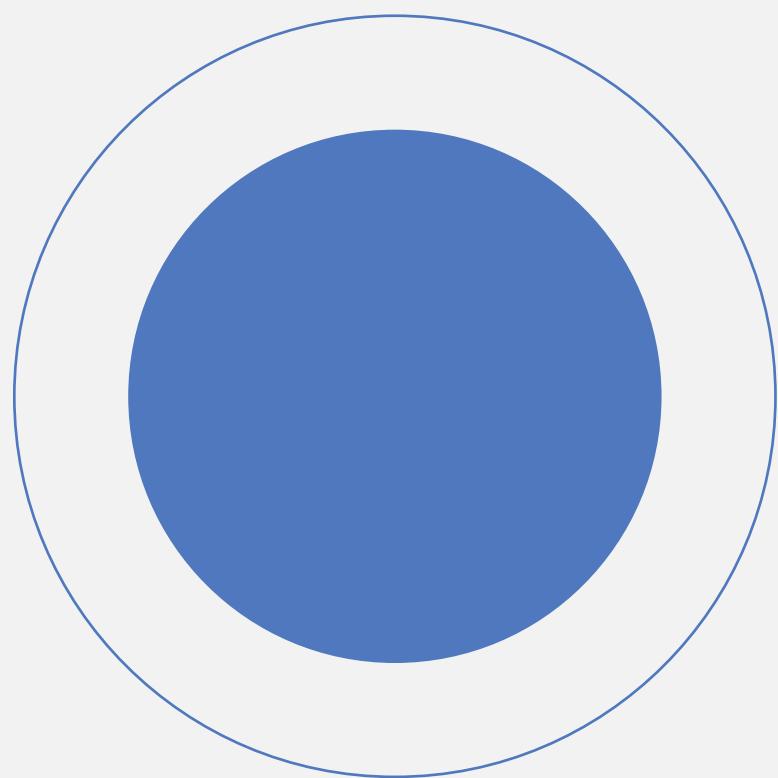
80ms

tempo de carregamento
da página de artigos
na versão Progressive Web App

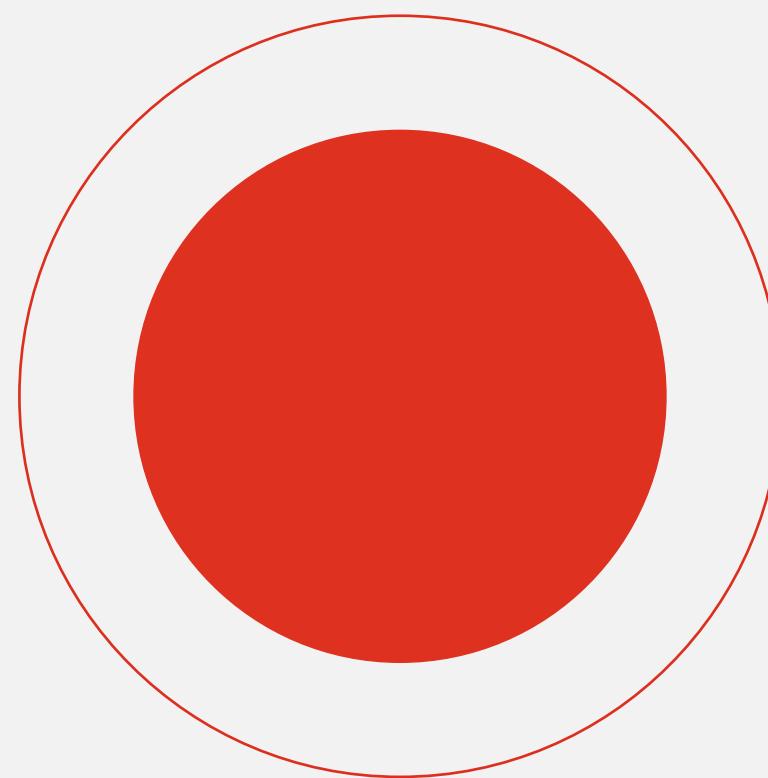


[Poynter article](#)

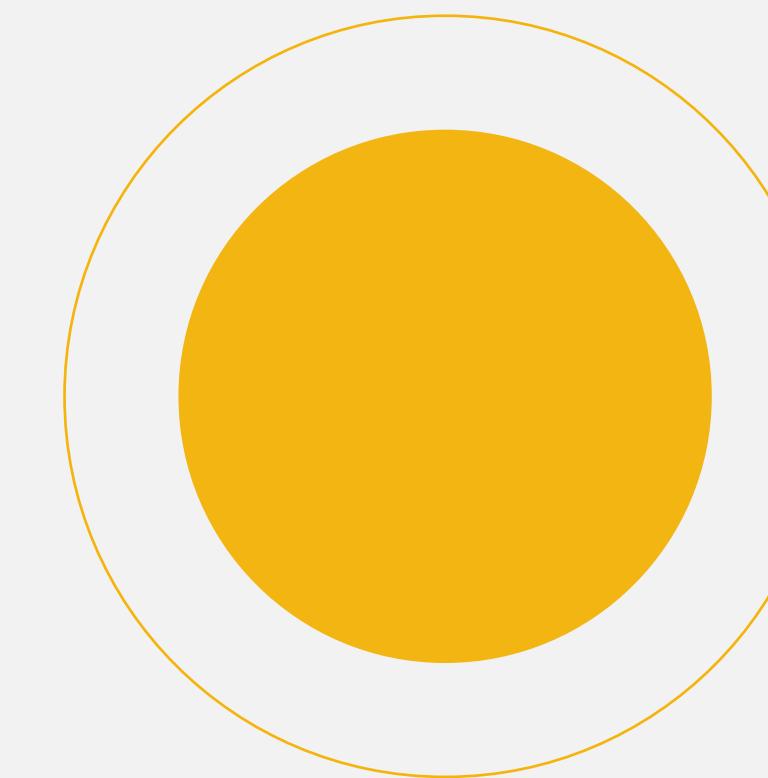
Progressive Web Apps são...



Confiáveis



Rápidos



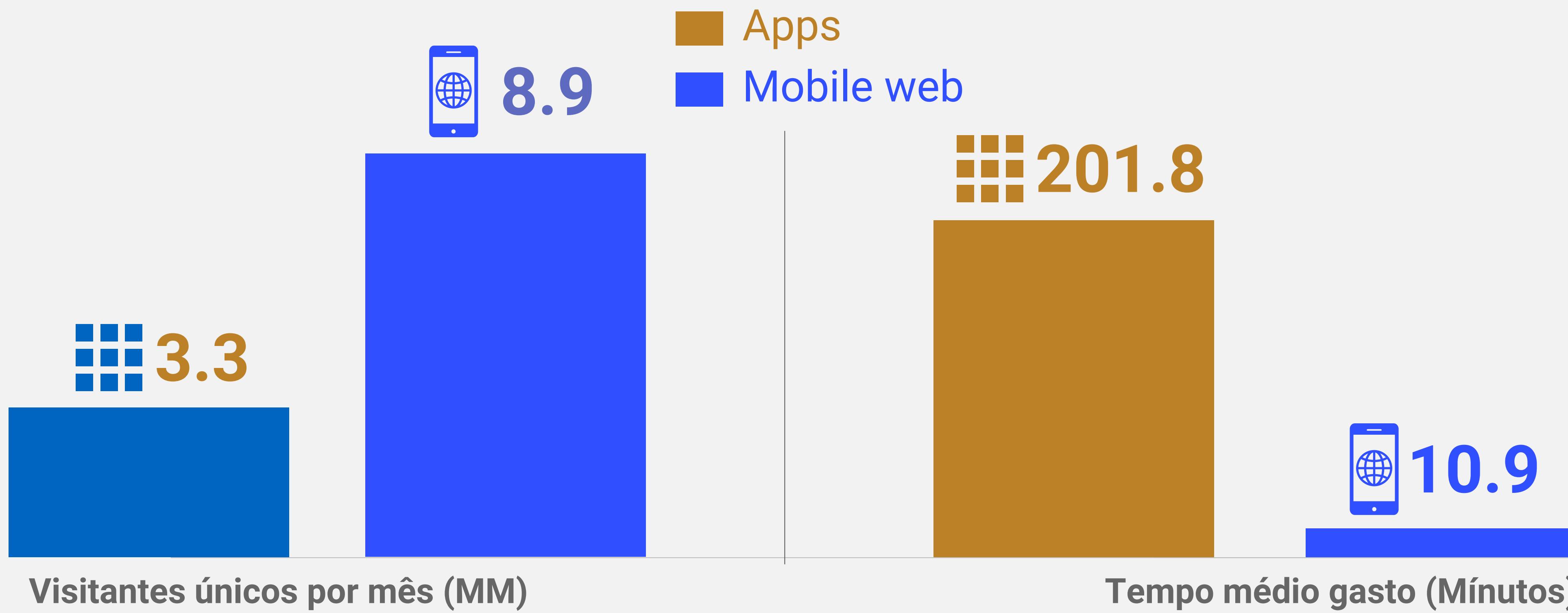
Engajados

1B de usuários mensais
do Google Chrome

A Web Hoje

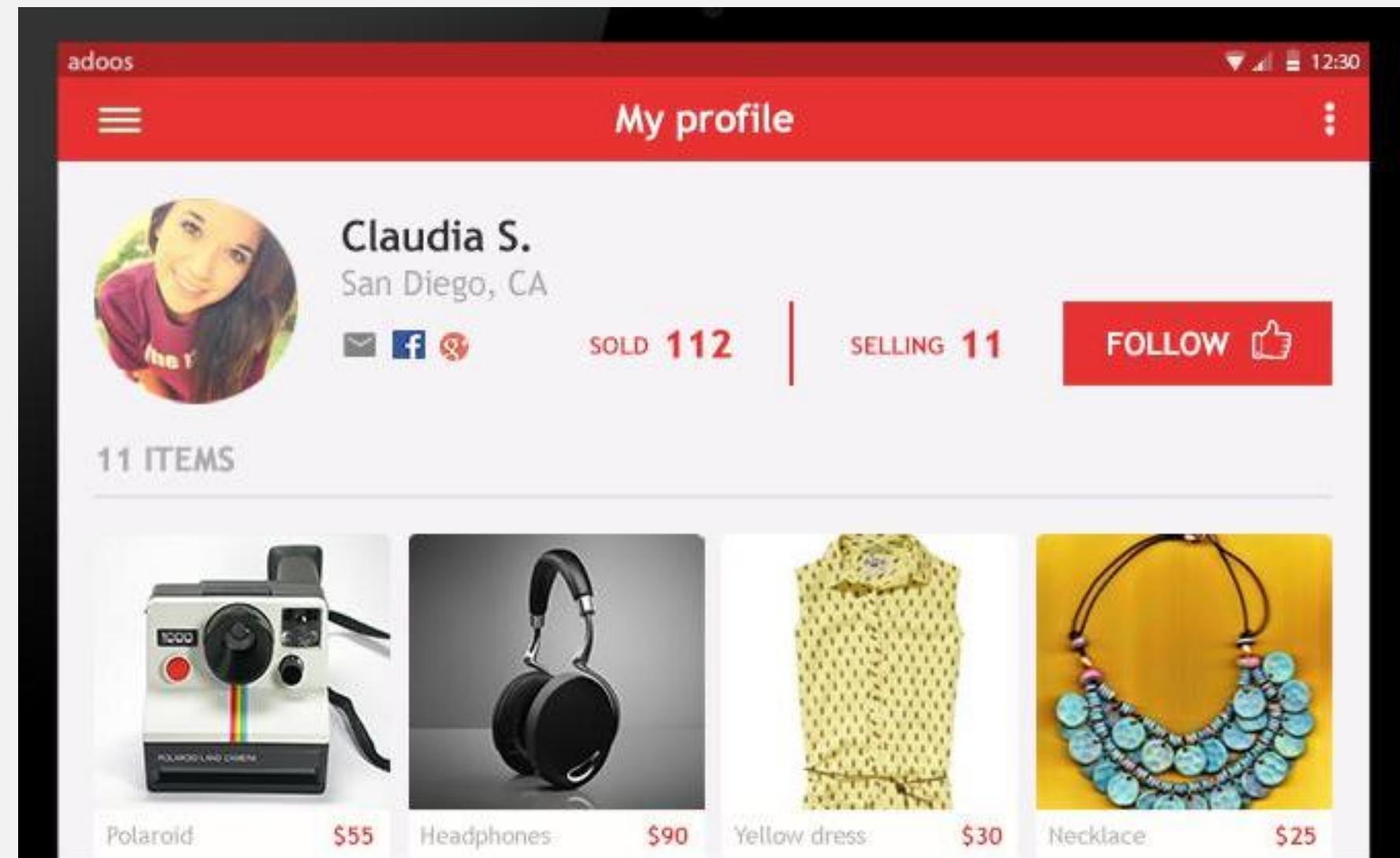
Broad Reach, Low Engagement

Top 1000 mobile apps .vs. top 1000 mobile web properties

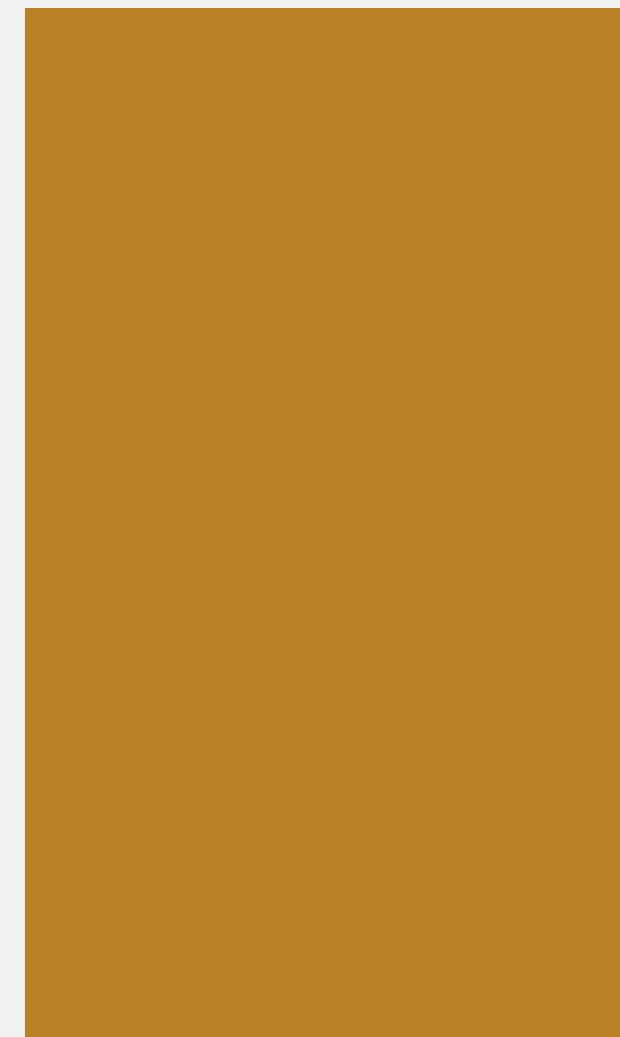


comScore Mobile Metrix, U.S., Age 18+, June 2015

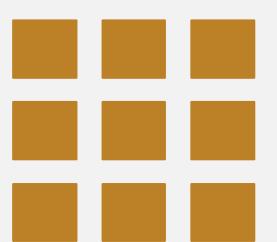
Selio – Custo de aquisição de usuários



€4.00



€0.35



Android App



Mobile Web

AliExpress

2x more

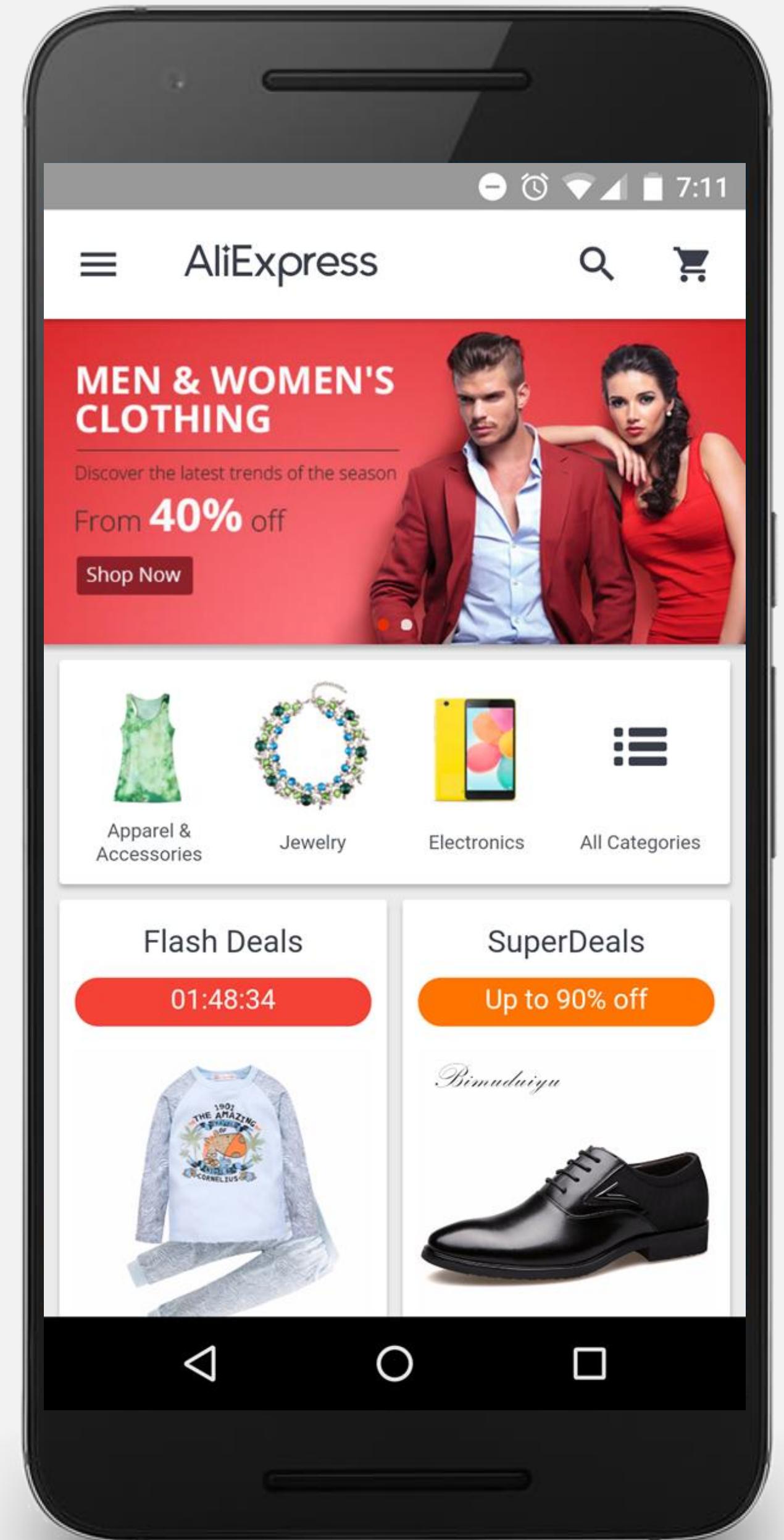
page views

74% increase

in time spent

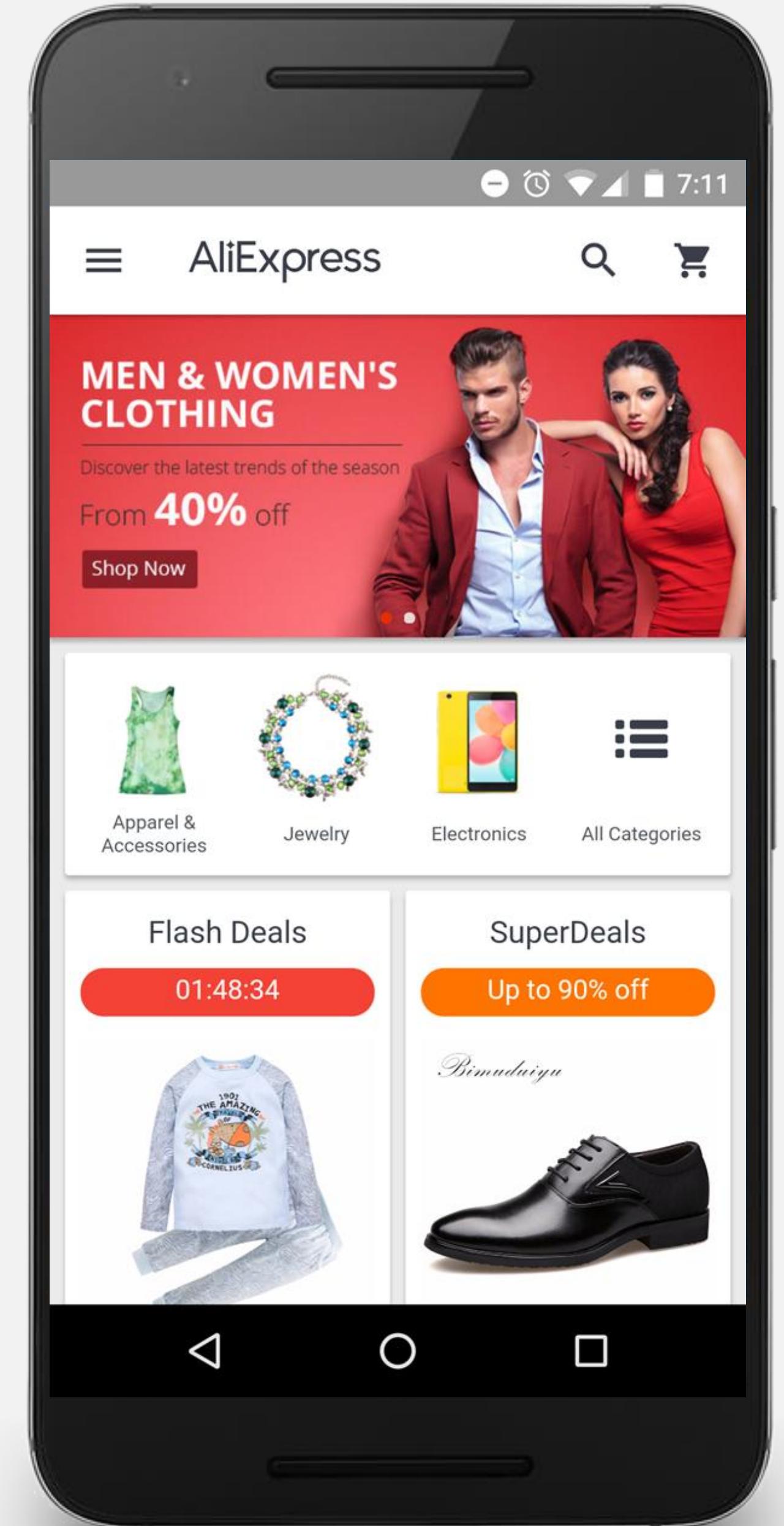
82% more

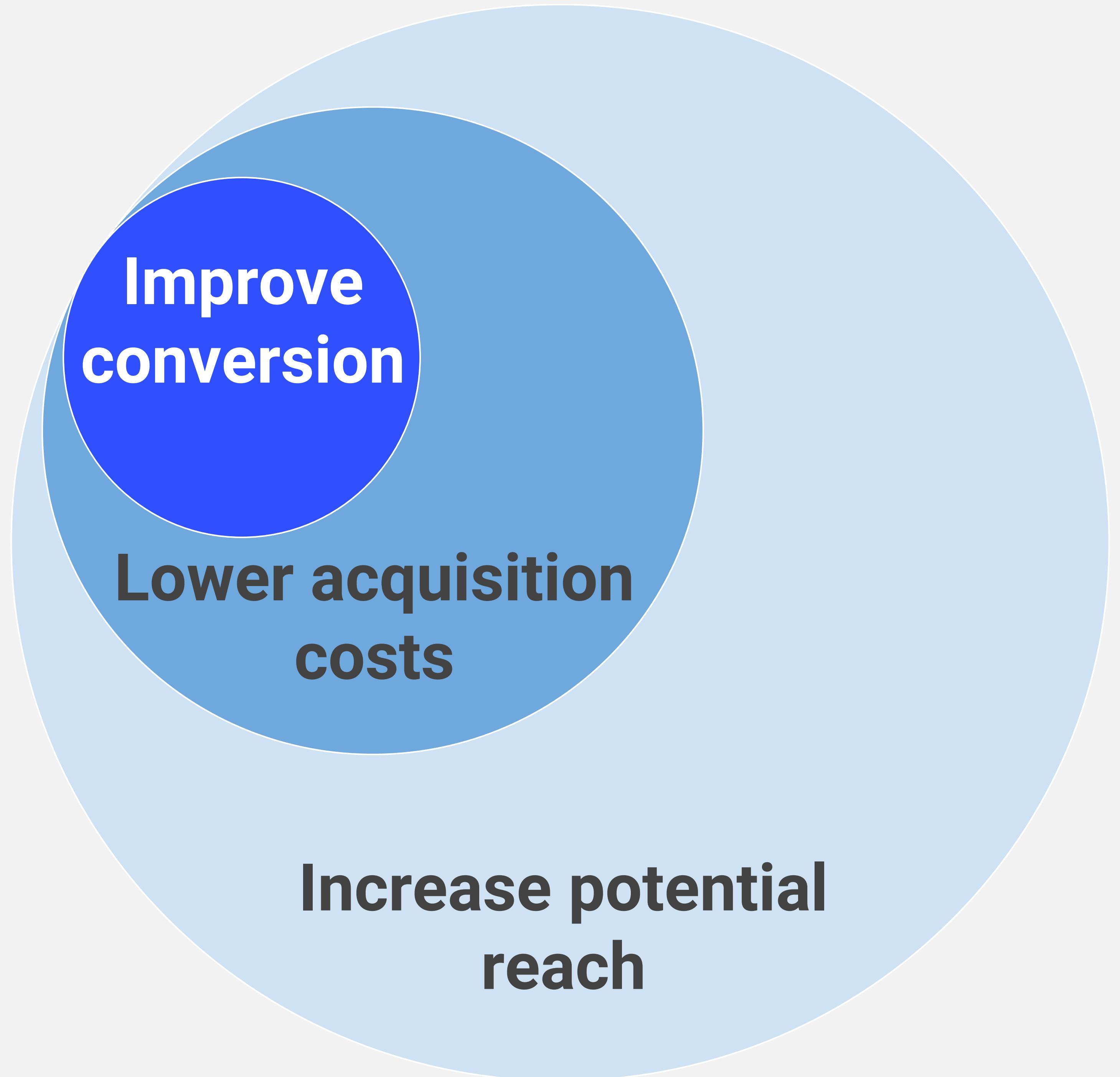
conversions on iOS



*"One of the reasons we built a **Progressive Web App** was to be able to **invest in the web experience across all browsers**. Not only did we see **huge benefits** on browsers that support the latest features, but we also got to see a bump **across the board**. That is the sign of a great investment, and one that will keep paying for itself as browsers evolve."*

— Lijun Chen, Director of AliExpress Mobile Team.





**Improve
conversion**

**Lower acquisition
costs**

**Increase potential
reach**

**Por que tudo isso é
importante?**

**Para entender como devemos
começar a pensar em PWA**

Começar do básico



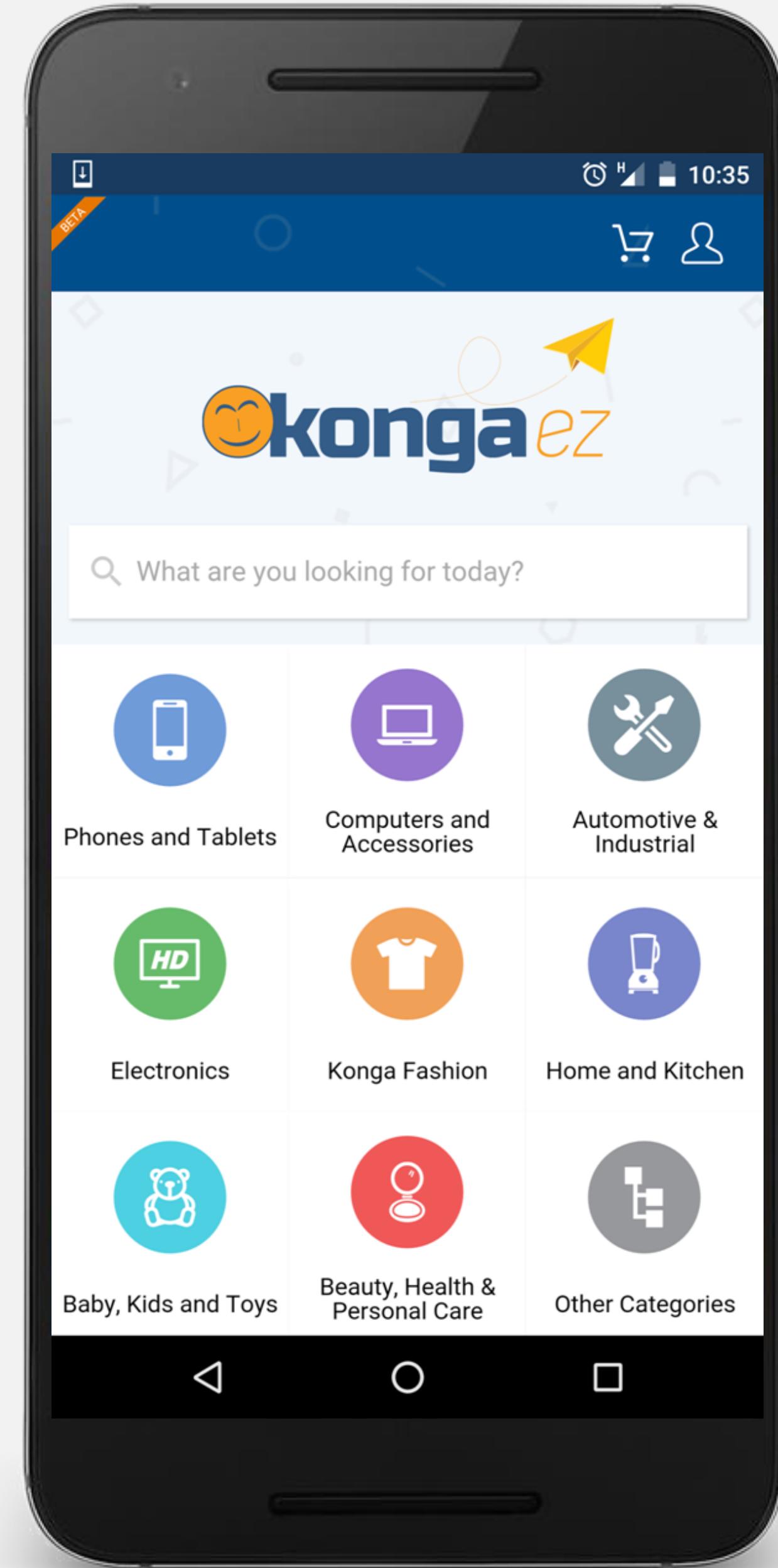
92% less data

for initial load

82% less data

to complete first transaction

Both data points are
compared to native app

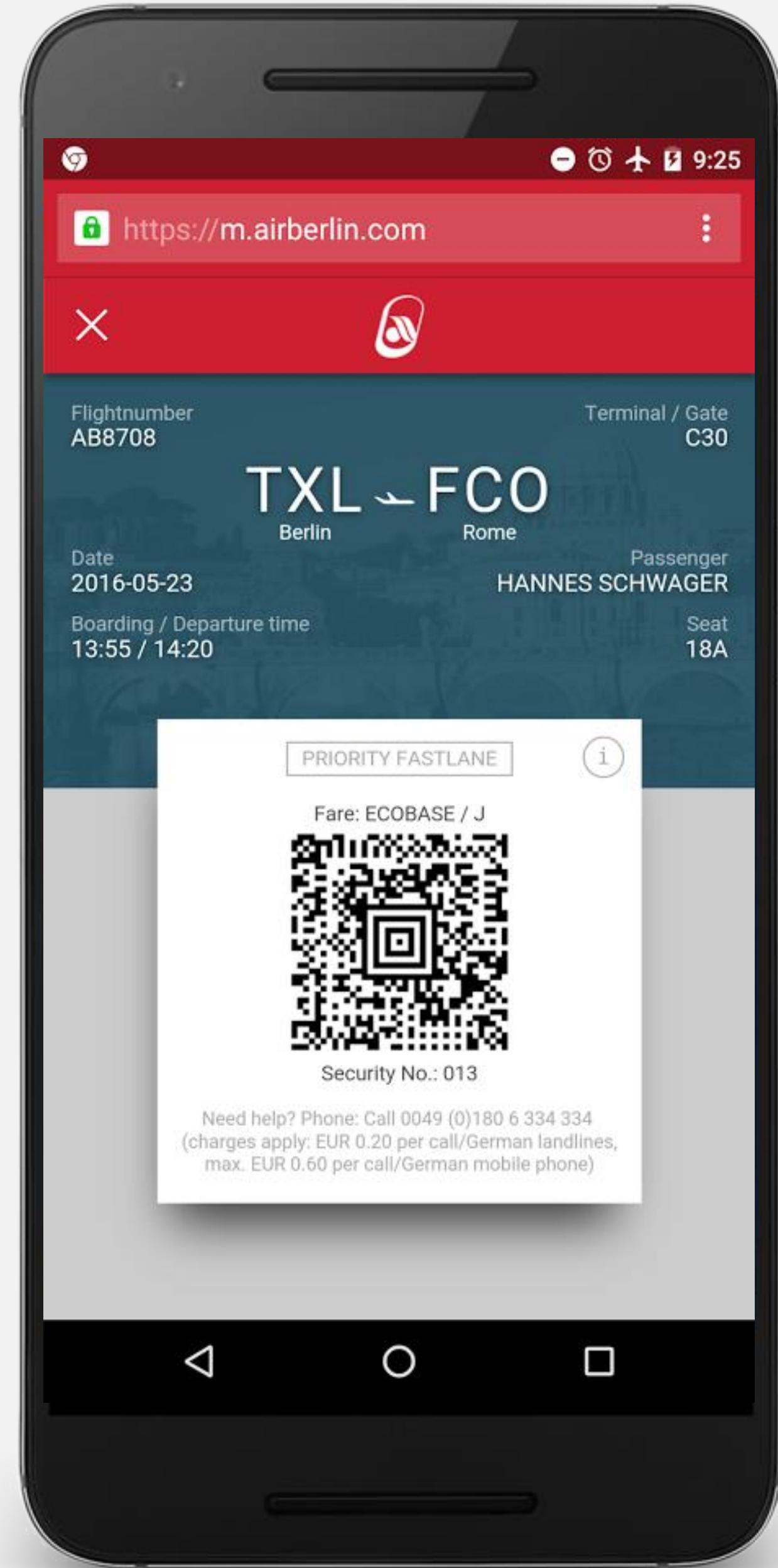


Construir uma versão inicial simples



<1s

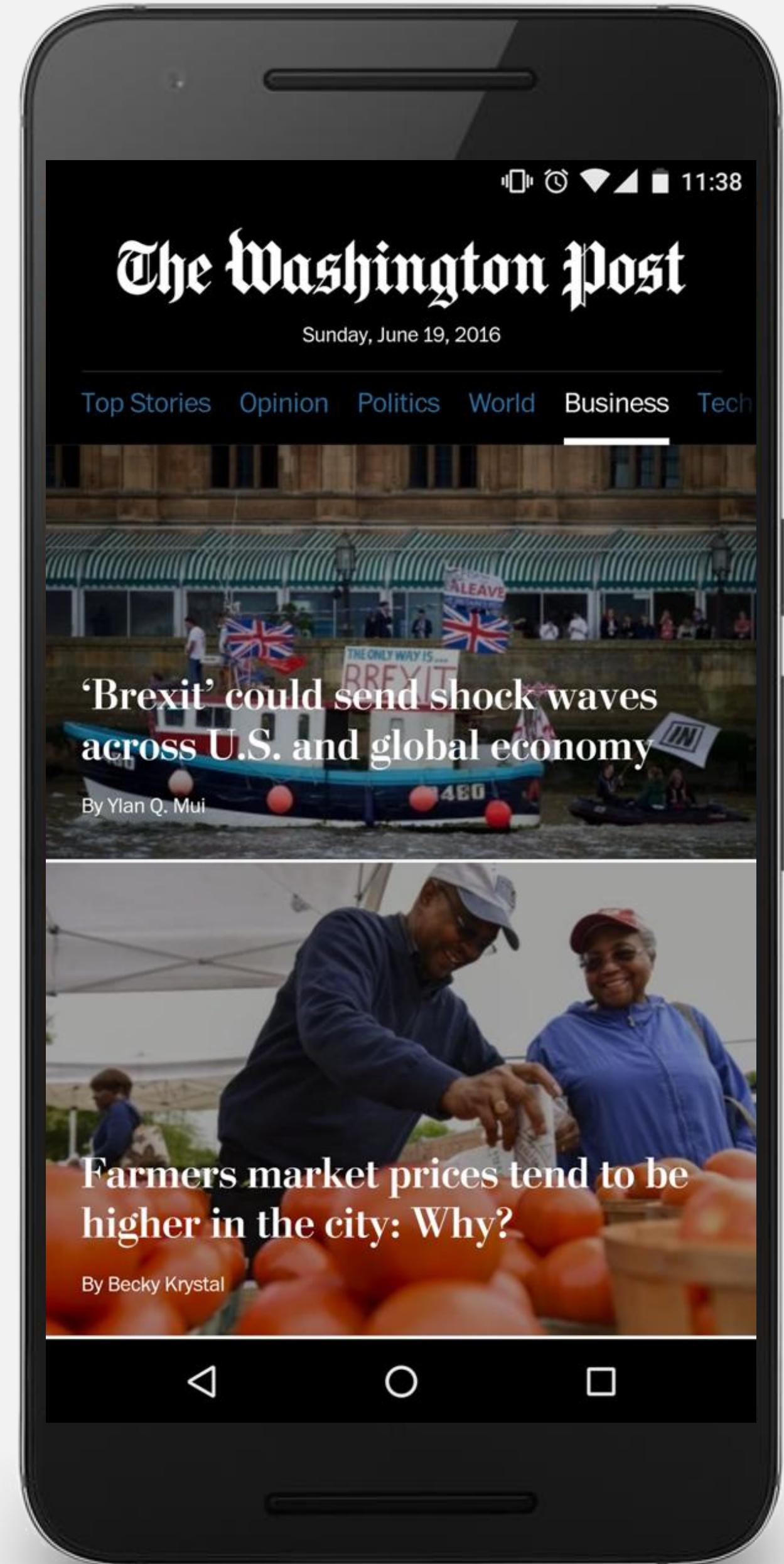
initial loading time and
even faster for sub-sequent loads





80ms

article page load time in
the Progressive Web App

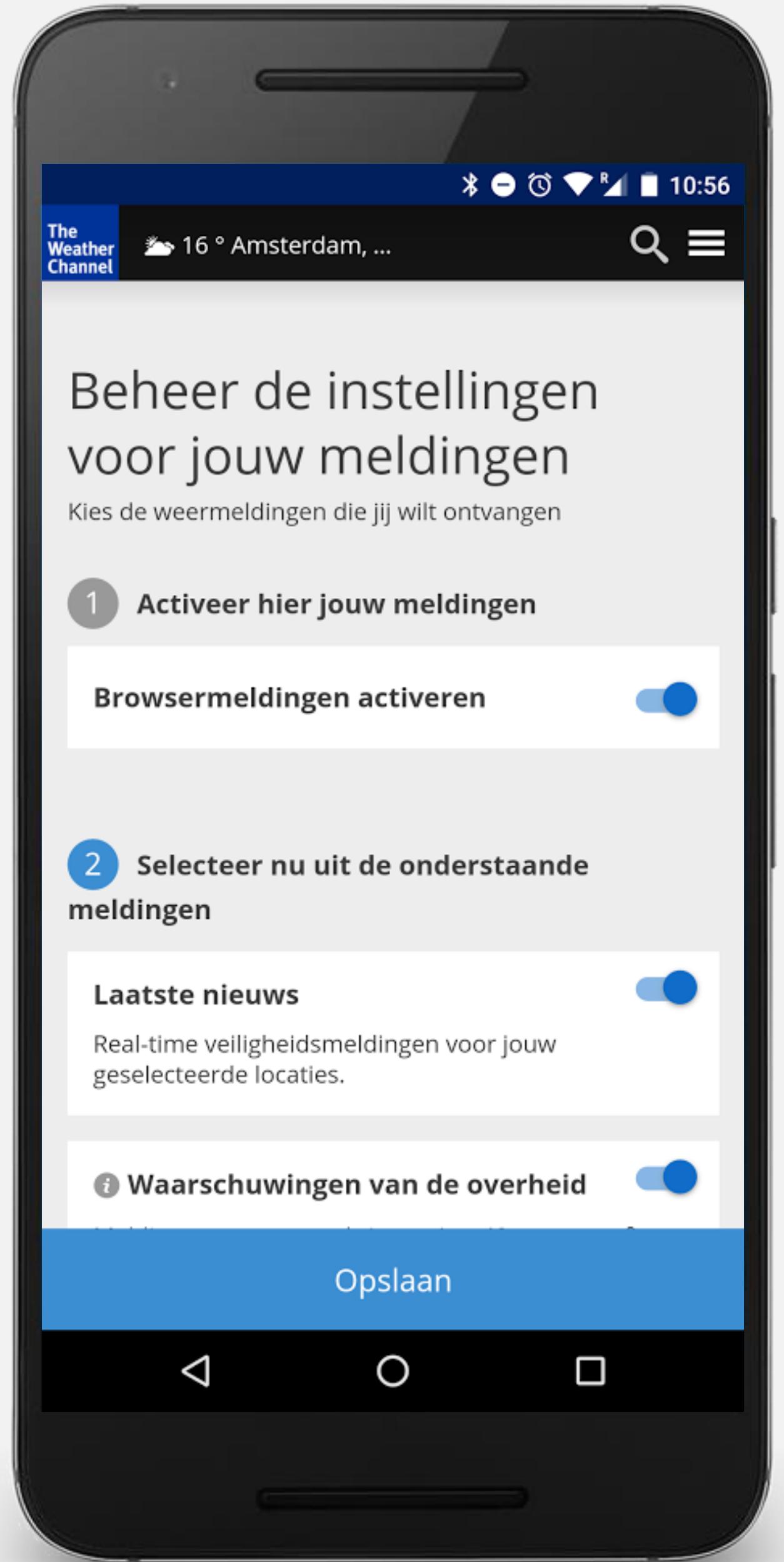


[How they did it](#)

Focar em certas funcionalidades



30+ languages
rolled out globally with web push
notifications

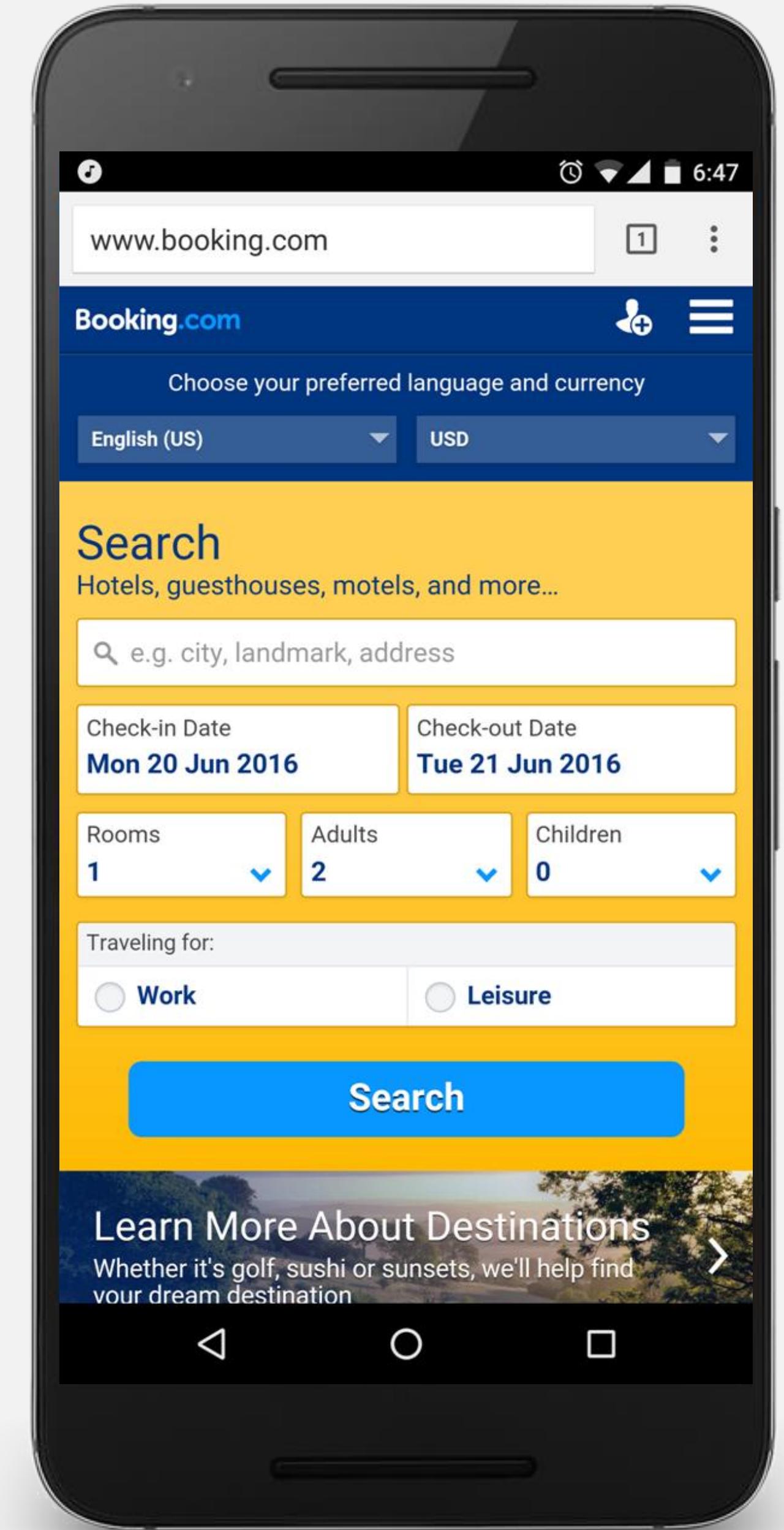


Booking.com

“Even for something as holistic as a Progressive Web App, we work in small steps in order to tackle issues one by one, and learn things quickly.”

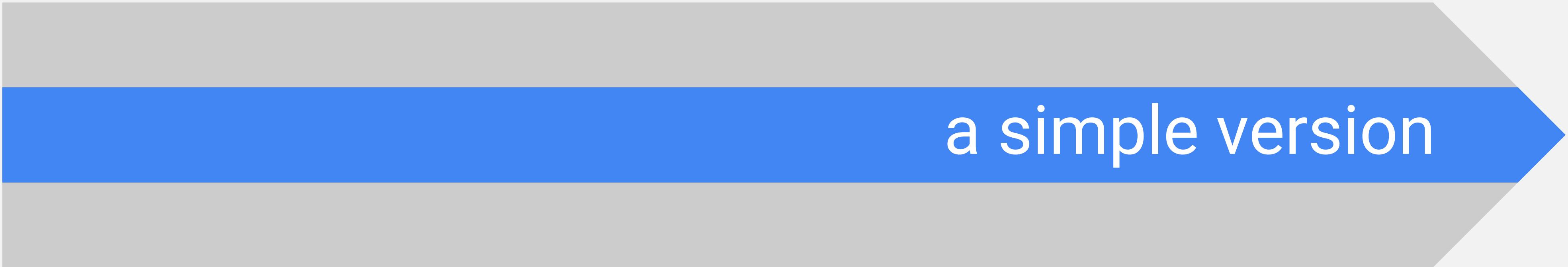
- Jesse Yang, engineer

[Booking Developer Blog Post](#)





from the ground up



a simple version



a single feature



AliExpress

airberlin

The Washington Post

Mobify



letras*

5miles

okonga.com



Walgreens
at the corner of happy & healthy®

SUUMO
ス-モ



タウンワーク
TOWNWORK

Flipkart



PURE
FORMULAS™

snapdeal

KASKUS

JUMIA

Jalantikus

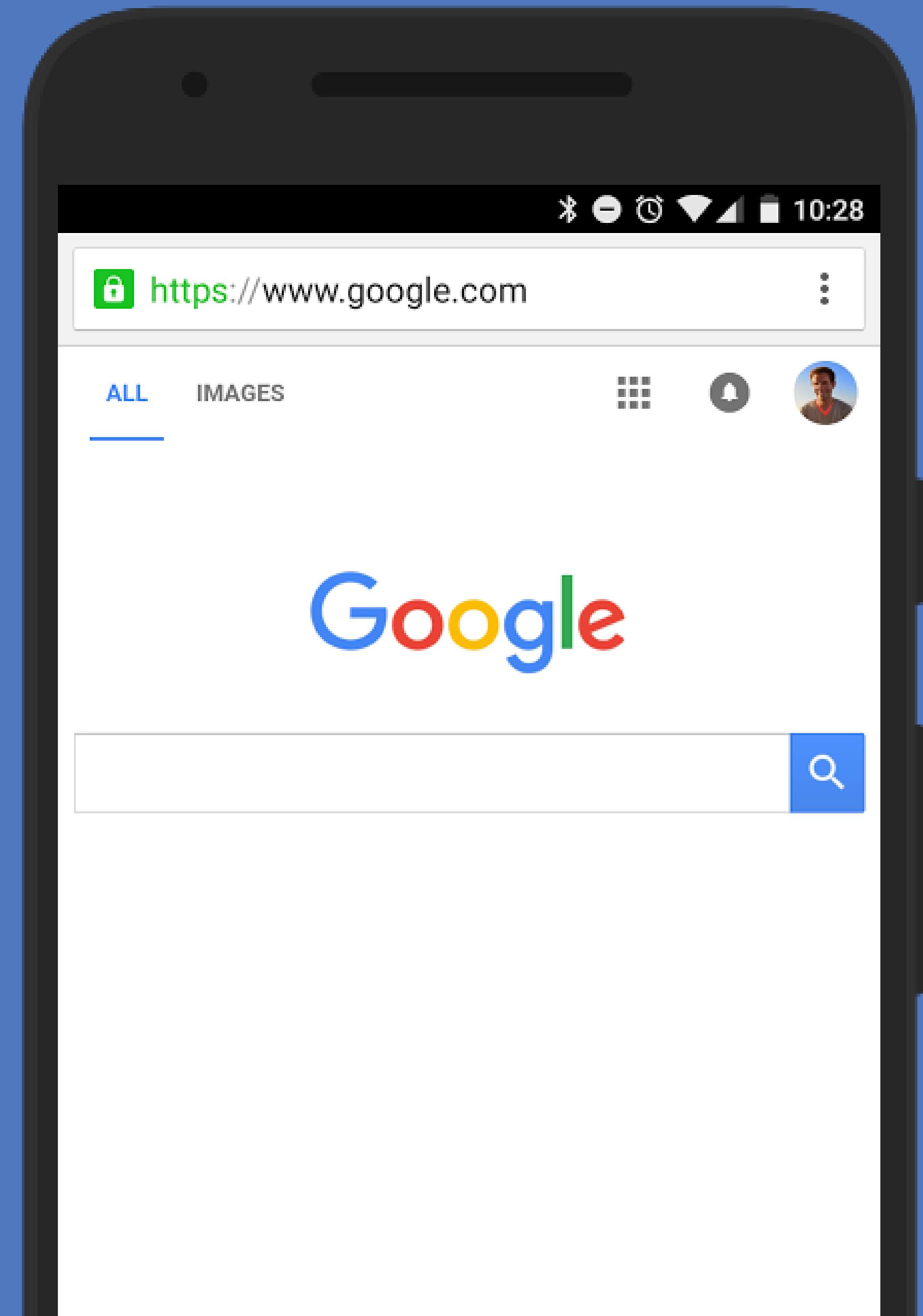
Booking.com

Como começamos?

Mantenha-se seguro



HTTPS: Conexão segura entre cliente e servidor



Mantenha os usuários seguros



Confiabilidade
Este site é mesmo
quem diz ser?



Integridade
Será que alguém
adulterou esta
página?



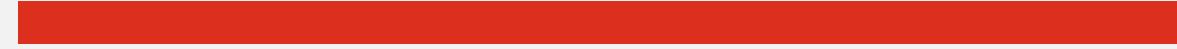
Privacidade
Alguém pode ver
o que eu estou
acessando?

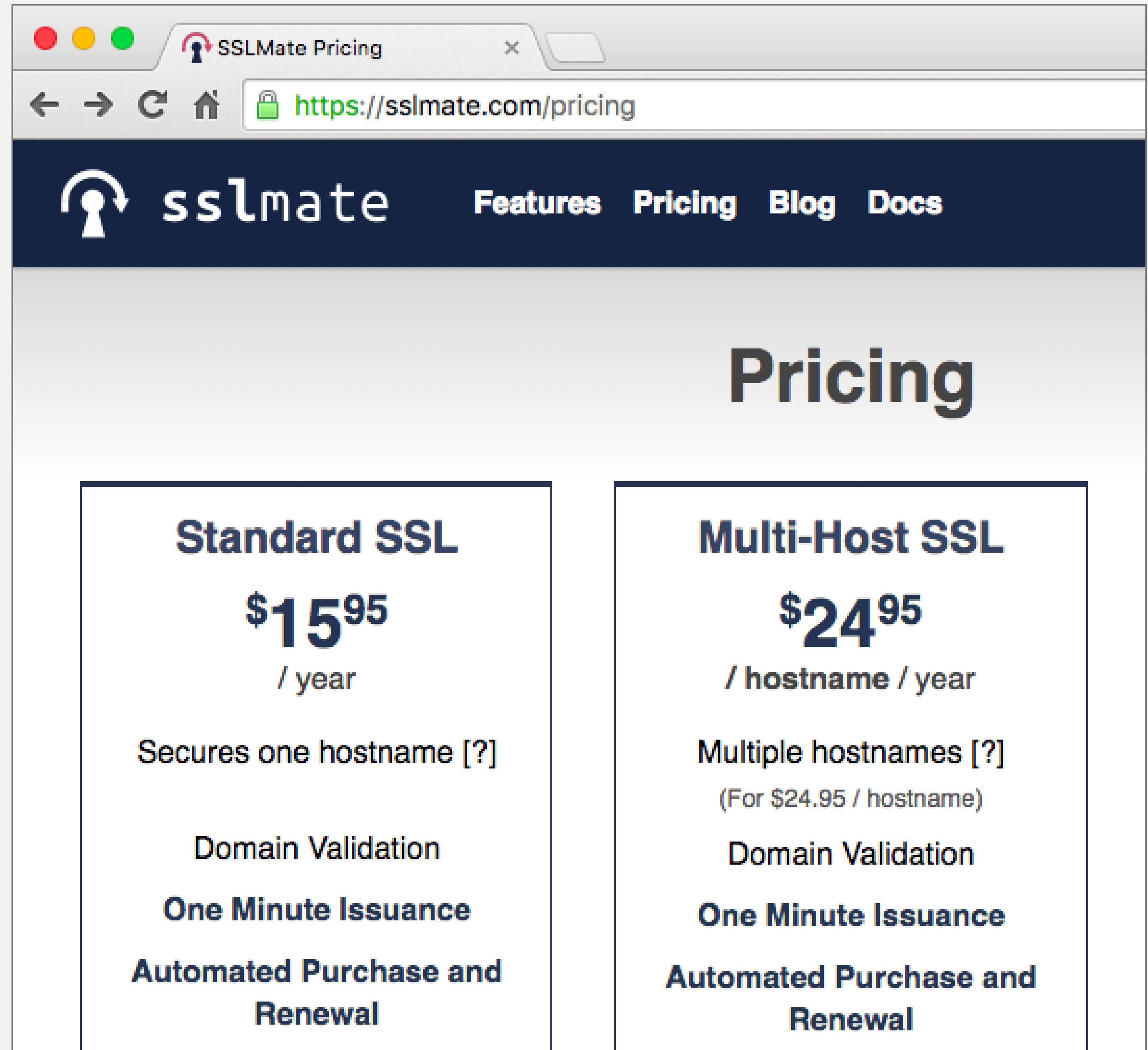
O custo do HTTPS

Certificado



Ranking de
Pesquisa





A screenshot of a web browser displaying the SSLMate Pricing page. The address bar shows the URL <https://sslmate.com/pricing>. The page has a dark blue header with the SSLMate logo and navigation links for Features, Pricing, Blog, and Docs. The main content area features two large boxes: 'Standard SSL' on the left and 'Multi-Host SSL' on the right, both with bold price tags and descriptions.

Standard SSL

\$15⁹⁵

/ year

Secures one hostname [?]

Domain Validation

One Minute Issuance

**Automated Purchase and
Renewal**

Multi-Host SSL

\$24⁹⁵

/ hostname / year

Multiple hostnames [?]

(For \$24.95 / hostname)

Domain Validation

One Minute Issuance

**Automated Purchase and
Renewal**



Let's Encrypt

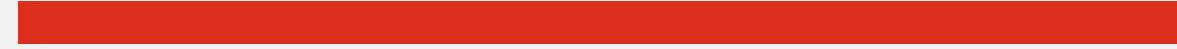
Let's Encrypt is a trademark of the Internet Security Research Group.

O custo do HTTPS

Certificado



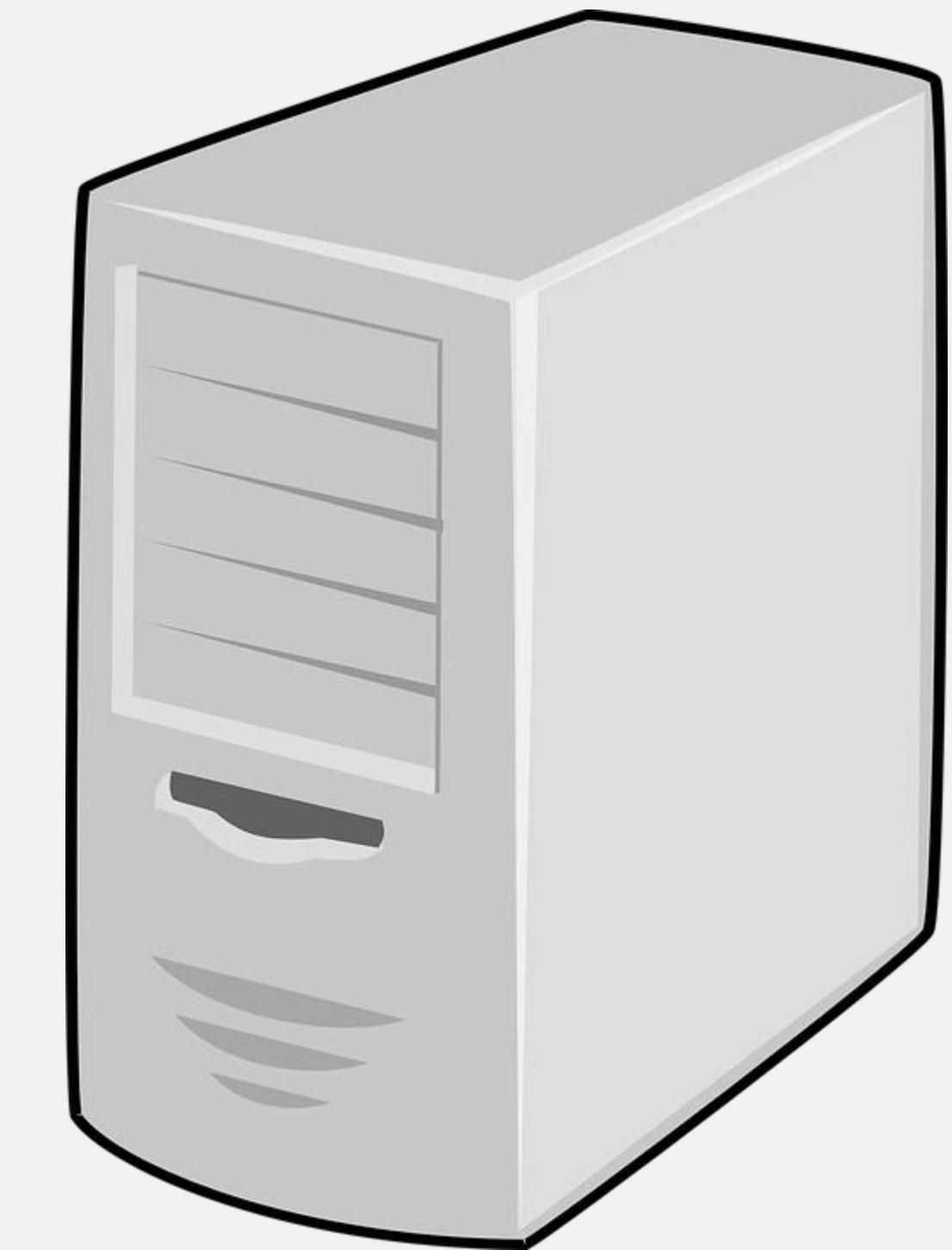
Ranking de
Pesquisa

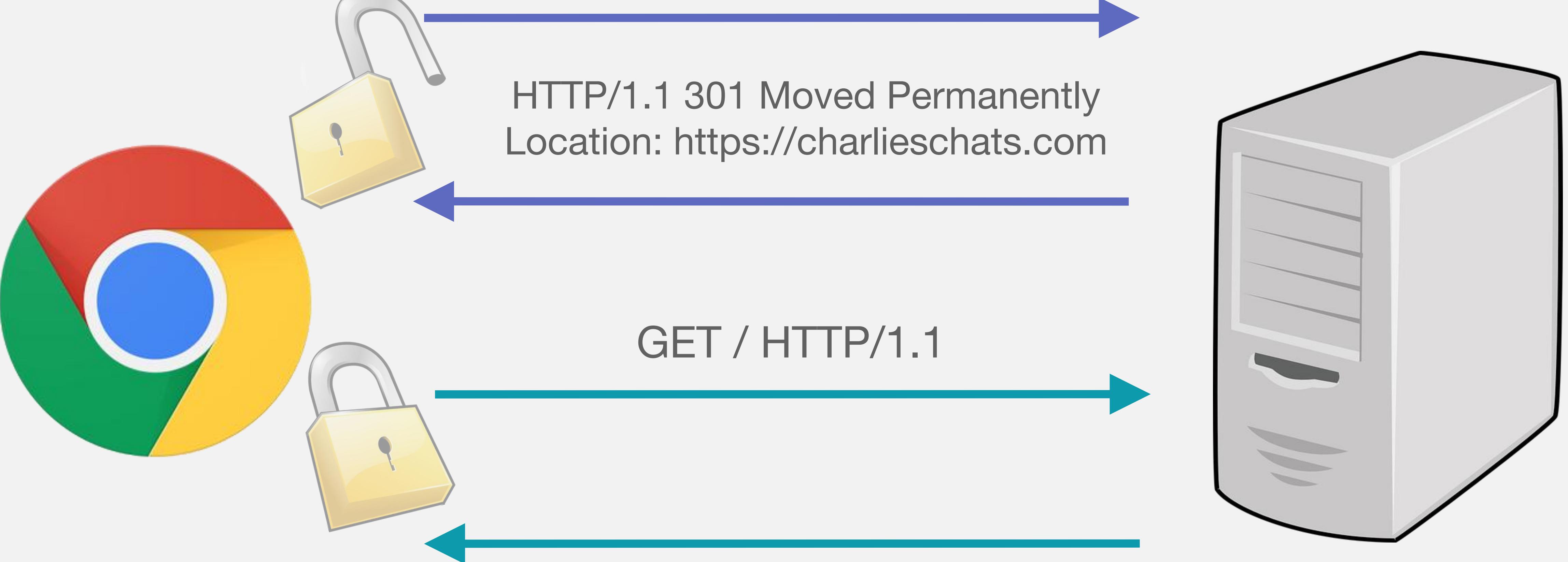




GET / HTTP/1.1

HTTP/1.1 301 Moved Permanently
Location: <https://charlieschats.com>





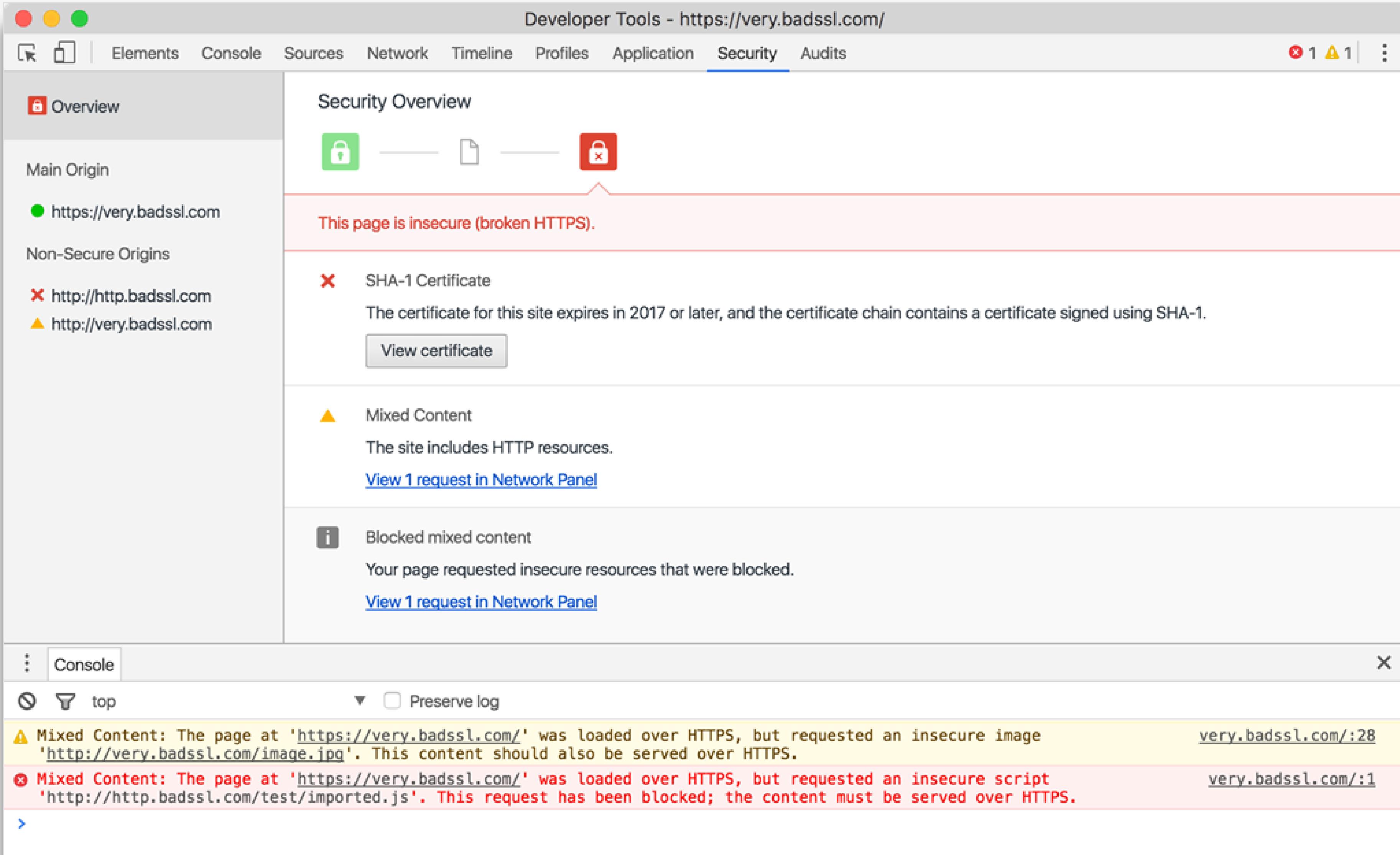
GET / HTTP/1.1

HTTP/1.1 301 Moved Permanently
Location: https://charlieschats.com

GET / HTTP/1.1

<link rel="canonical" href="https://charlieschats.com">

Chrome DevTools Security Panel



The screenshot shows the Chrome DevTools Security Panel for the URL `https://very.badssl.com/`. The main panel displays a "Security Overview" with three icons: a green lock for the main origin, a white document for non-secure origins, and a red lock with a crossed-out padlock for mixed content. Below this, a red banner states: "This page is insecure (broken HTTPS)". The left sidebar lists "Main Origin" as `https://very.badssl.com` (green dot) and "Non-Secure Origins" as `http://http.badssl.com` (red cross) and `http://very.badssl.com` (yellow triangle). The main content area details three issues:

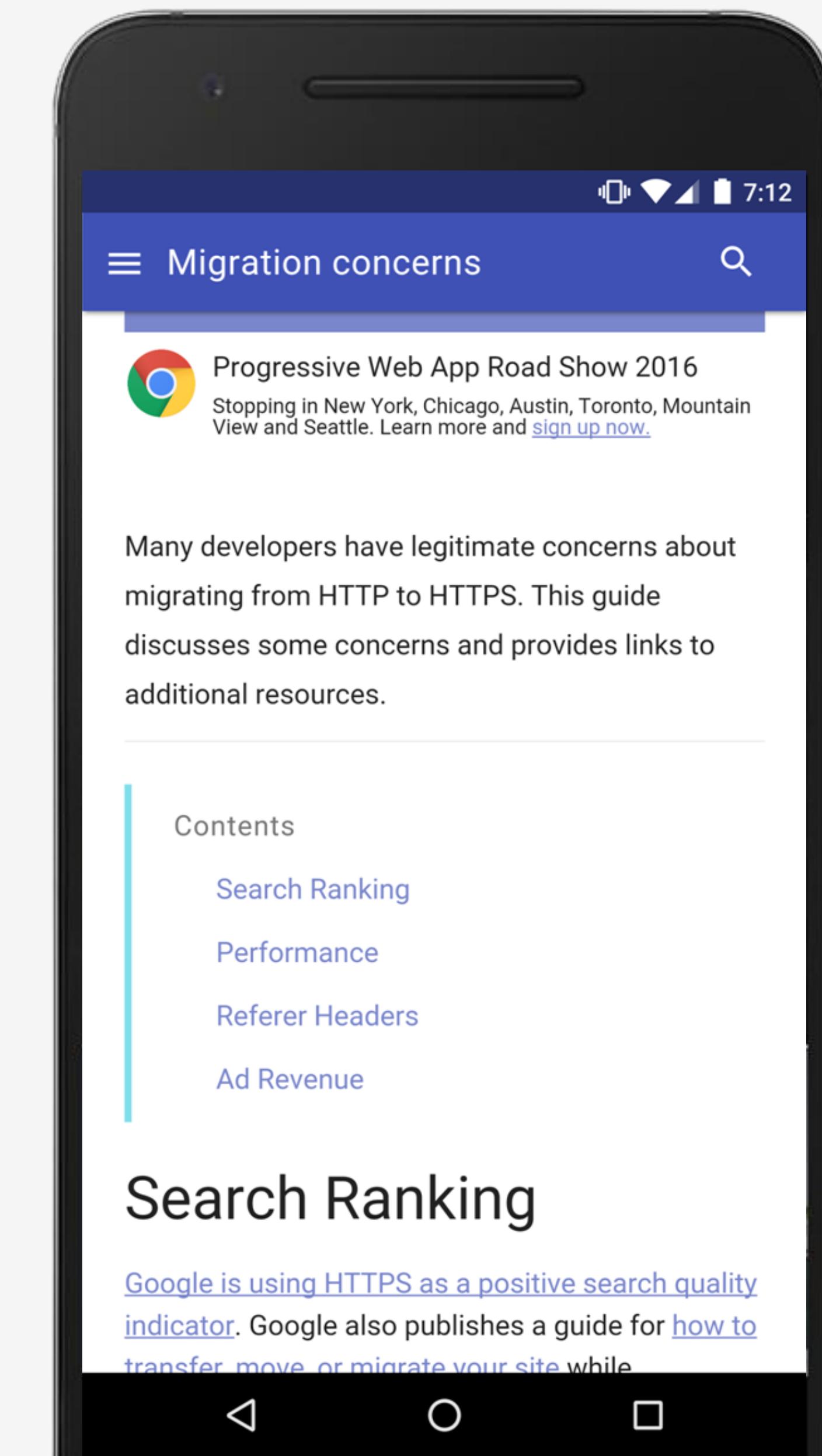
- SHA-1 Certificate**: The certificate for this site expires in 2017 or later, and the certificate chain contains a certificate signed using SHA-1. A "View certificate" button is provided.
- Mixed Content**: The site includes HTTP resources. A link to "View 1 request in Network Panel" is provided.
- Blocked mixed content**: Your page requested insecure resources that were blocked. A link to "View 1 request in Network Panel" is provided.

At the bottom, the Console tab shows two log entries:

- A yellow warning: "Mixed Content: The page at '`https://very.badssl.com/`' was loaded over HTTPS, but requested an insecure image '`http://very.badssl.com/image.jpg`'. This content should also be served over HTTPS." (very.badssl.com/:28)
- A red error: "Mixed Content: The page at '`https://very.badssl.com/`' was loaded over HTTPS, but requested an insecure script '`http://http.badssl.com/test/imported.js`'. This request has been blocked; the content must be served over HTTPS." (very.badssl.com/:1)

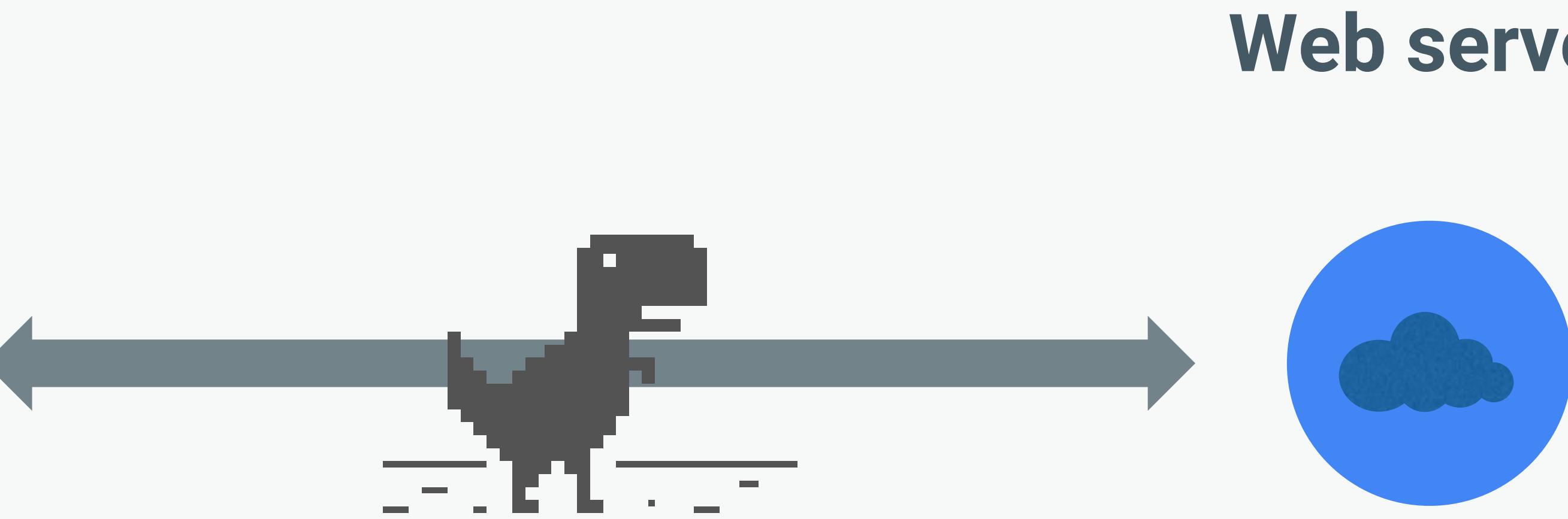
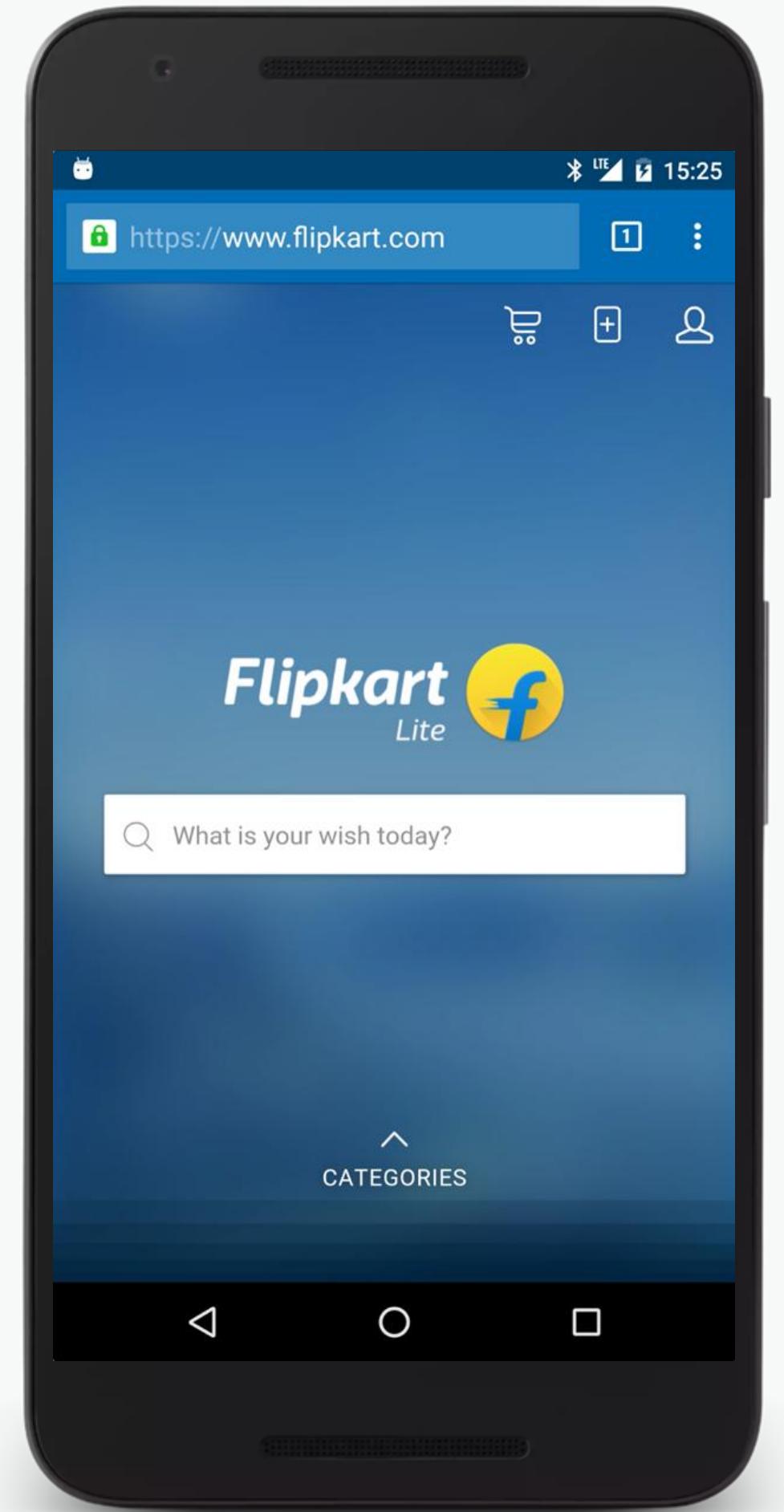
Orientações sobre Ranking de Pesquisa

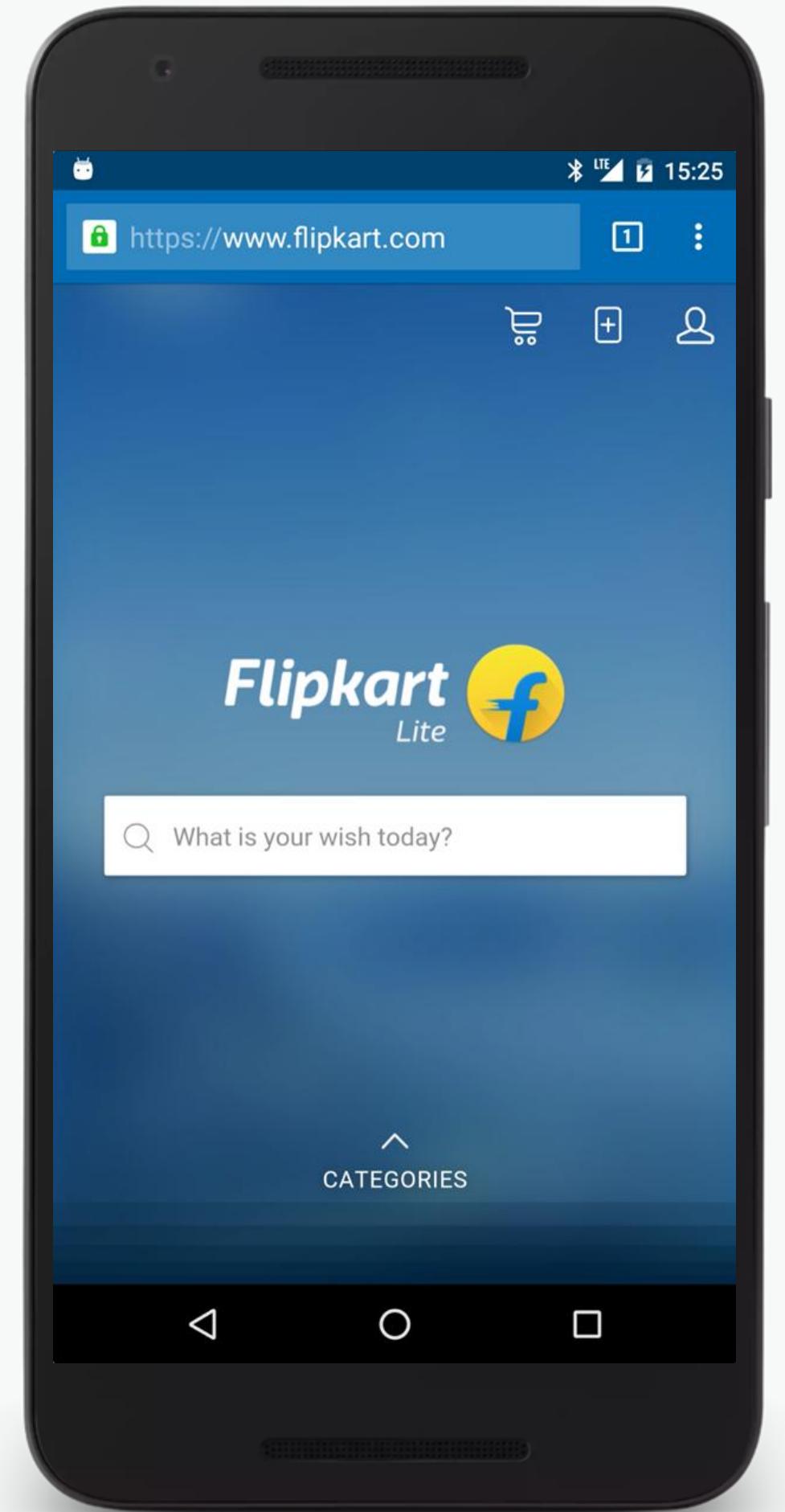
goo.gl/nGruxn



Use um Service Worker







Client side proxy
(JavaScript)

Service worker

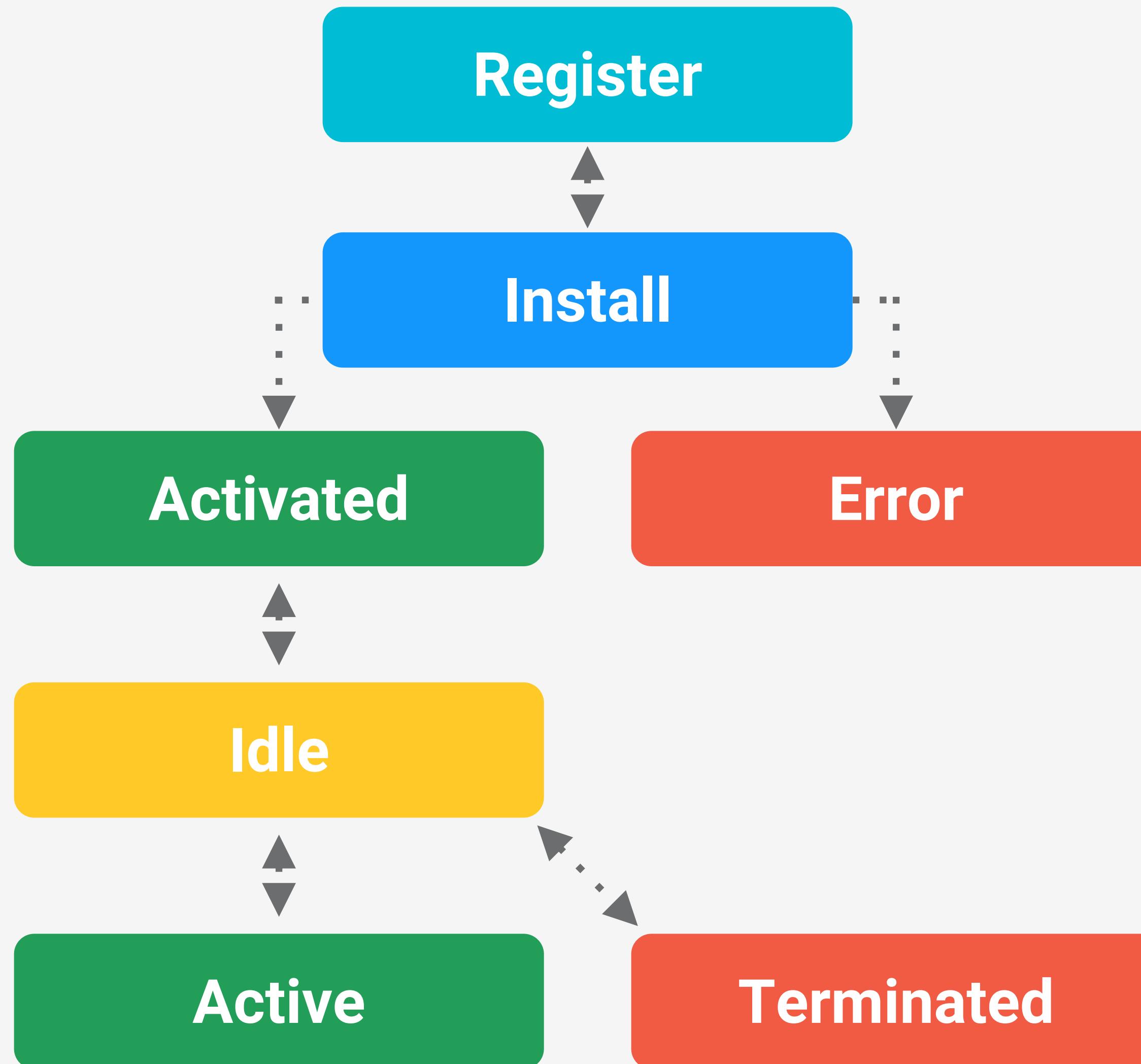
Web server



Cache

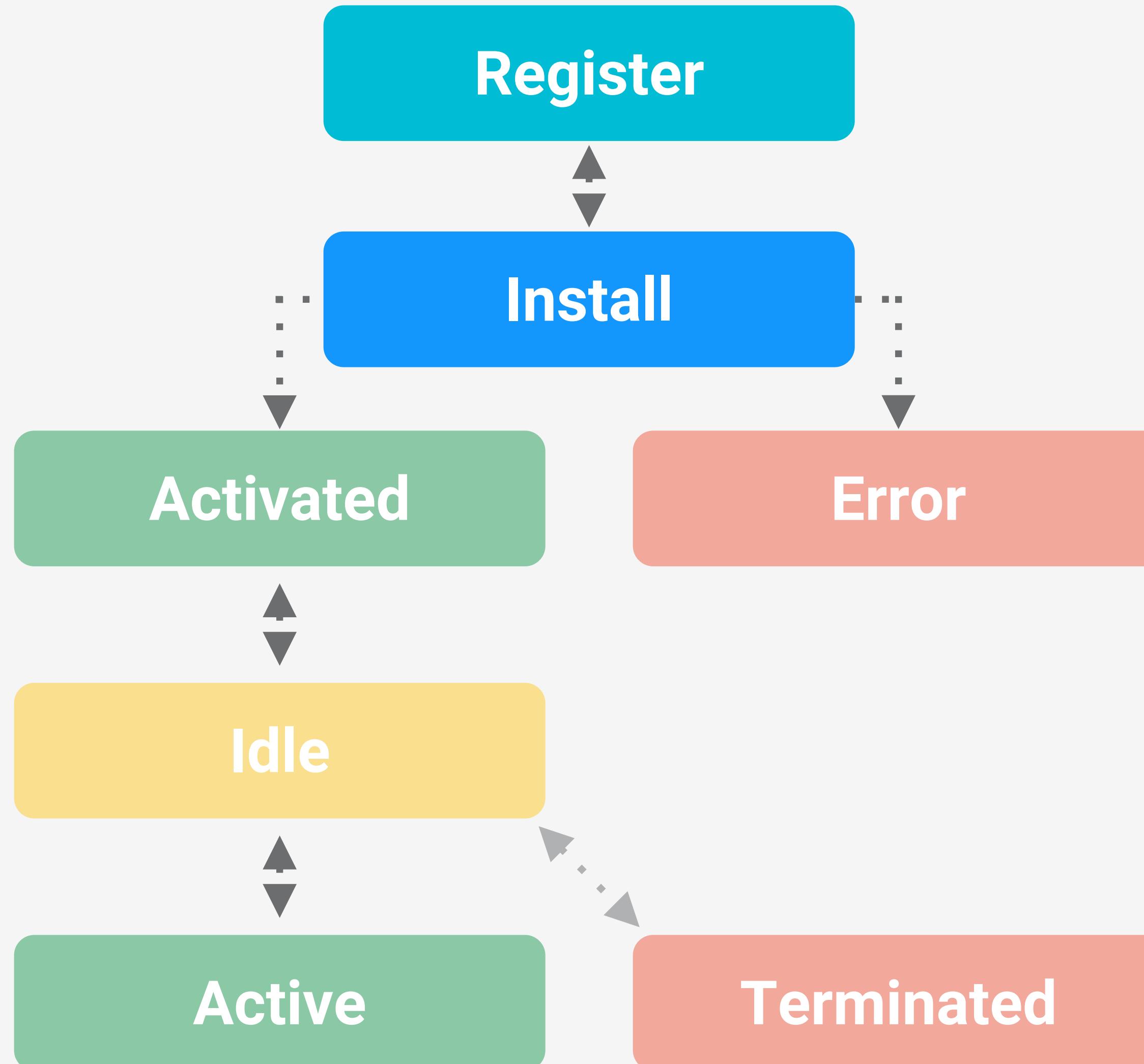


Service Worker Life Cycle



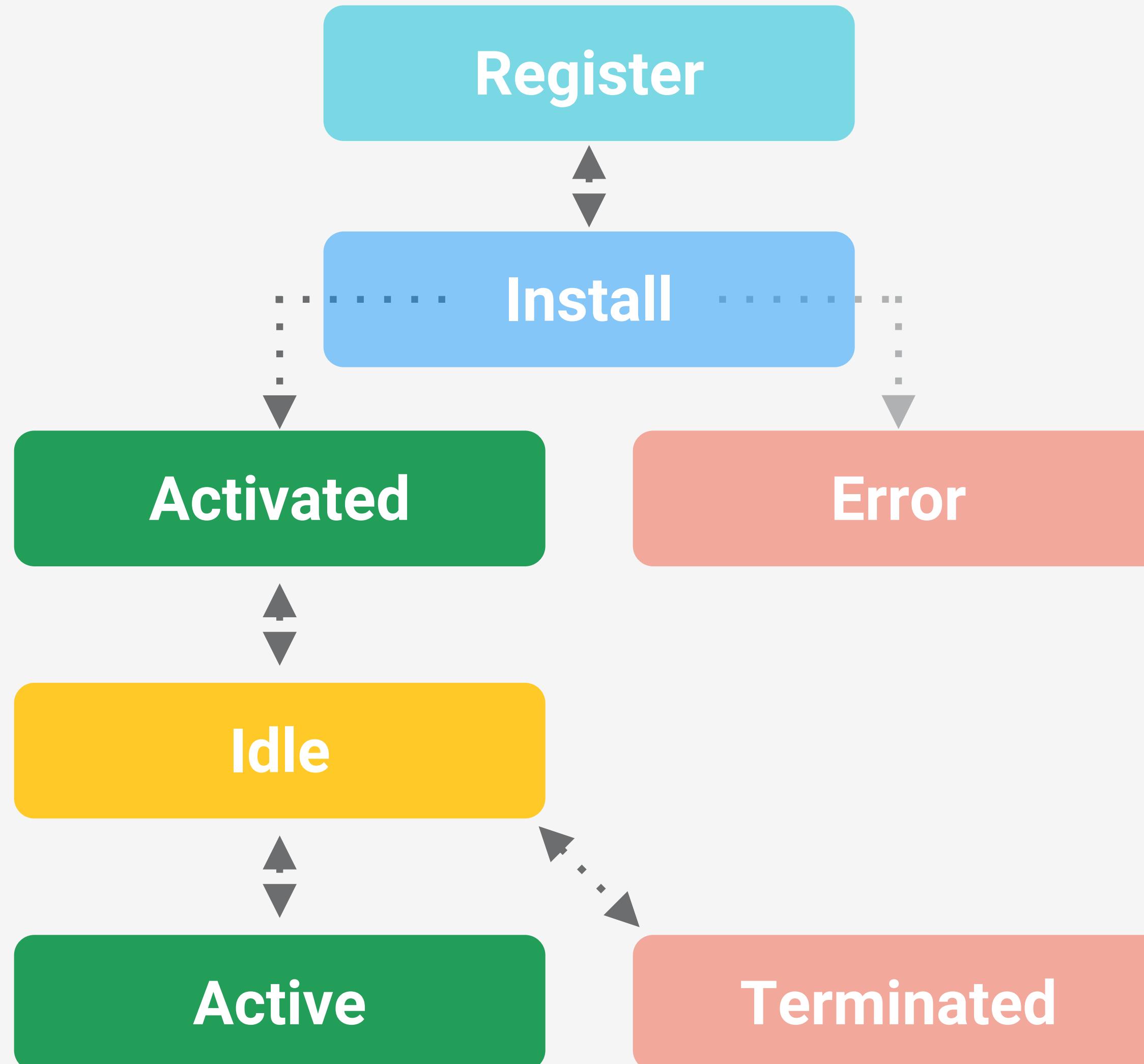
- Adiciona um ciclo de vida para a página
- Acorda apenas quando o SO solicitar
- Responde apenas a eventos do sistema

Service Worker Life Cycle



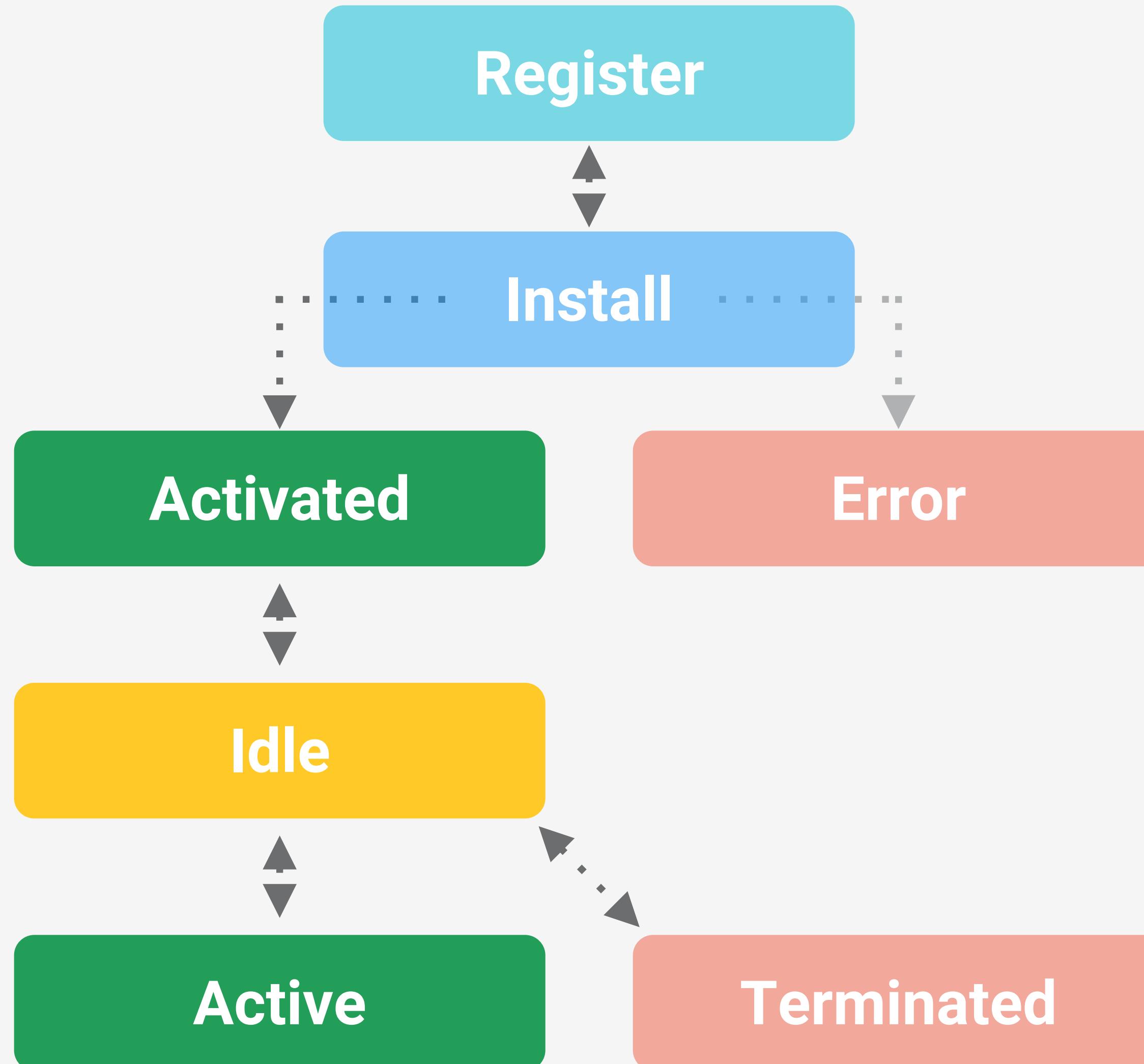
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Service Worker Life Cycle



- Adiciona um ciclo de vida para a página
- Acorda apenas quando o SO solicitar
- Responde apenas a eventos do sistema

Service Worker Life Cycle



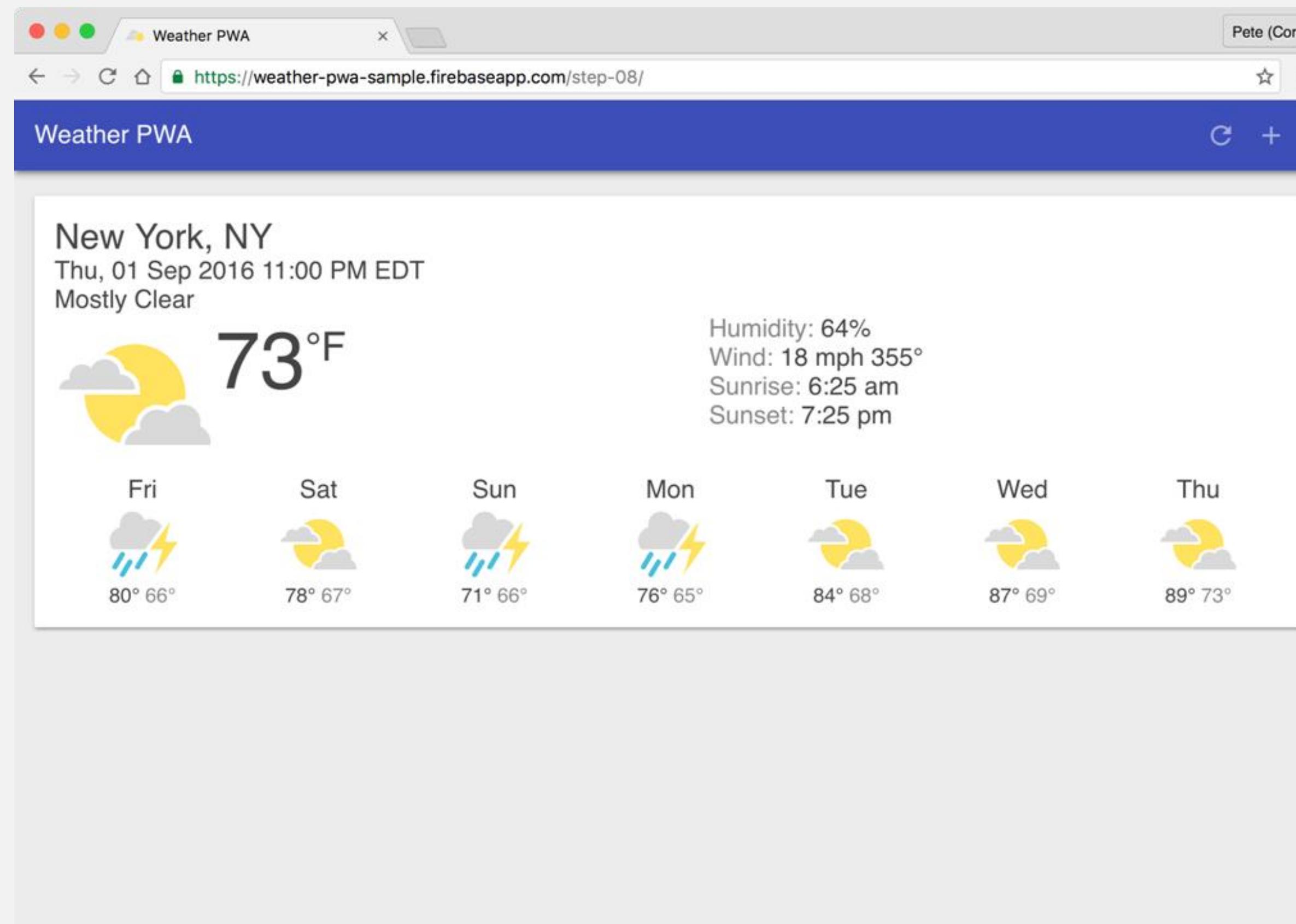
- Adiciona um ciclo de vida para a página
- Acorda apenas quando o SO solicitar
- Responde apenas a eventos do sistema

Service Worker

serve para um segundo
carregamento.

Life Cycle of a Service Worker

Installing the Service Worker



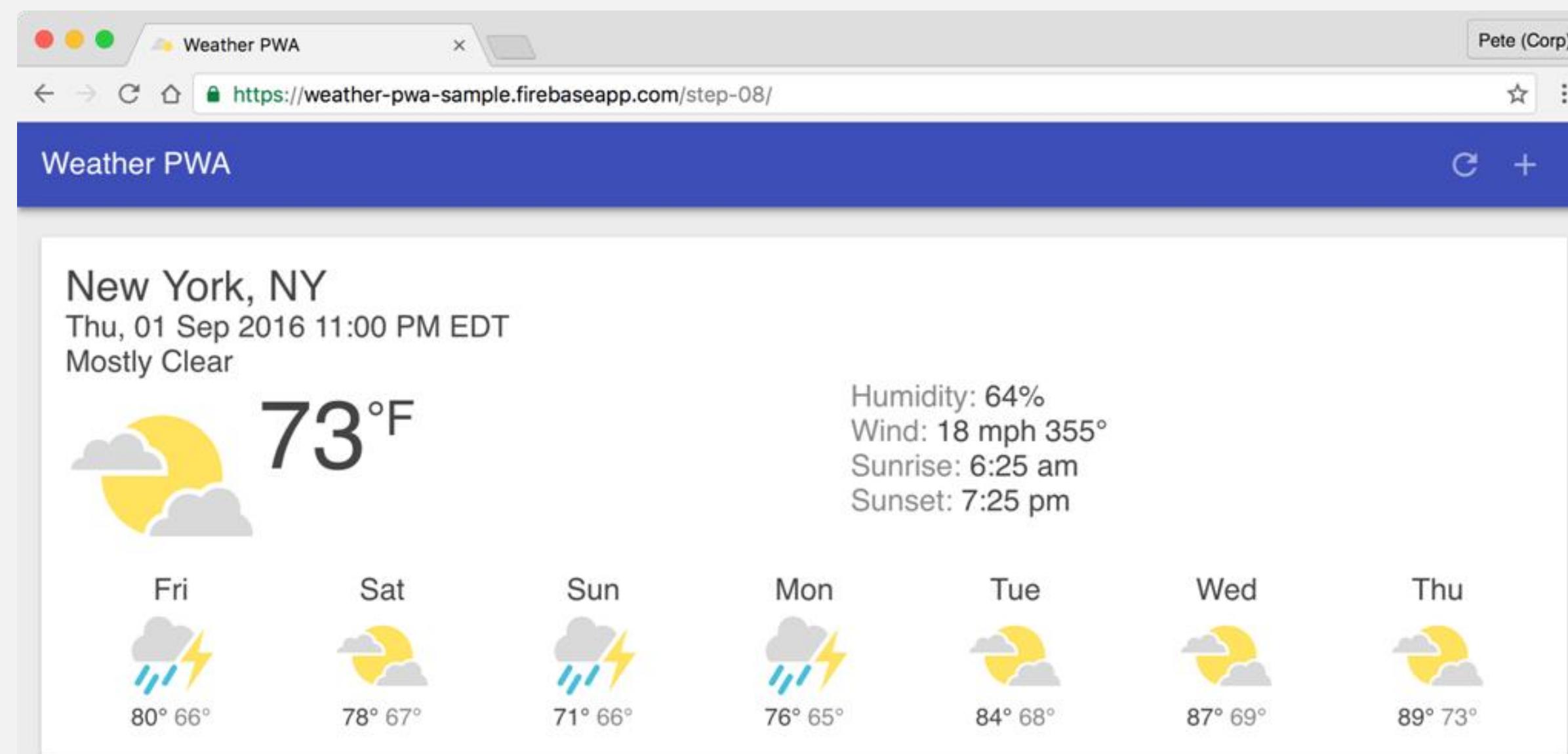
install

idle

1st Page Load

Life Cycle of a Service Worker

Installing the Service Worker



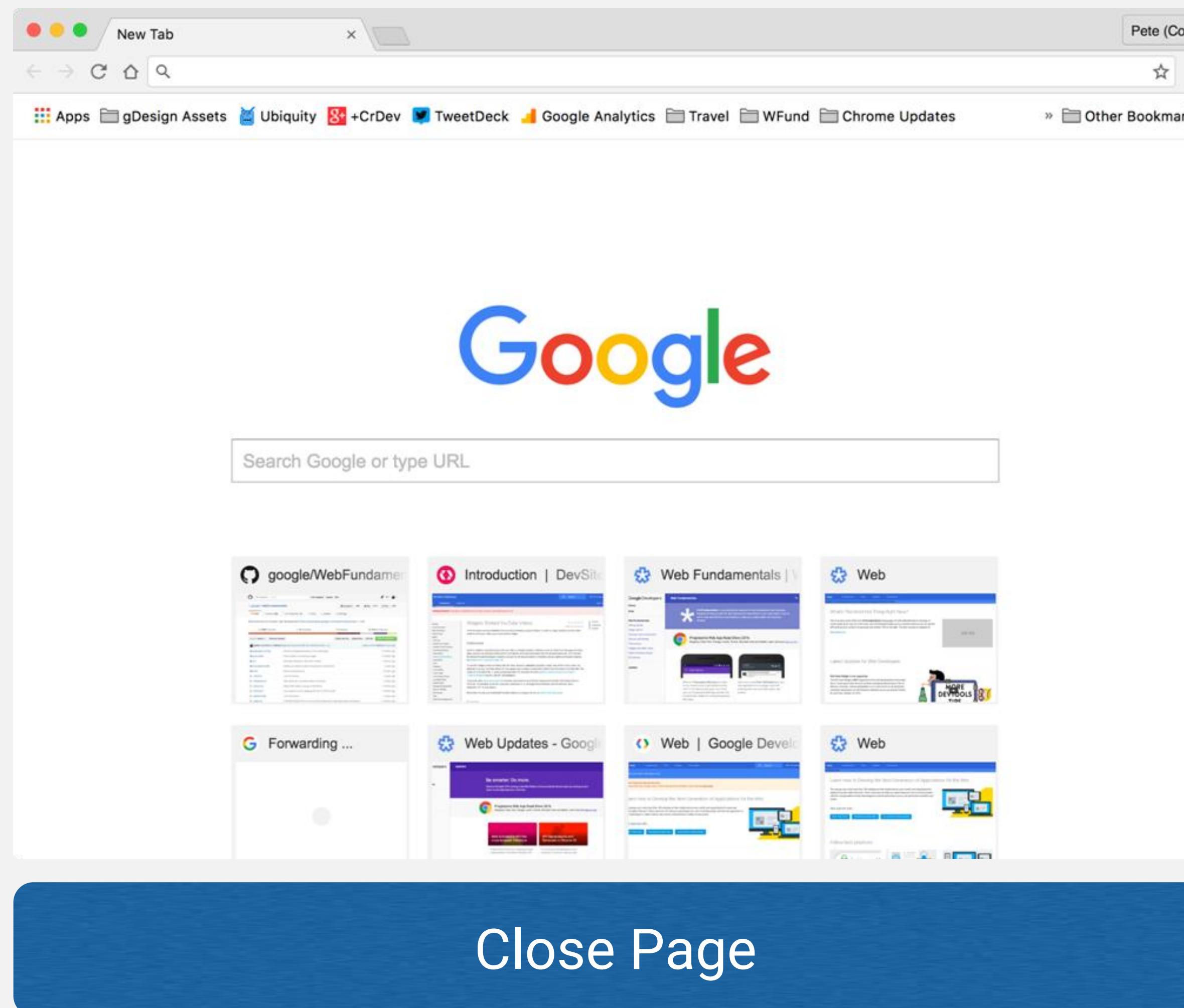
activated

check for
update

2nd Page Load

Life Cycle of a Service Worker

Installing the Service Worker



activated

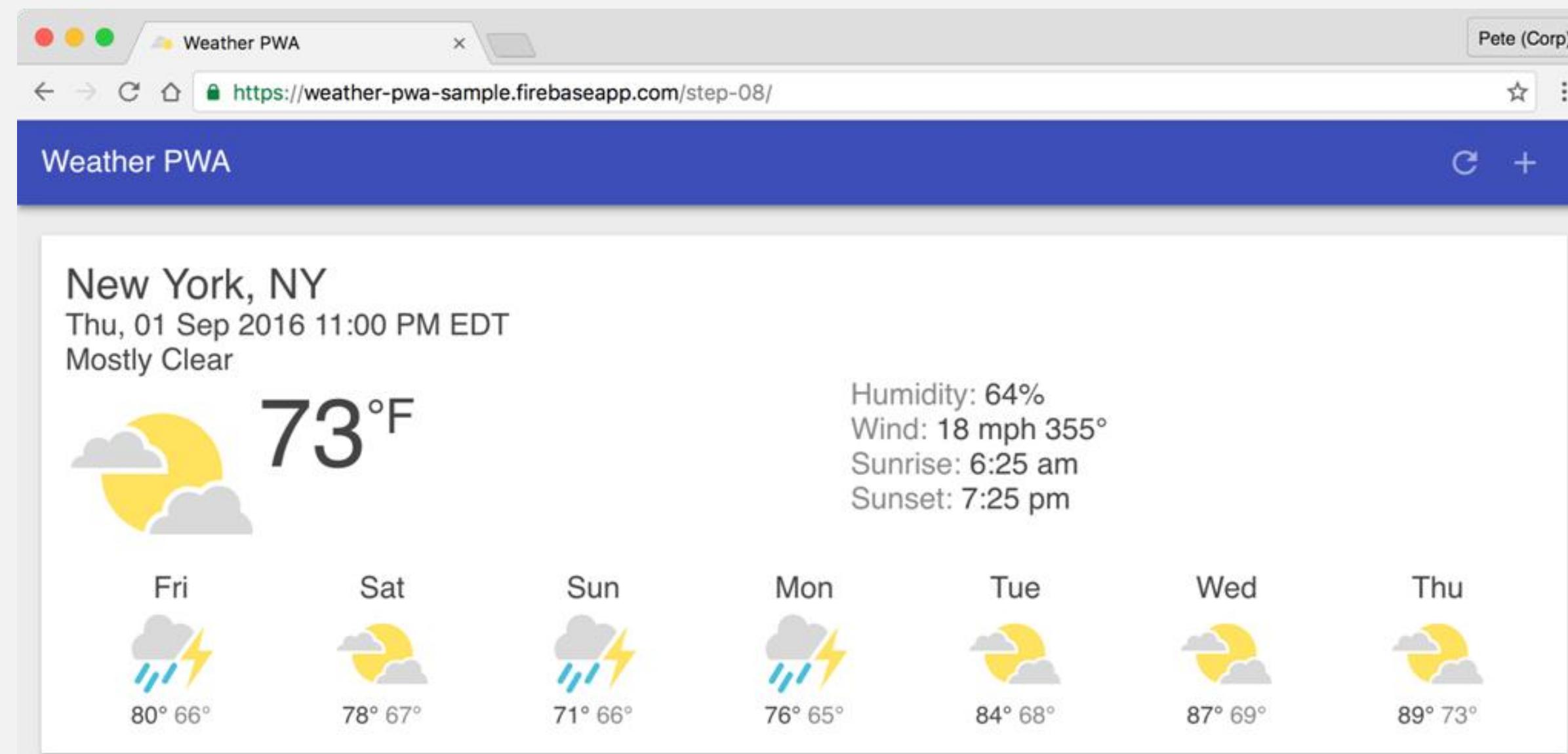
idle

terminated

Close Page

Life Cycle of a Service Worker

Updating a Service Worker



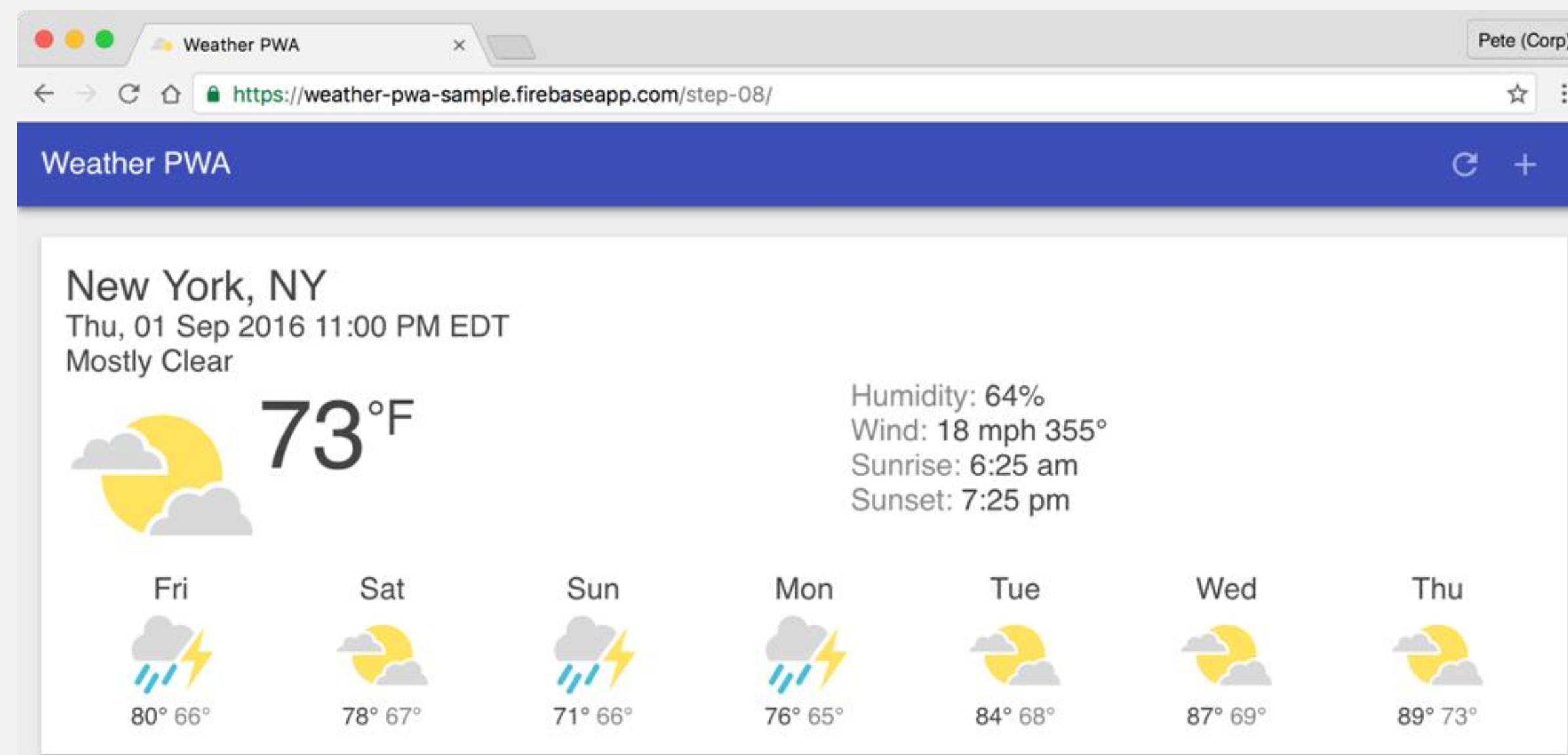
activated

check for
update

Load Page with Service Worker

Life Cycle of a Service Worker

Updating a Service Worker



activated

check for
update

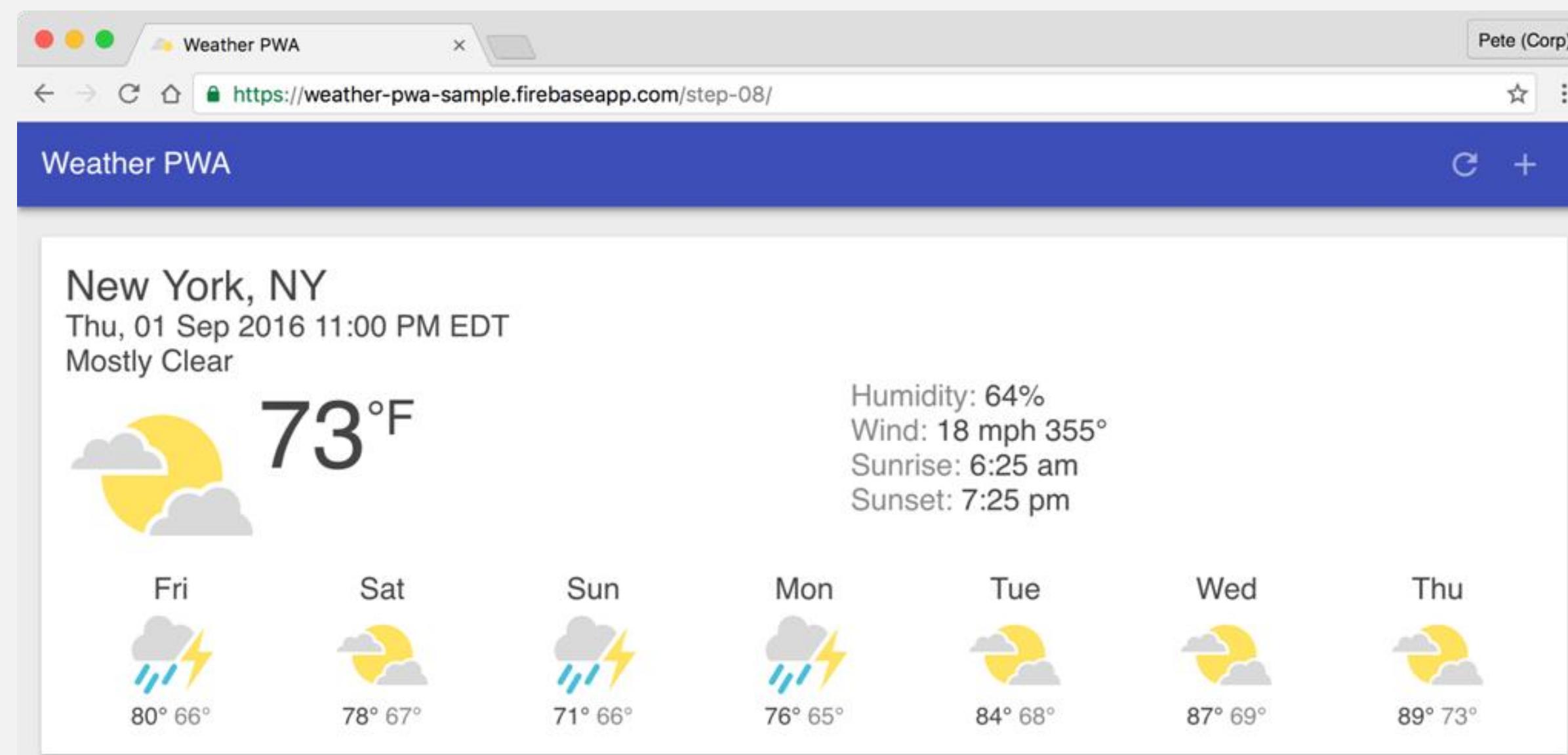
install

idle

Load Page with Service Worker

Life Cycle of a Service Worker

Updating a Service Worker



activated

check for
update

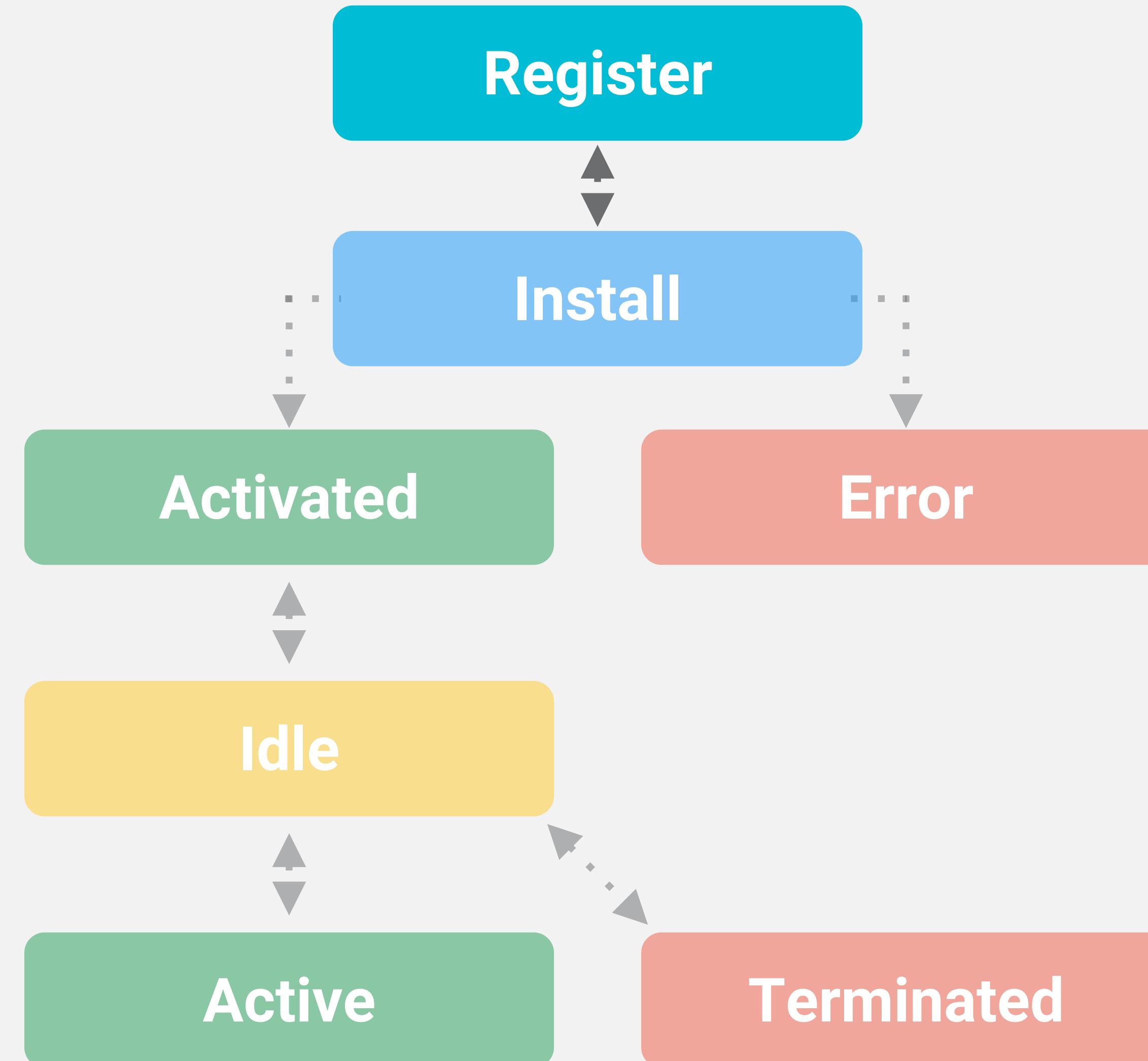
install

idle

Load Page with Service Worker

Implementação de um Service Worker

Register the Service Worker



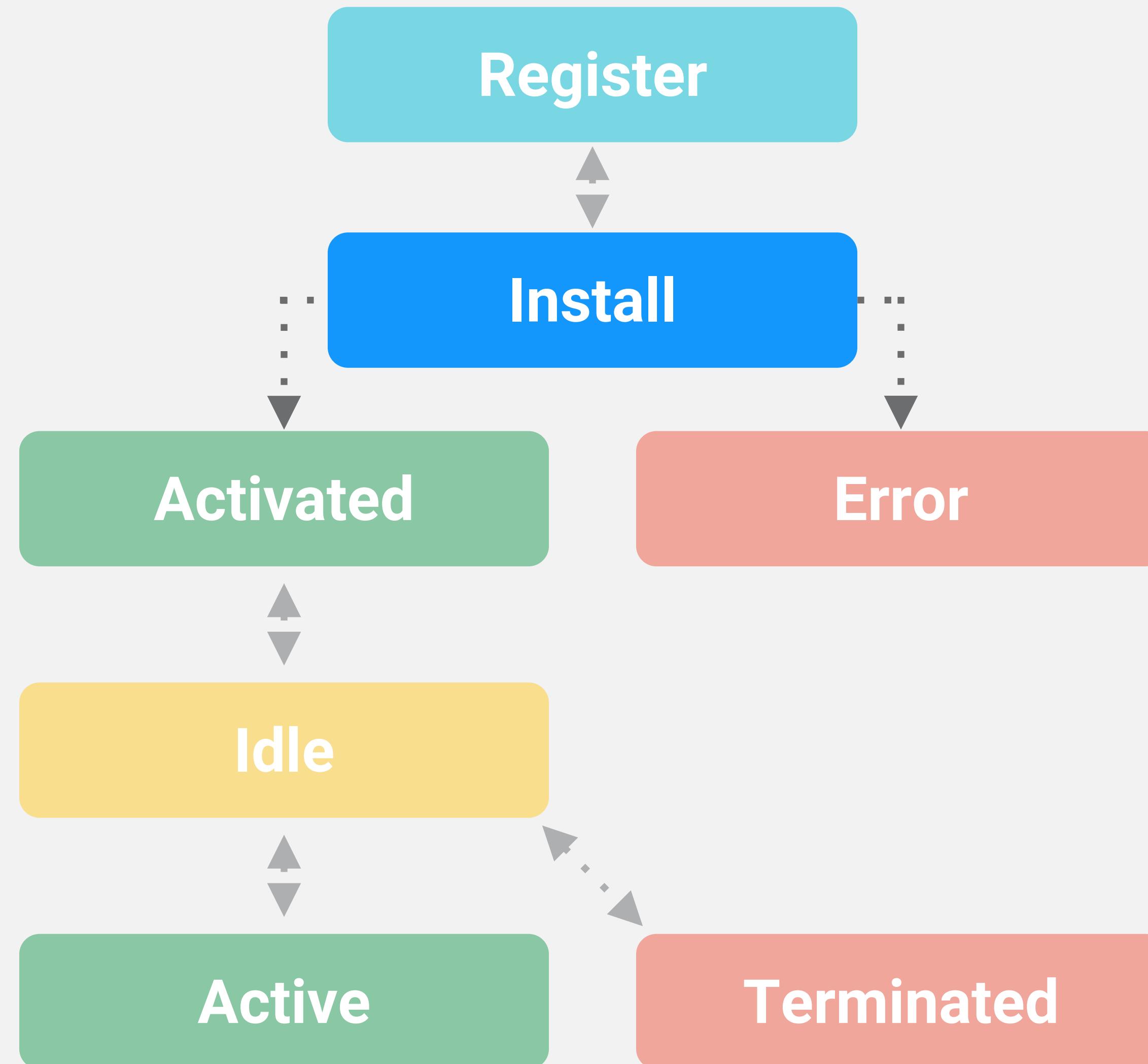
Register the Service Worker

```
if ('serviceWorker' in navigator) {  
  navigator.serviceWorker.register('/service-worker.js')  
    .then(function(reg) {  
      console.log('Service Worker Registered', reg);  
    })  
    .catch(function(err) {  
      console.log('Error registering Service Worker', err);  
    });  
}
```

Register the Service Worker

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if ('serviceWorker' in navigator) {  
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      console.log('Error registering Service Worker', err);  
    });  
}
```

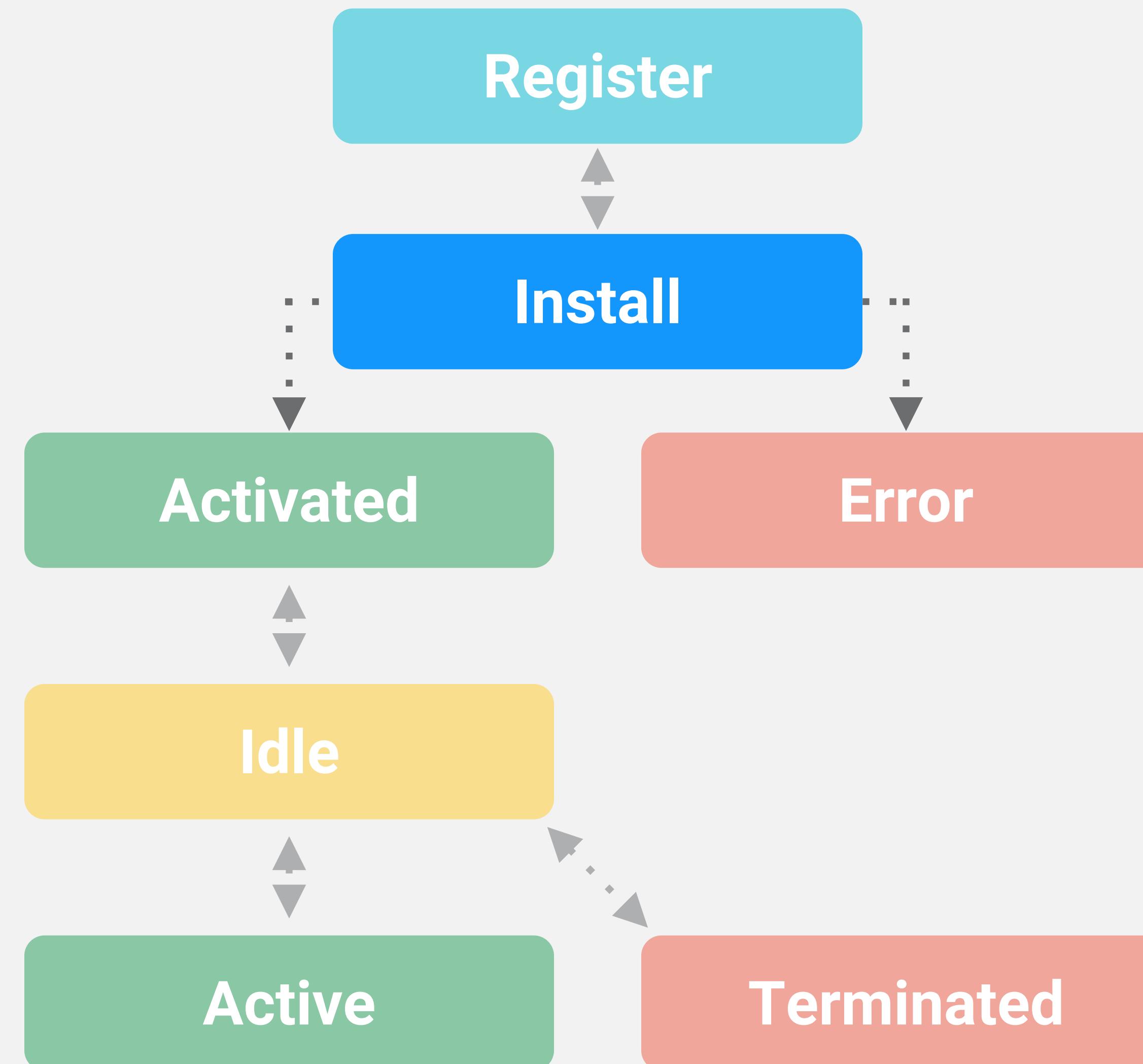
Add an install Event Handler



Add an install Event Handler

```
self.addEventListener('install', function(event) {  
  return self.skipWaiting();  
});
```

Pre-fetch the App Resources



Pre-fetch the App Resources

```
var cacheName = 'app-shell-cache-v1';
var filesToCache = ['/','/index.html', ...];

self.addEventListener('install', function(event) {
  event.waitUntil(
    caches.open(cacheName).then(function(cache) {
      return cache.addAll(filesToCache);
    }).then(function() {
      return self.skipWaiting();
    })
  );
});
```

Pre-fetch the App Resources

```
var cacheName = 'app-shell-cache-v1';
var filesToCache = ['/index.html', ...];

self.addEventListener('install', function(event) {
  event.waitUntil(
    caches.open(cacheName).then(function(cache) {
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      return self.skipWaiting();
    })
  );
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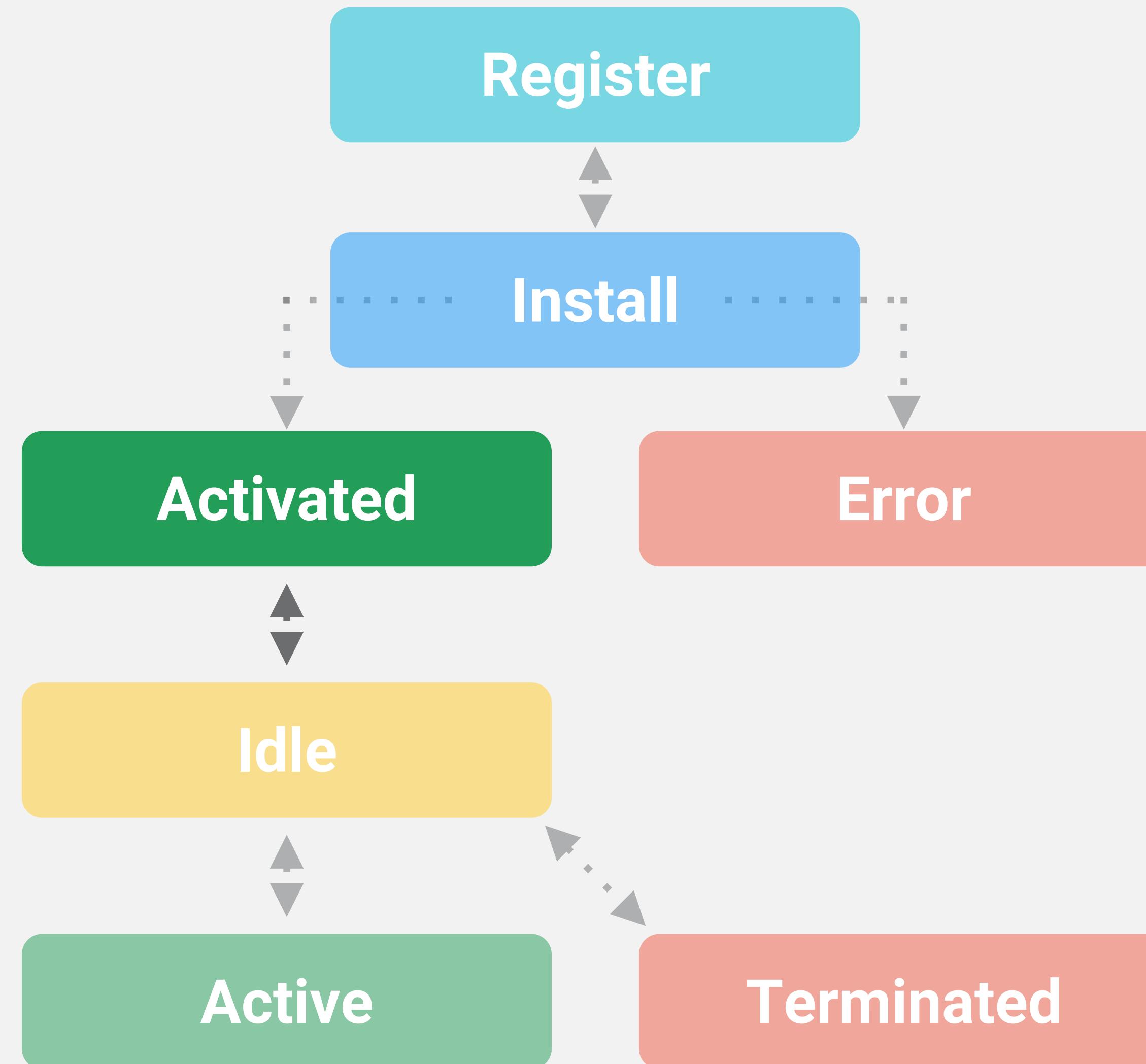
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  event.waitUntil(
    caches.open(cacheName).then(function(cache) {
      return cache.addAll(filesToCache);
    }).then(function() {
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self.addEventListener('install', function(event) {
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    caches.open(cacheName).then(function(cache) {
      return cache.addAll(filesToCache);
    }).then(function() {
      return self.skipWaiting();
    })
  );
});
```

Add an activate Event Handler



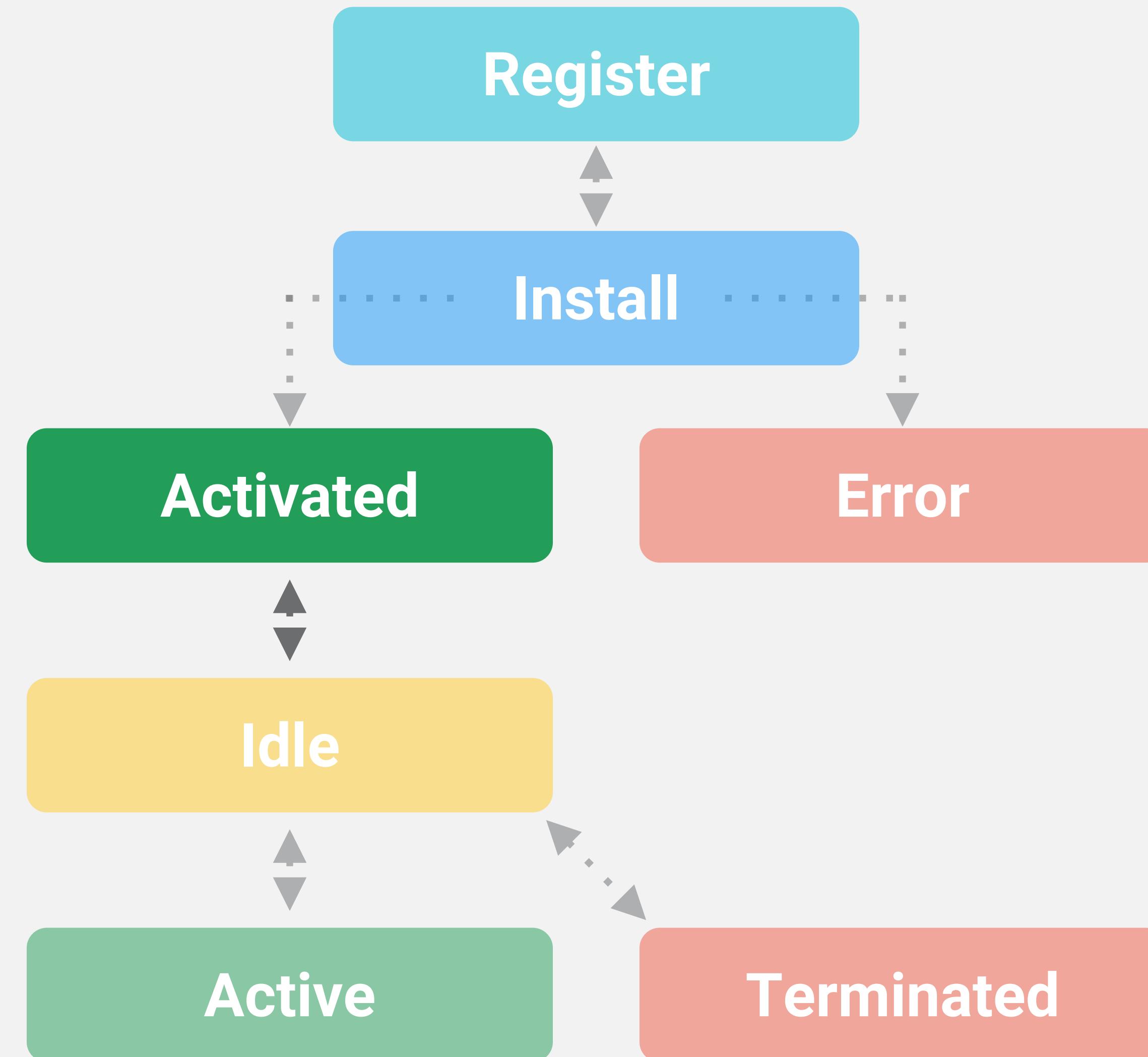
Add an activate Event Handler

```
self.addEventListener('activate', function(e) {  
  e.waitUntil(  
    caches.keys().then(function(keyList) {  
      return Promise.all(keyList.map(function(key) {  
        if (key !== cacheName) {  
          return caches.delete(key);  
        }  
      }));  
    })  
  );  
  return self.clients.claim();  
});
```

Add an activate Event Handler

```
self.addEventListener('activate', function(e) {  
  e.waitUntil(  
    caches.keys().then(function(keyList) {  
      return Promise.all(keyList.map(function(key) {  
        if (key !== cacheName) {  
          return caches.delete(key);  
        }  
      }));  
    })  
  );  
  return self.clients.claim();  
});
```

Not Done Yet...





—

Unable to connect to the Internet

Google Chrome can't display the web page because your computer isn't connected to the Internet.

ERR_INTERNET_DISCONNECTED

[Details](#)

Add a fetch Event Handler

```
self.addEventListener('fetch', function(e) {  
  e.respondWith(  
    caches.match(e.request).then(function(response) {  
      return response || fetch(e.request);  
    })  
  );  
});
```

Add a fetch Event Handler

```
self.addEventListener('fetch', function(e) {  
  e.respondWith(  
    caches.match(e.request).then(function(response) {  
      return response || fetch(e.request);  
    })  
  );  
});
```

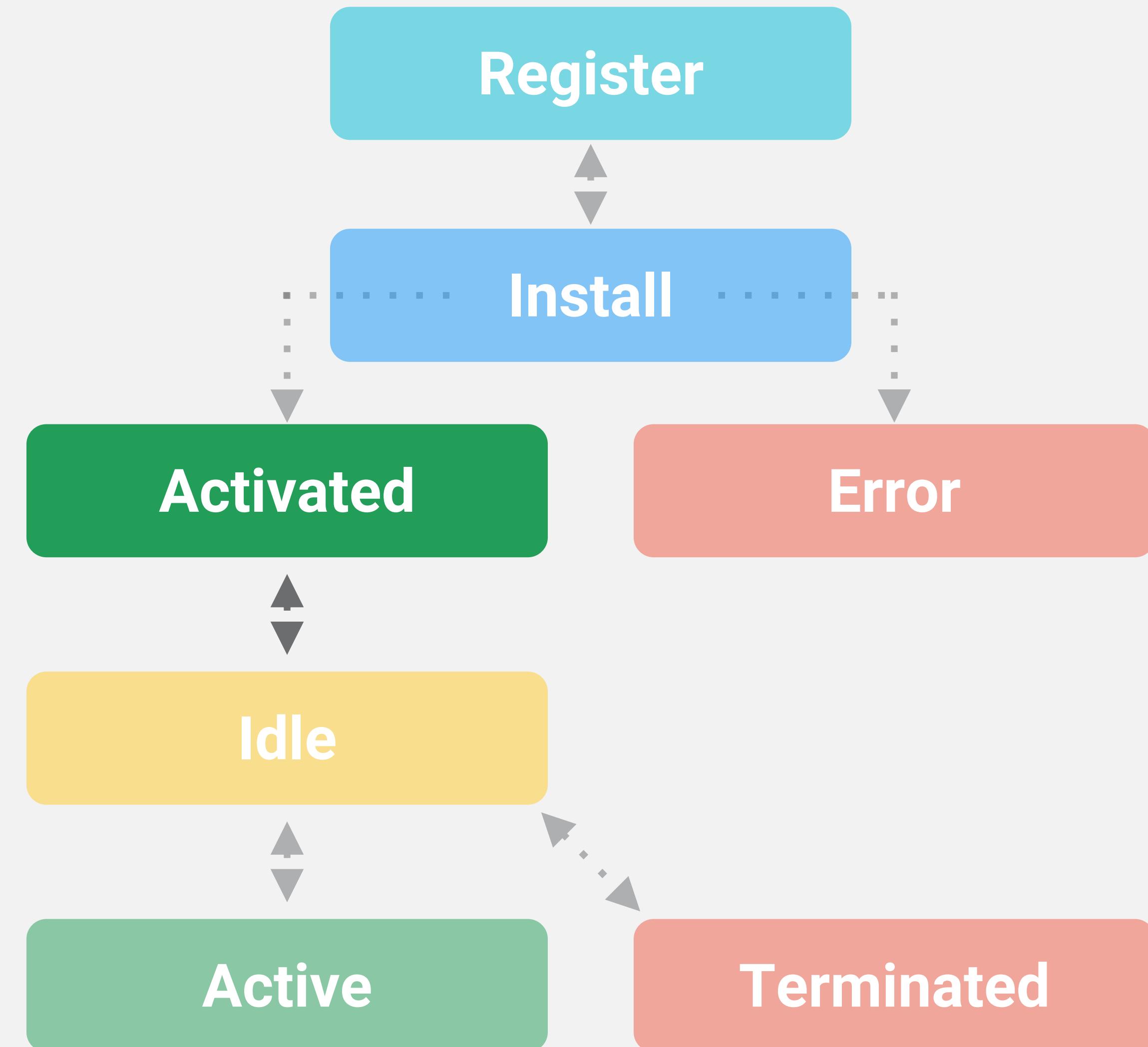
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```
self.addEventListener('fetch', function(e) {  
  e.respondWith(  
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Add a fetch Event Handler

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    caches.match(e.request).then(function(response) {  
      return response || fetch(e.request);  
    })  
  );  
});
```

Ready to Go!



Scope

```
if ('serviceWorker' in navigator) {  
  navigator.serviceWorker.register('/service-worker.js')  
    .then(function(reg) {  
      console.log('Service Worker Registered', reg);  
    })  
    .catch(function(err) {  
      console.log('Error registering Service Worker', err);  
    });  
}
```

Scope

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if ('serviceWorker' in navigator) {  
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    .then(function(reg) {  
      console.log('Service Worker Registered', reg);  
    })  
    .catch(function(err) {  
      console.log('Error registering Service Worker', err);  
    });  
}
```

Scope

```
if ('serviceWorker' in navigator) {  
  navigator.serviceWorker.register('/scripts/s-worker.js')  
    .then(function(reg) {  
      console.log('Service Worker Registered', reg);  
    })  
    .catch(function(err) {  
      console.log('Error registering Service Worker', err);  
    });  
}
```

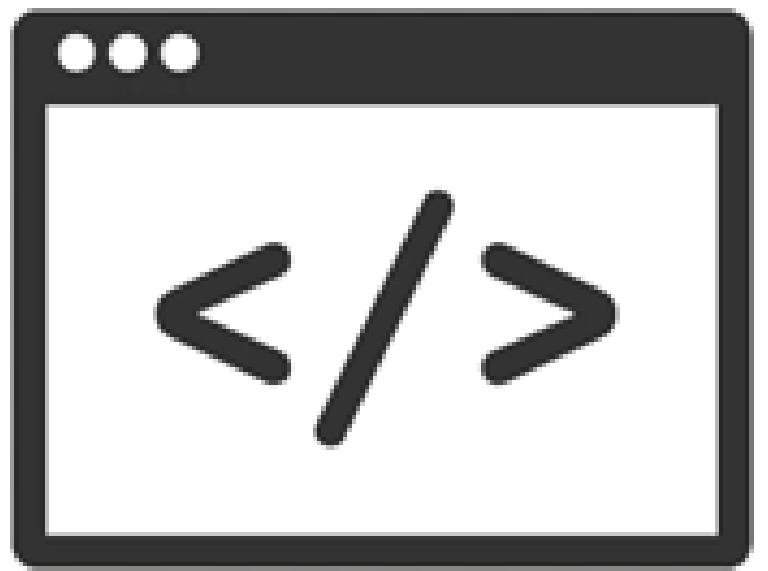
Scope

```
if ('serviceWorker' in navigator) {  
  navigator.serviceWorker.register('/service-worker.js')  
    .then(function(reg) {  
      console.log('Service Worker Registered', reg);  
    })  
    .catch(function(err) {  
      console.log('Error registering Service Worker', err);  
    });  
}
```

Caching strategies

You are in control of the network

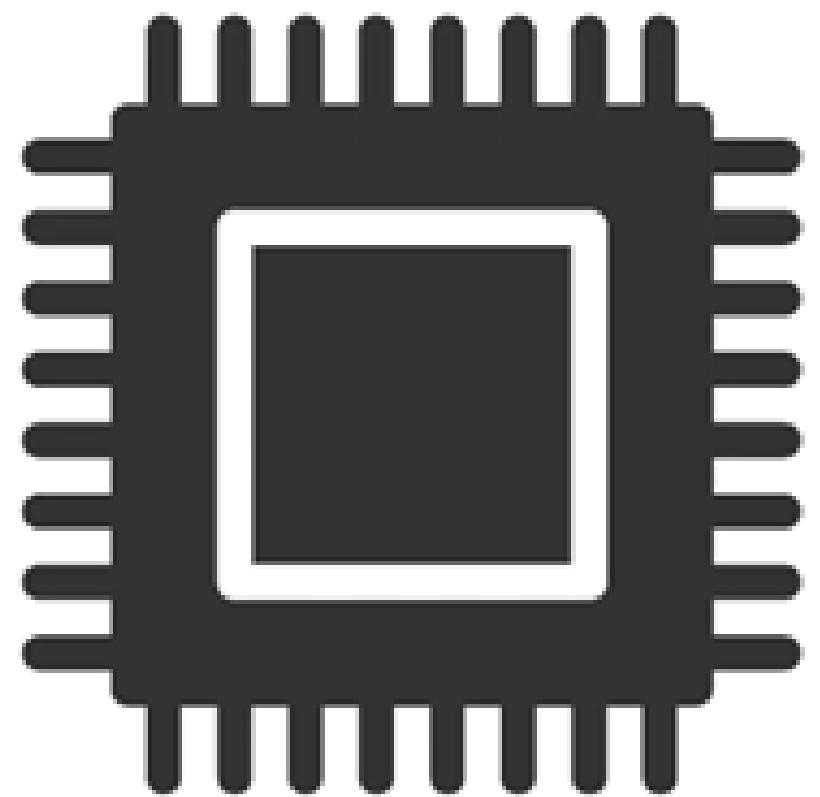
Cache, Falling Back to Network



Page



Network

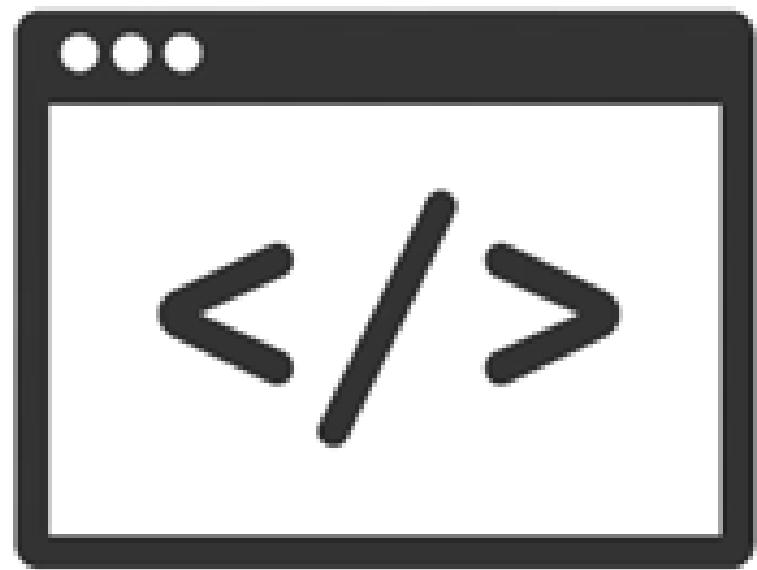


ServiceWorker



Cache

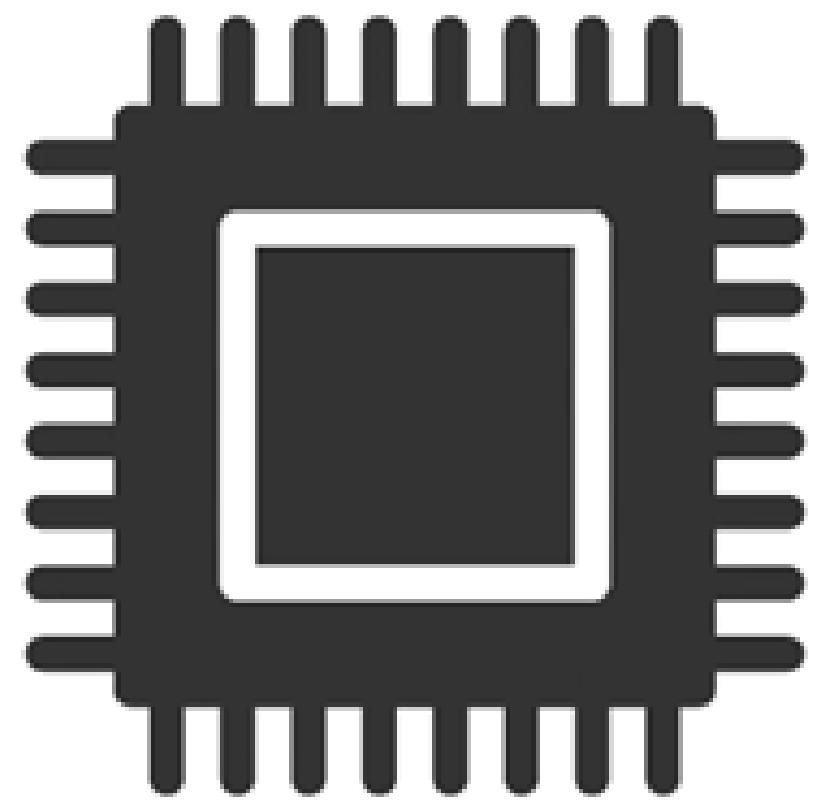
Network, Falling Back to Cache



Page



Cache

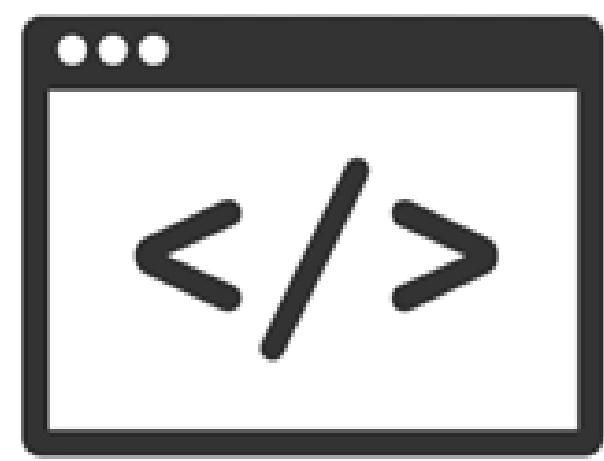


ServiceWorker

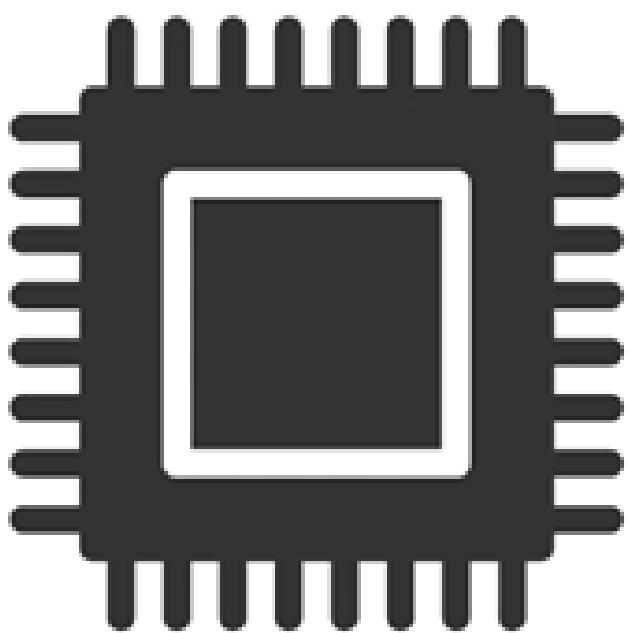


Network

Cache then Network



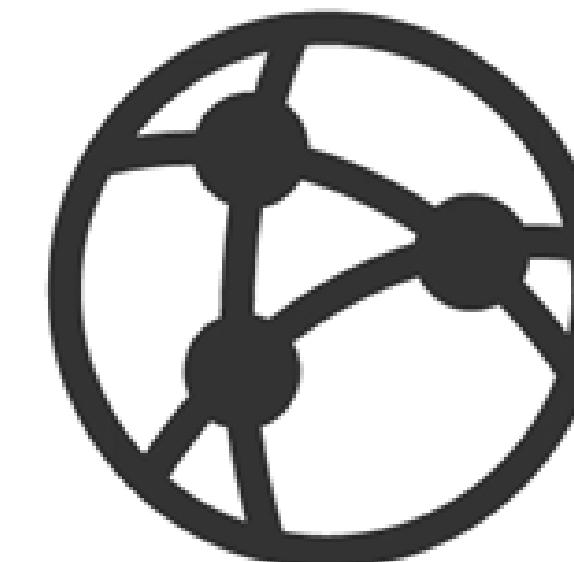
Page



ServiceWorker

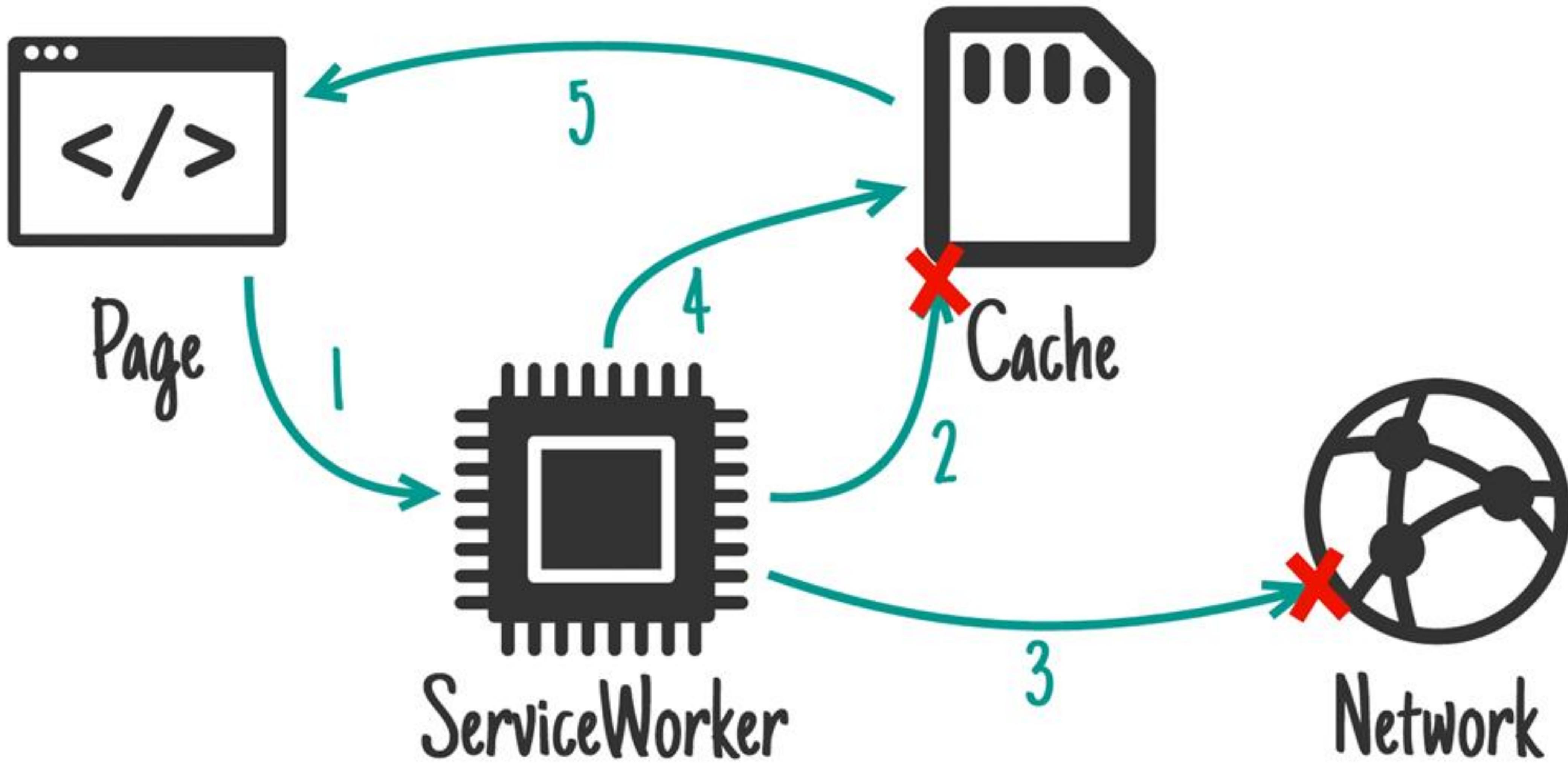


Cache

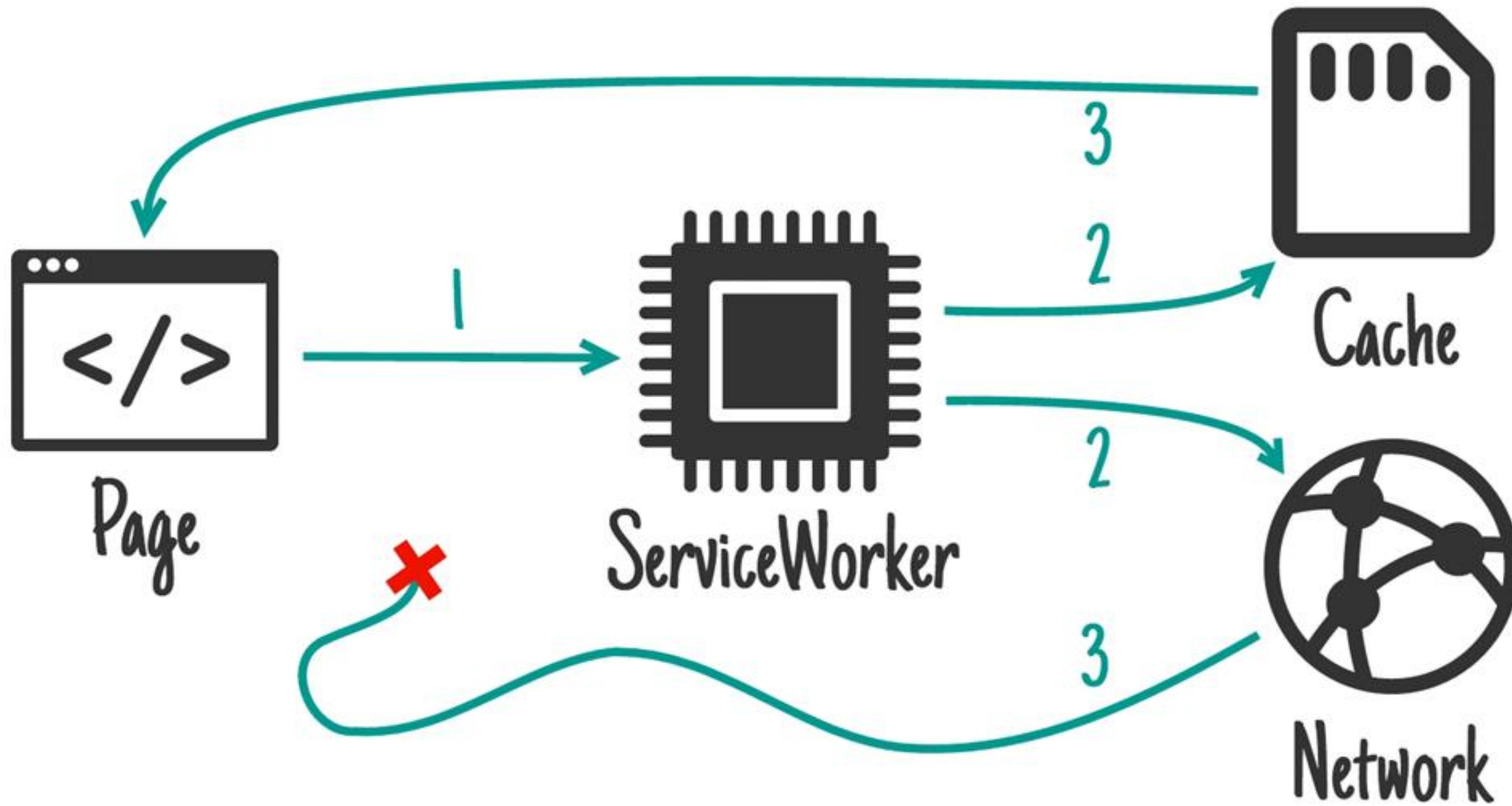


Network

Generic Fallback



Cache and Network Race



Caching strategies galore!



The offline cookbook - JakeArchibald.com

https://jakearchibald.com/2014/offline-cookbook/

Jake Archibald wrote...

The offline cookbook

Posted 09 December 2014

Update: Together with Udacity I created a [free offline-first interactive course](#). It involves taking an online-only site to full offline-first glory. Many of the patterns in this article are used.

When AppCache arrived on the scene it gave us a couple of patterns to make content work offline. If those were the patterns you needed, congratulations, you won the AppCache lottery (the jackpot remains unclaimed), but the rest of us were left huddled in a corner [rocking back & forth](#).

With ServiceWorker ([intro](#)) we gave up trying to solve offline, and gave developers the moving



Hello, I'm Jake and that is my face. I'm a developer advocate for Google Chrome.

Elsewhere

[Twitter](#) [Lanyrd](#)
[Github](#) [Google+](#)
[Flickr](#)

Engage Your Users

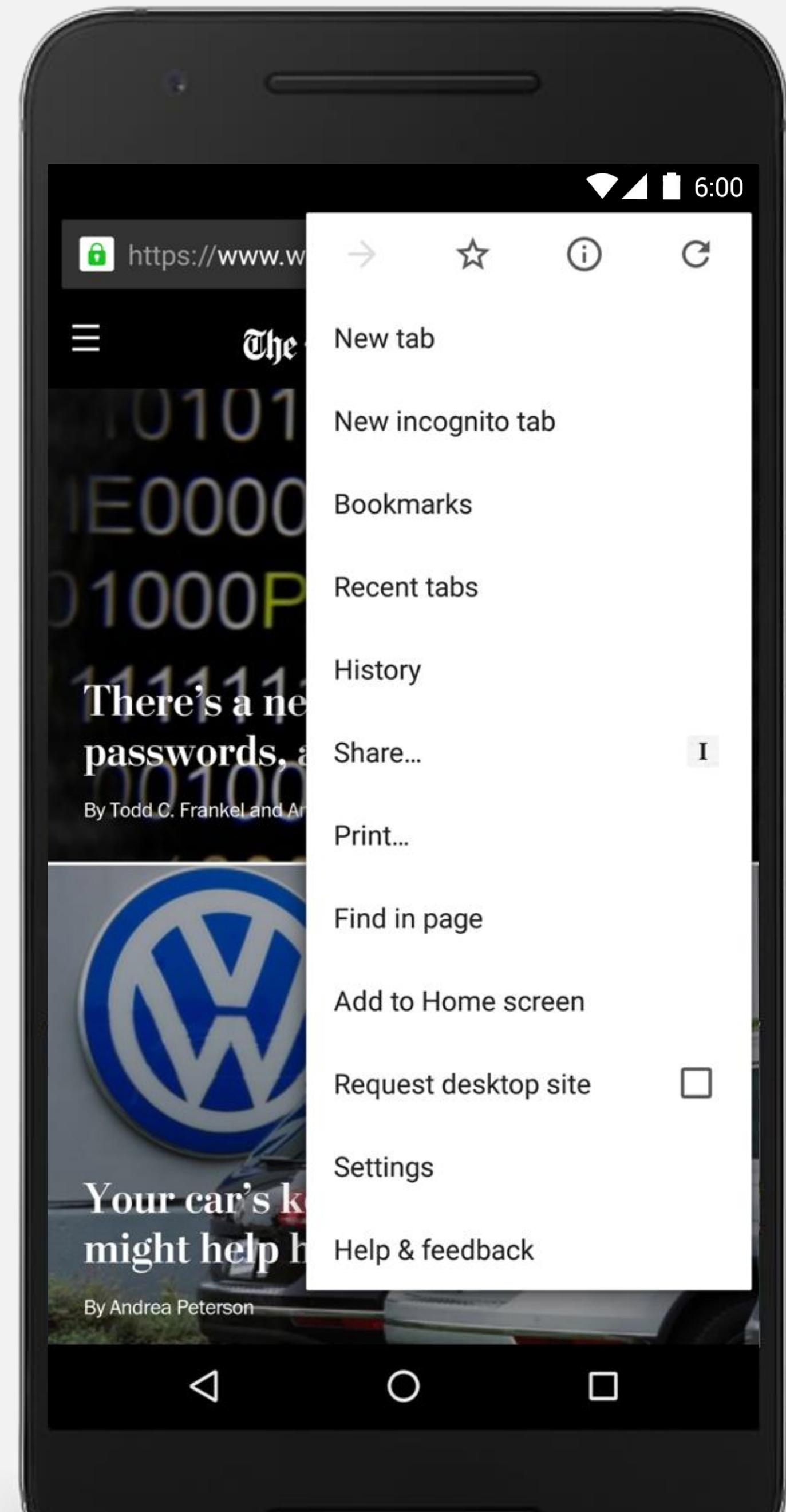


Add to Home Screen



Add To Home Screen

Was Broken

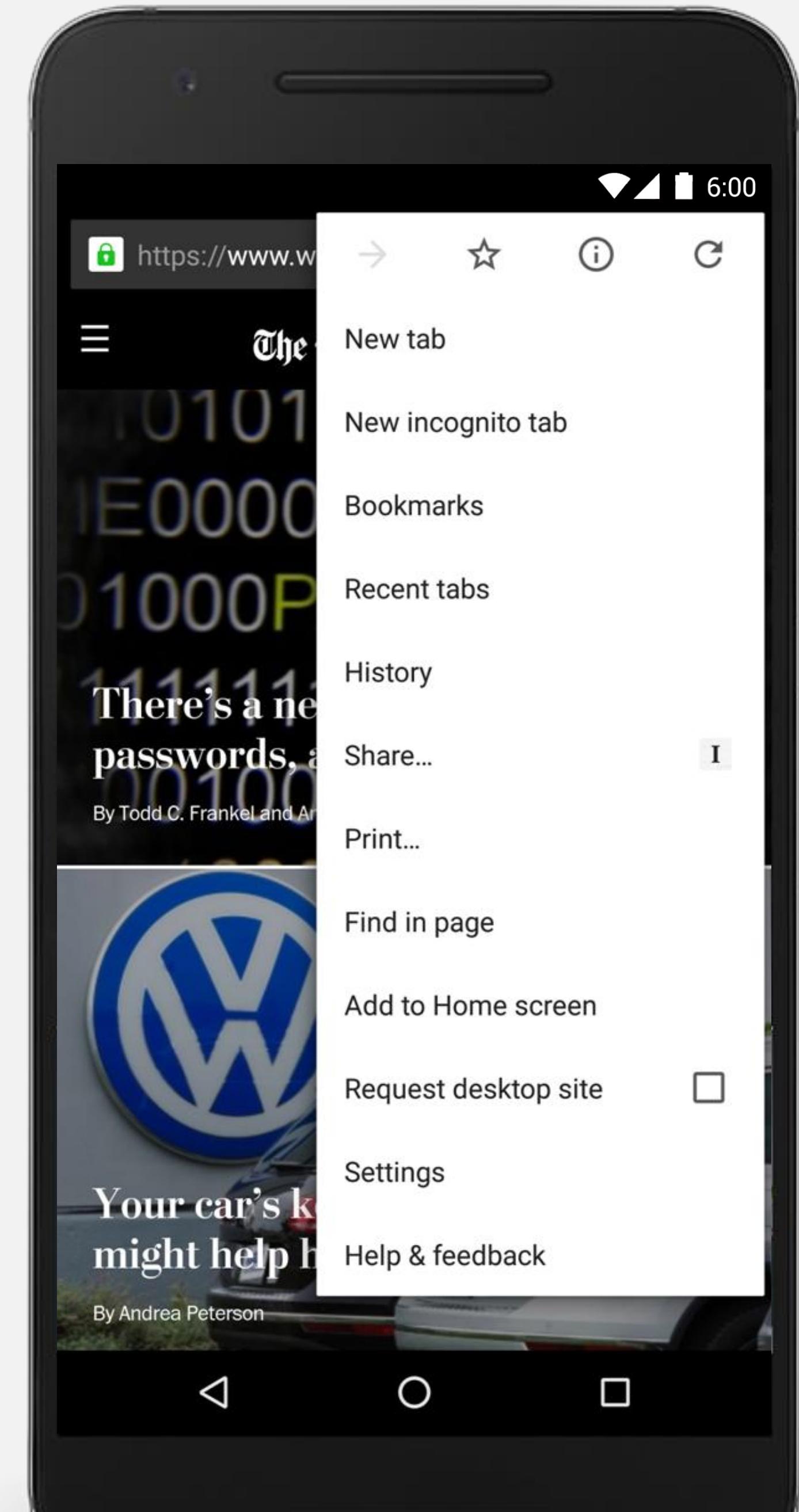


Add To Home Screen

Was Broken

Required user interaction

Buried deep in menus



Add To Home Screen

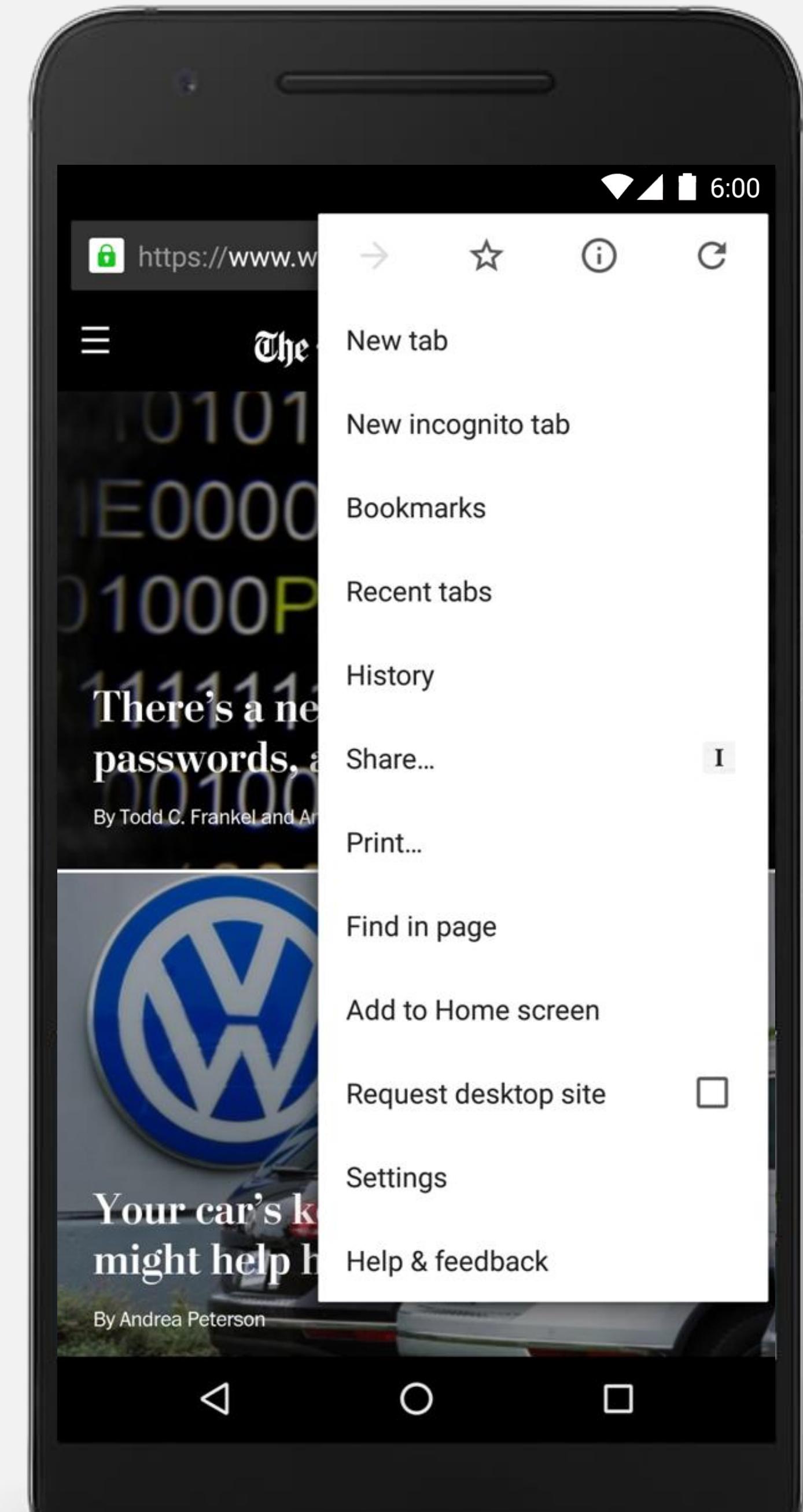
Was Broken

Required user interaction

Buried deep in menus

Where would it start?

Dependent on bookmark



Add To Home Screen

Was Broken

Required user interaction

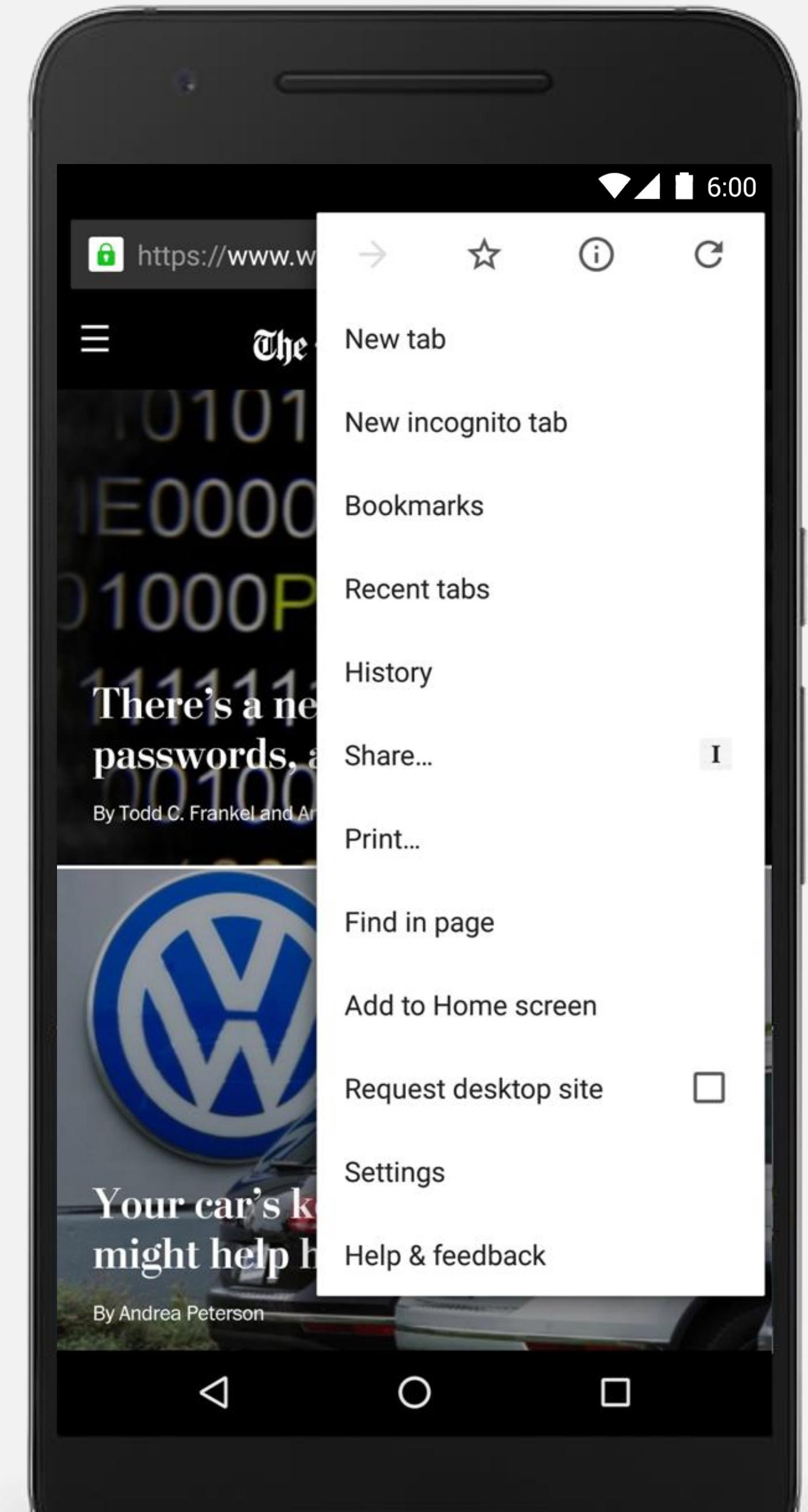
Buried deep in menus

Where would it start?

Dependent on bookmark

Would it work offline?

Users didn't expect offline

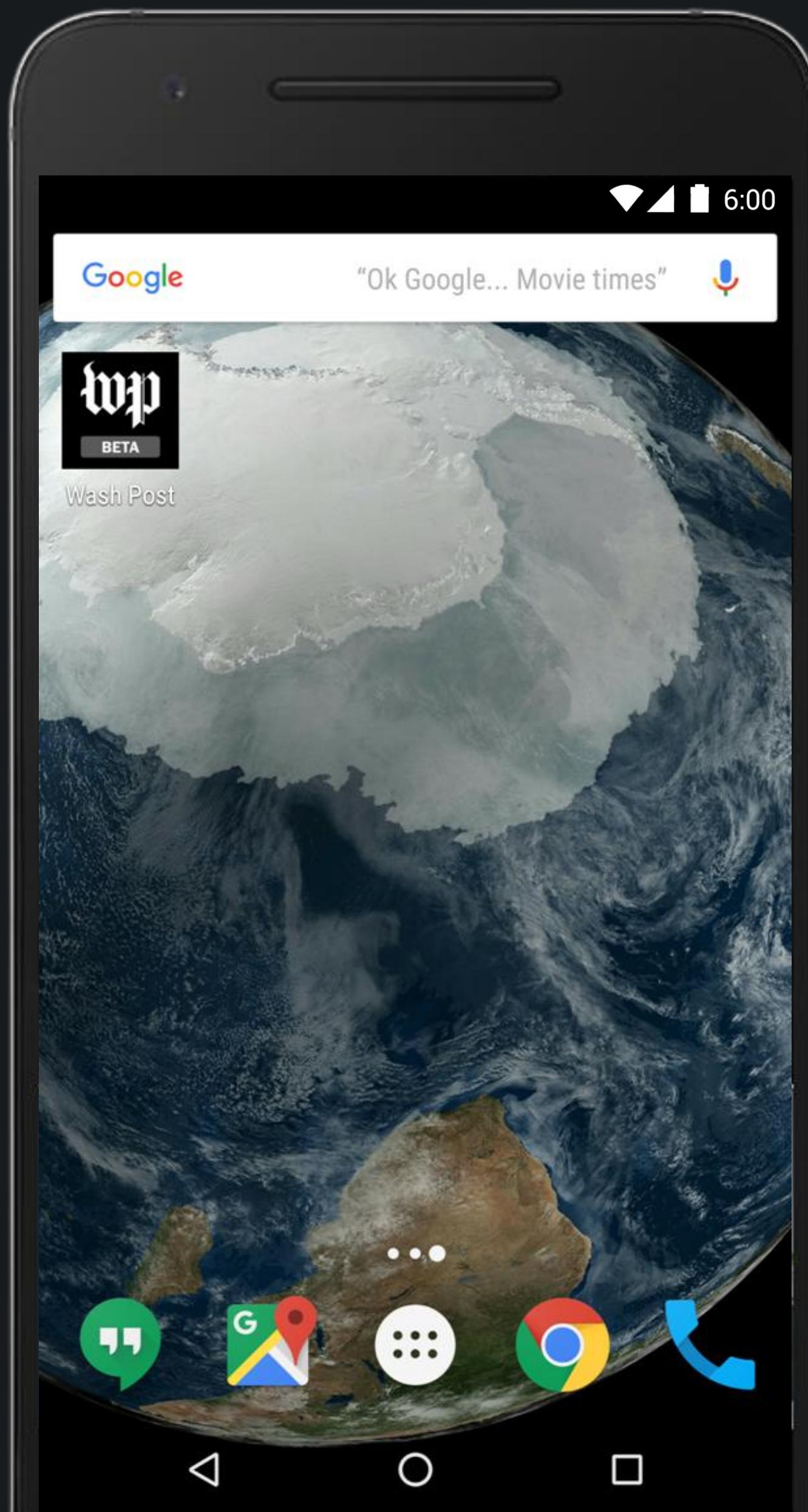


```
<link rel="manifest" href="/manifest.json">

{
  "name": "The Washington Post",
  "short_name": "Wash Post",
  "icons": [ {
    "src": "icon-48x48.png",
    "sizes": "48x48",
    "type": "image/png"
  }, { ... } ],
  "start_url": "/index.html",
  "display": "standalone",
  "orientation": "portrait",
  "background_color": "#000000",
  "theme_color": "#000000"
}
```

manifest.json

```
{  
  "name": "The Washington Post",  
  "short_name": "Wash Post",  
  "icons": [ {  
    "src": "icon-48x48.png",  
    "sizes": "48x48",  
    "type": "image/png"  
  }, { ... } ],  
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  "display": "standalone",  
  "orientation": "portrait",  
  "background_color": "#000000",  
  "theme_color": "#000000"  
}
```



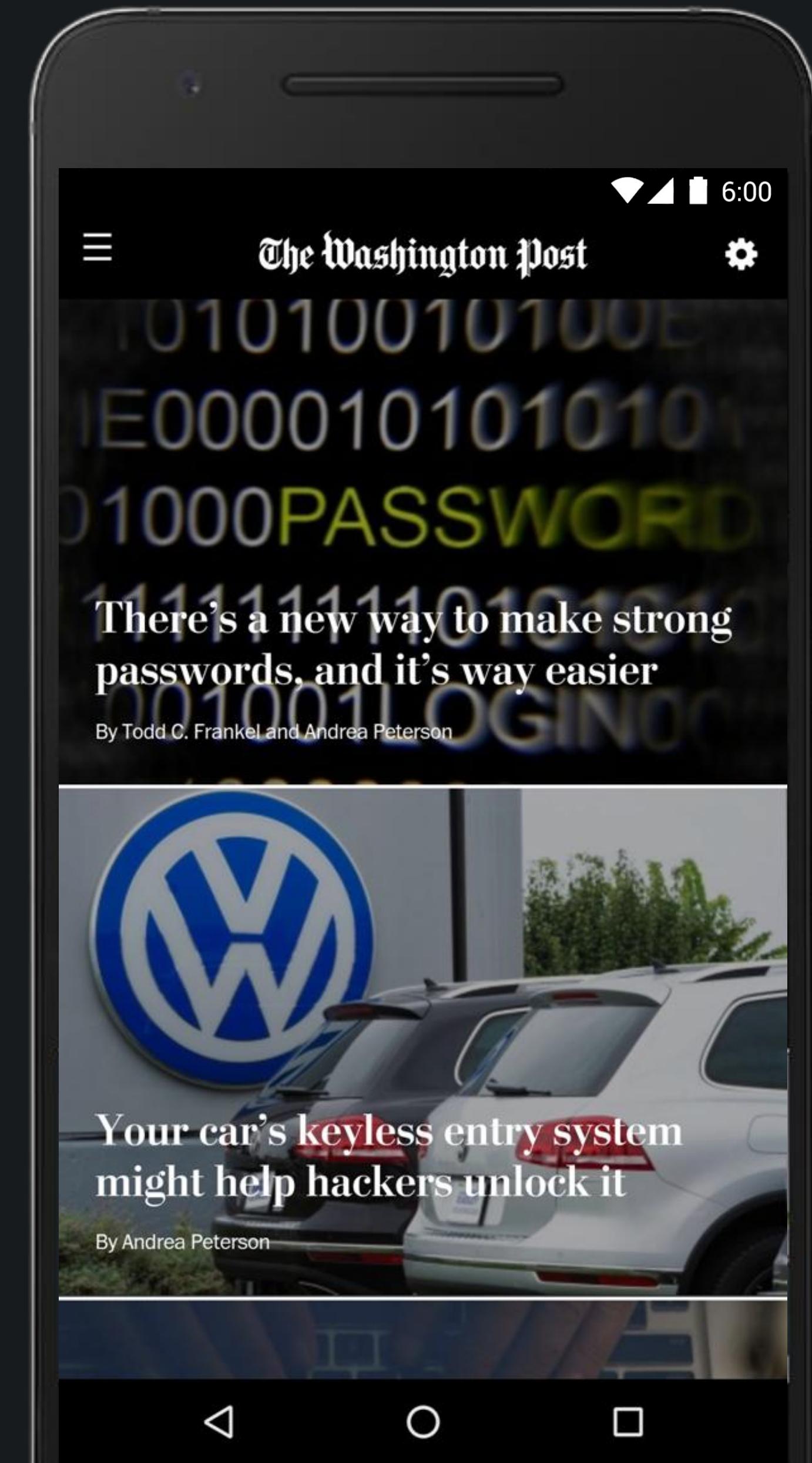
manifest.json

```
{  
  "name": "The Washington Post",  
  "short_name": "Wash Post",  
  "icons": [ {  
    "src": "icon-48x48.png",  
    "sizes": "48x48",  
    "type": "image/png"  
  }, { ... } ],  
  "start_url": "/index.html",  
  "display": "standalone",  
  "orientation": "portrait",  
  "background_color": "#000000",  
  "theme_color": "#000000"  
}
```



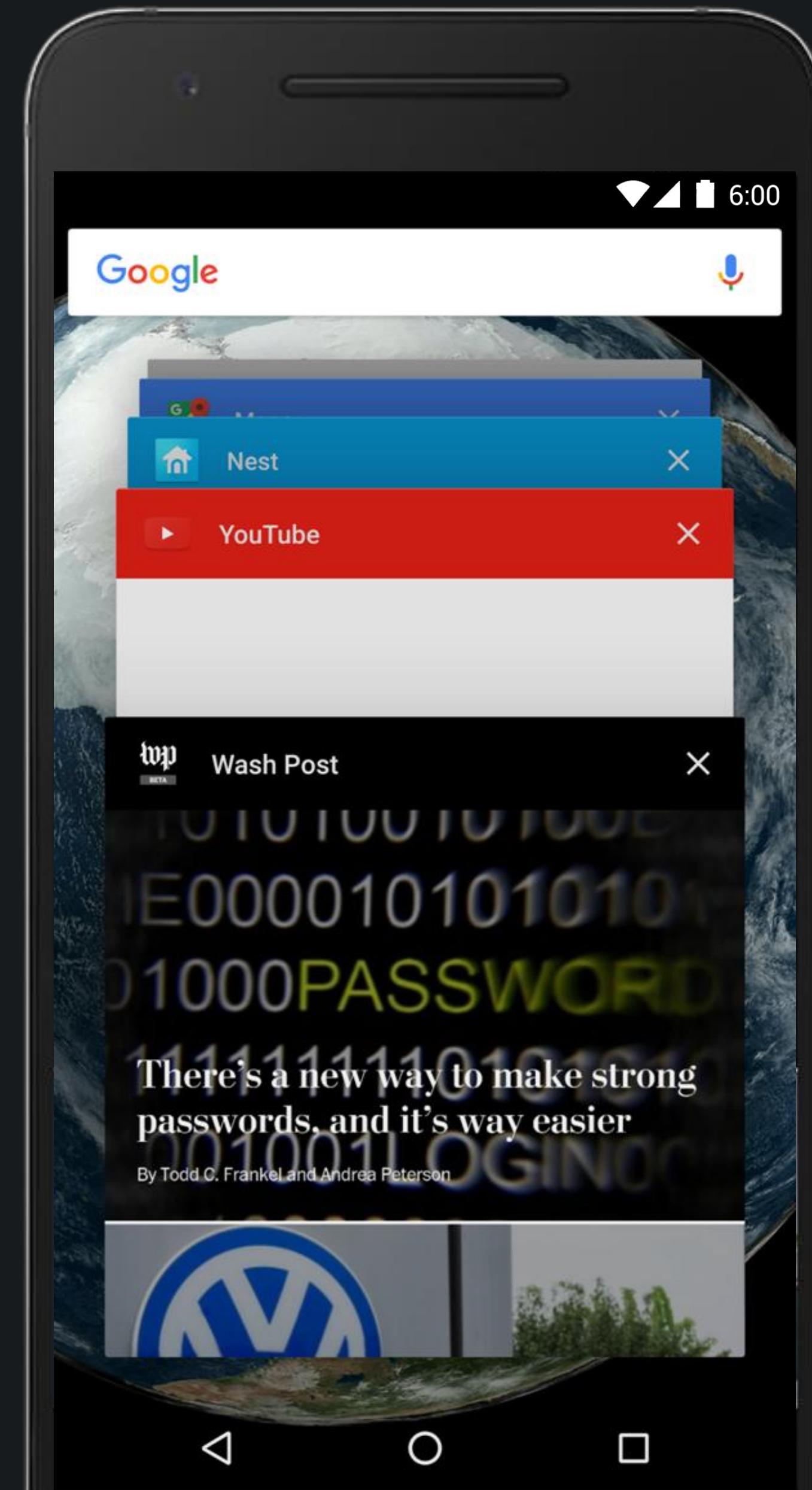
manifest.json

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  }, { ... } ],  
  "start_url": "/index.html",  
  "display": "standalone",  
  "orientation": "portrait",  
  "background_color": "#000000",  
  "theme_color": "#000000"  
}
```



manifest.json

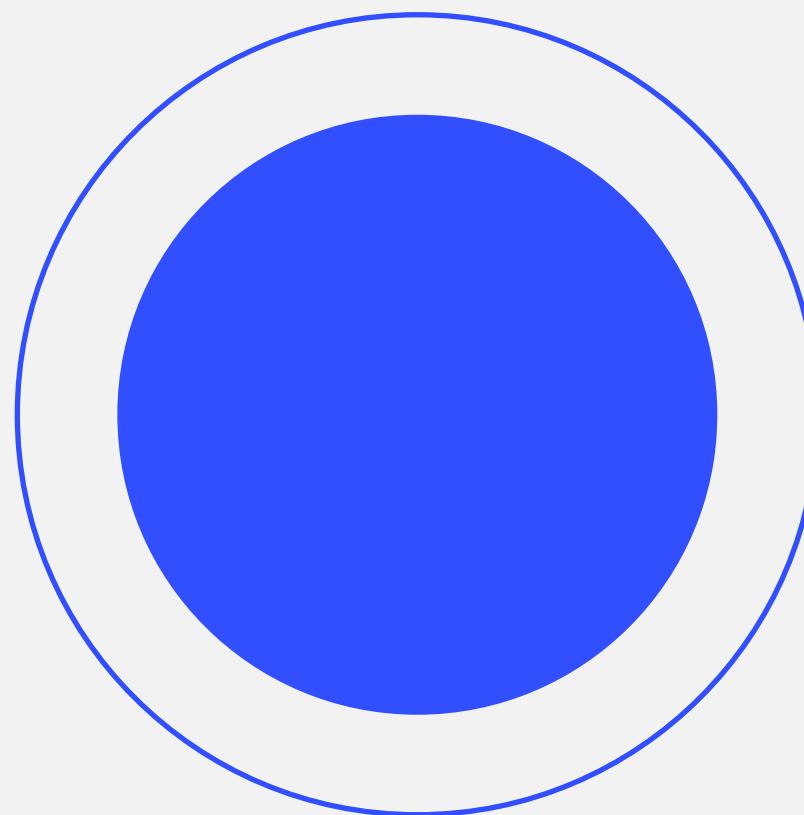
```
{  
  "name": "The Washington Post",  
  "short_name": "Wash Post",  
  "icons": [ {  
    "src": "icon-48x48.png",  
    "sizes": "48x48",  
    "type": "image/png"  
  }, { ... } ],  
  "start_url": "/index.html",  
  "display": "standalone",  
  "orientation": "portrait",  
  "background_color": "#000000",  
  "theme_color": "#000000"  
}
```



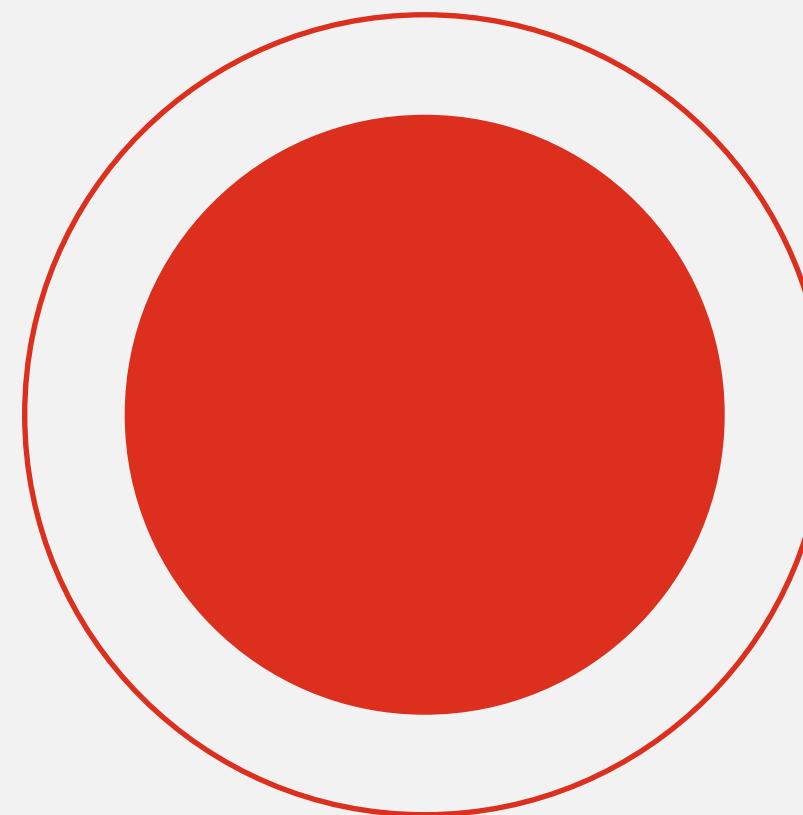
Good, but what about prompt to install?



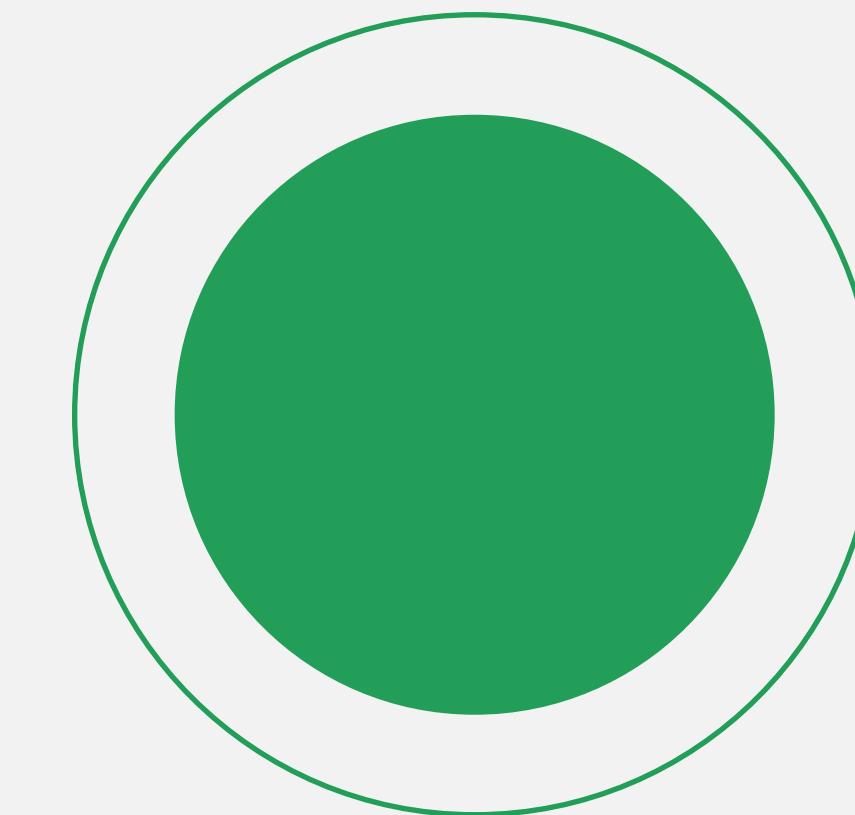
A Promise to the User



Works
Offline

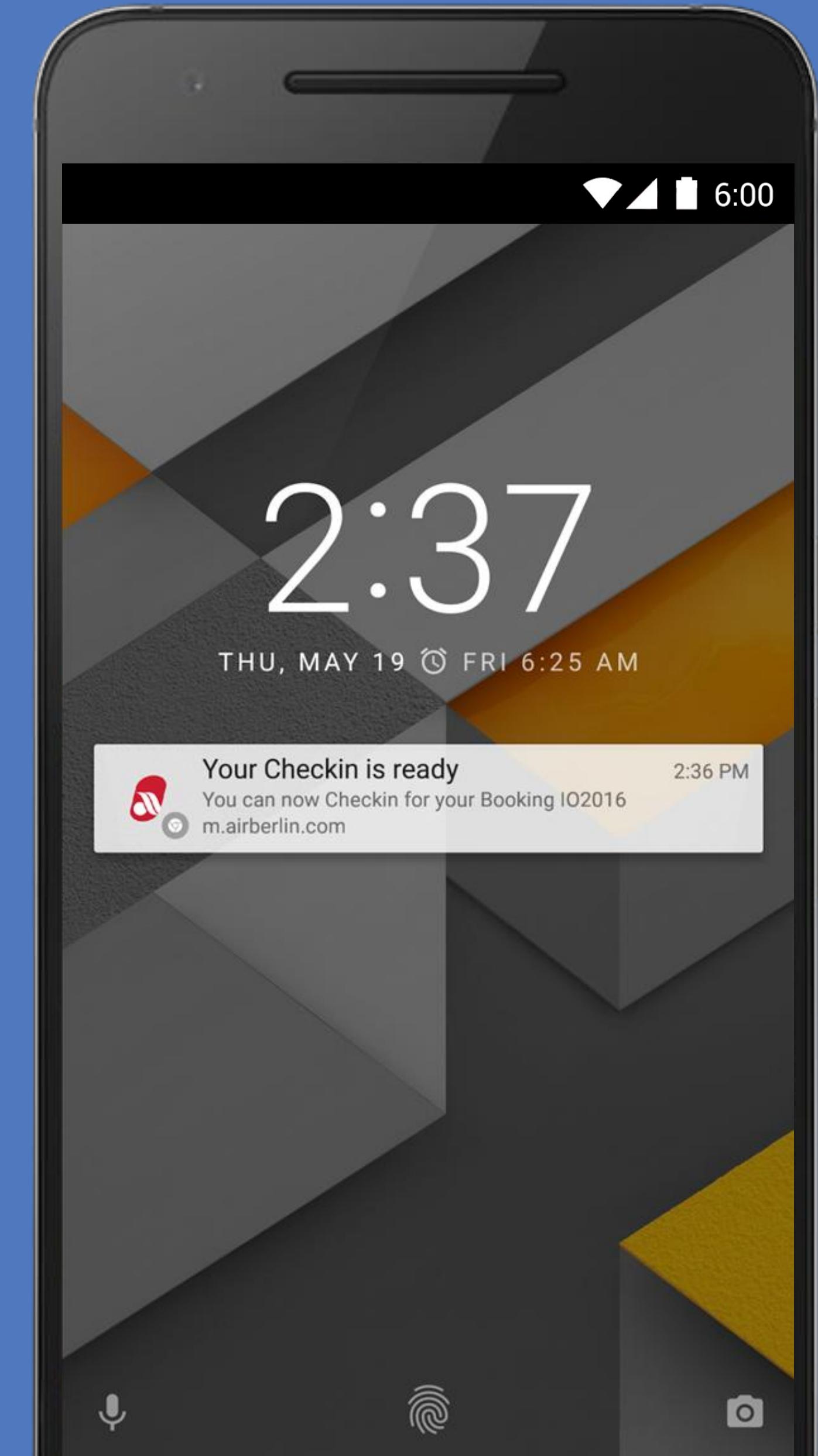


Consistent
Experience



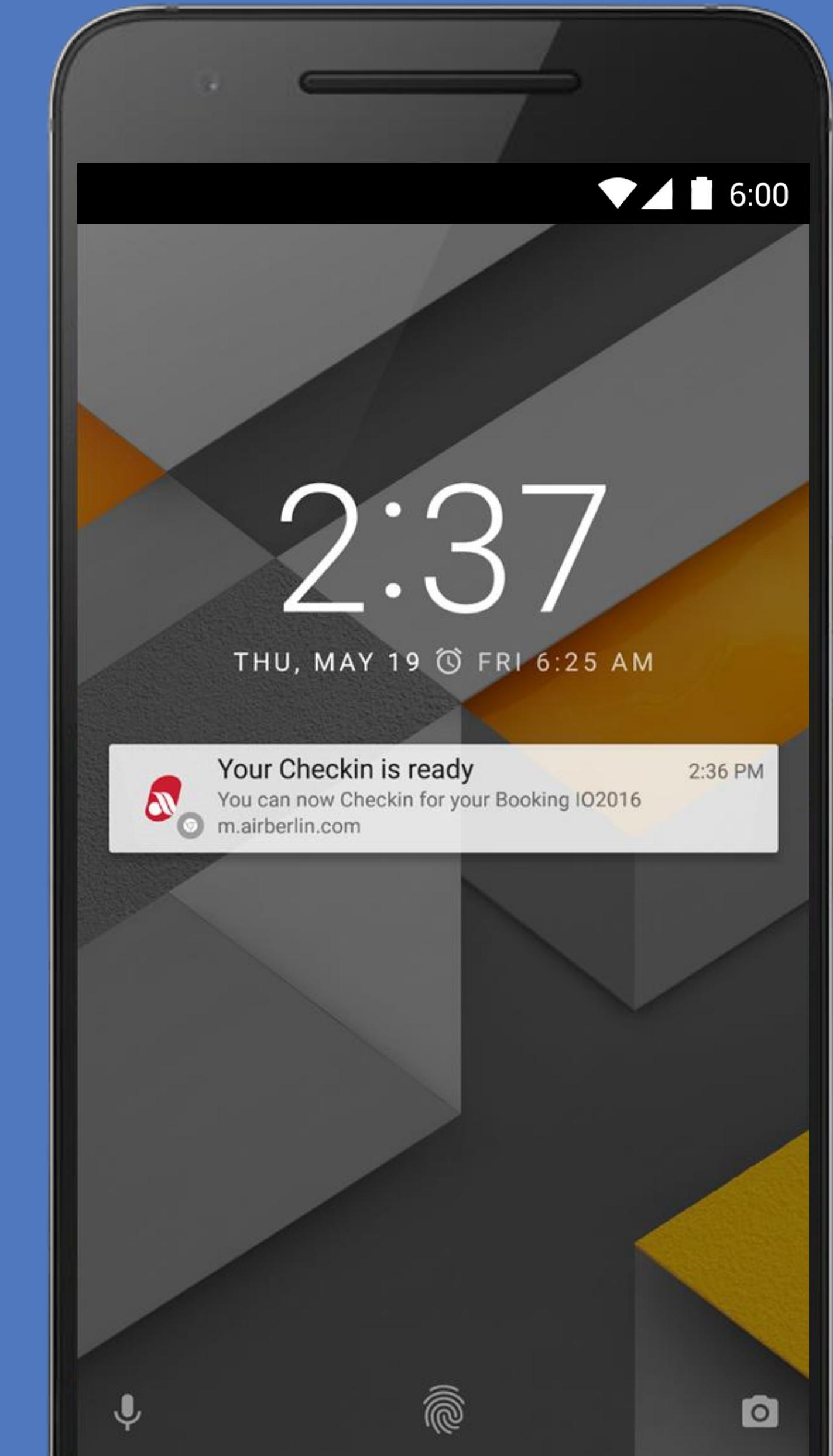
The User is
Engaged

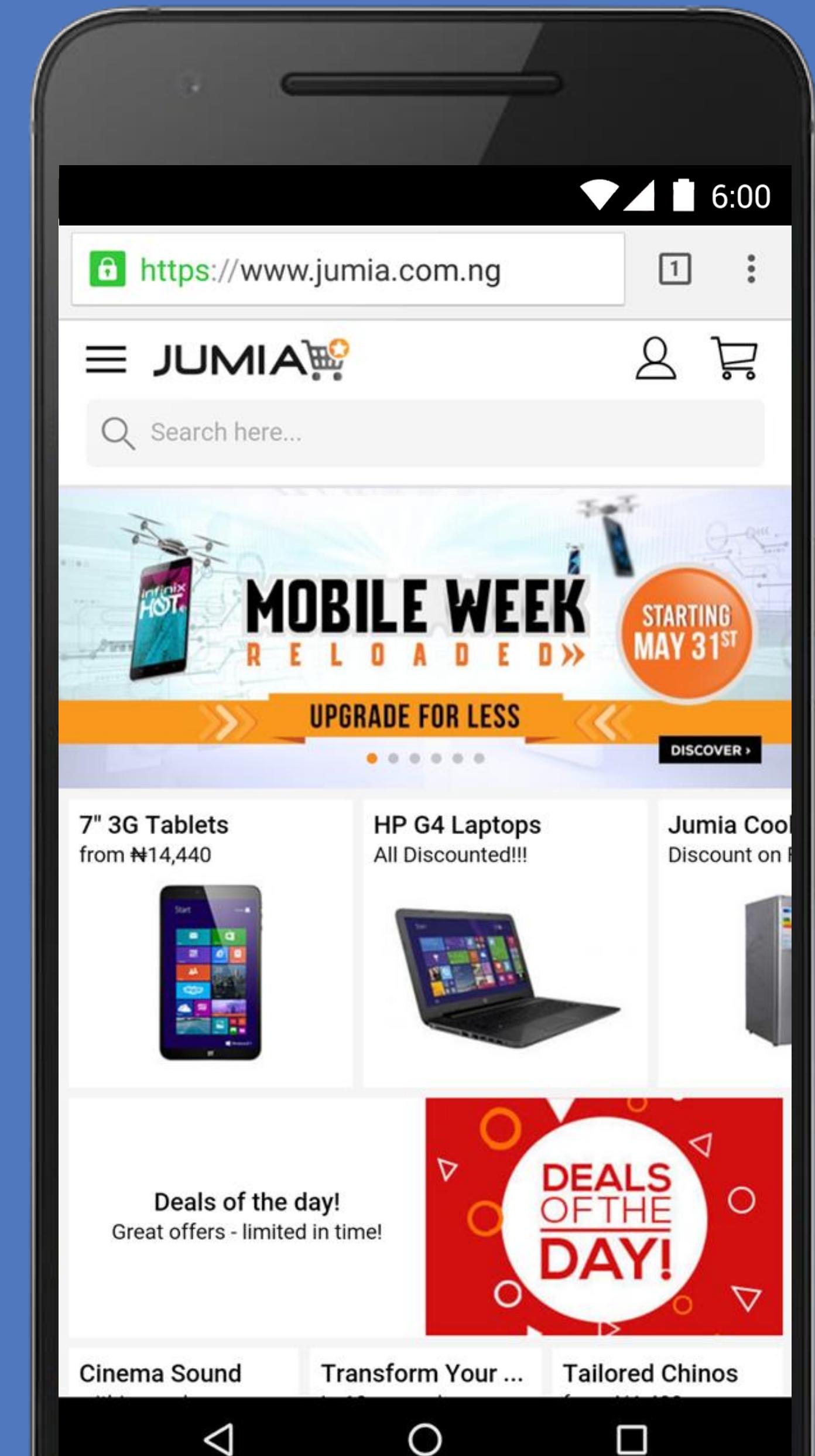
Web Push Notifications



Web Push Notifications

The browser doesn't need to be
open!





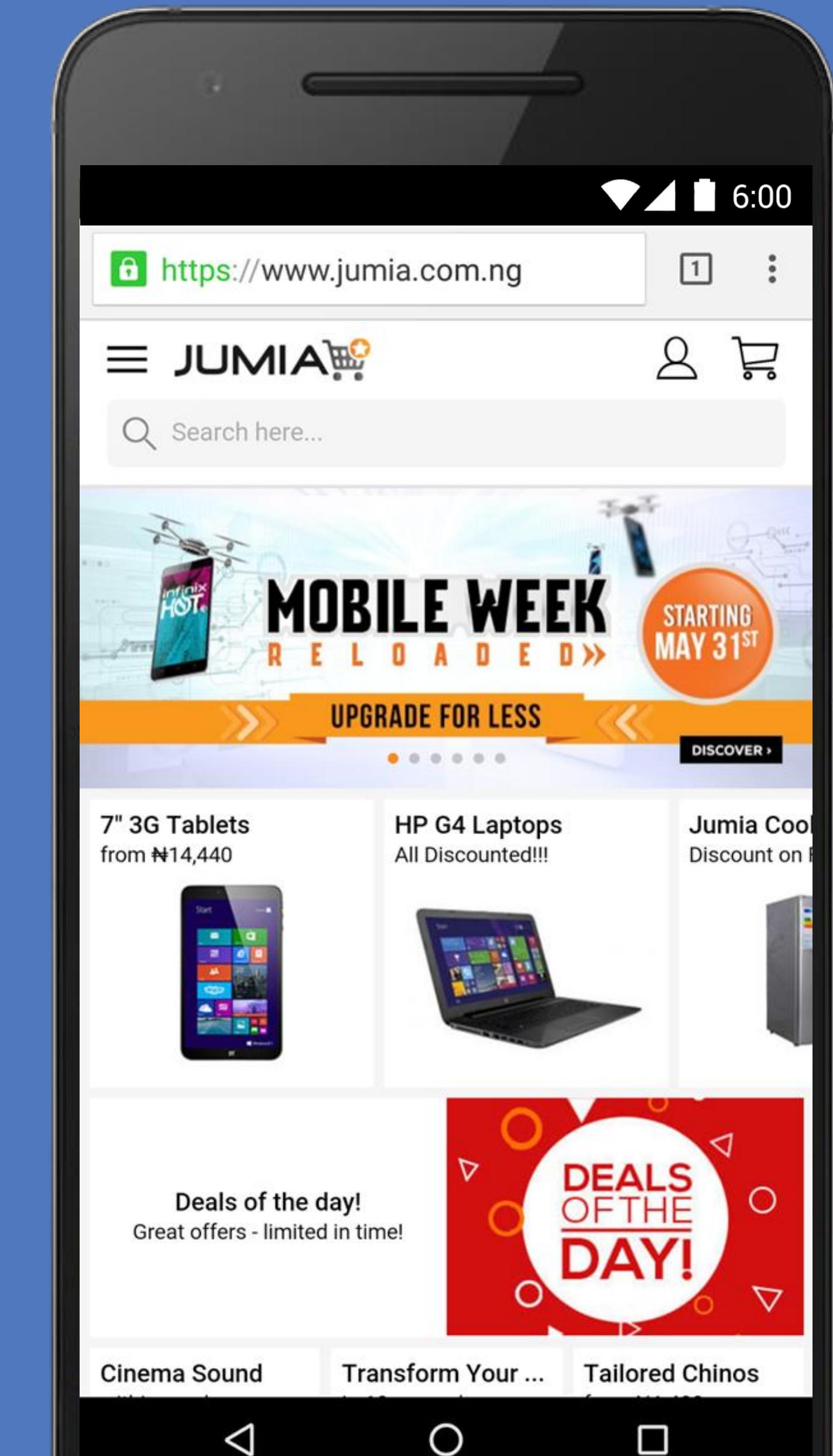


38%

open rate

9X

more conversions on
previously abandoned carts



Anatomy of a notification

I feel I need it and
it matters right now.



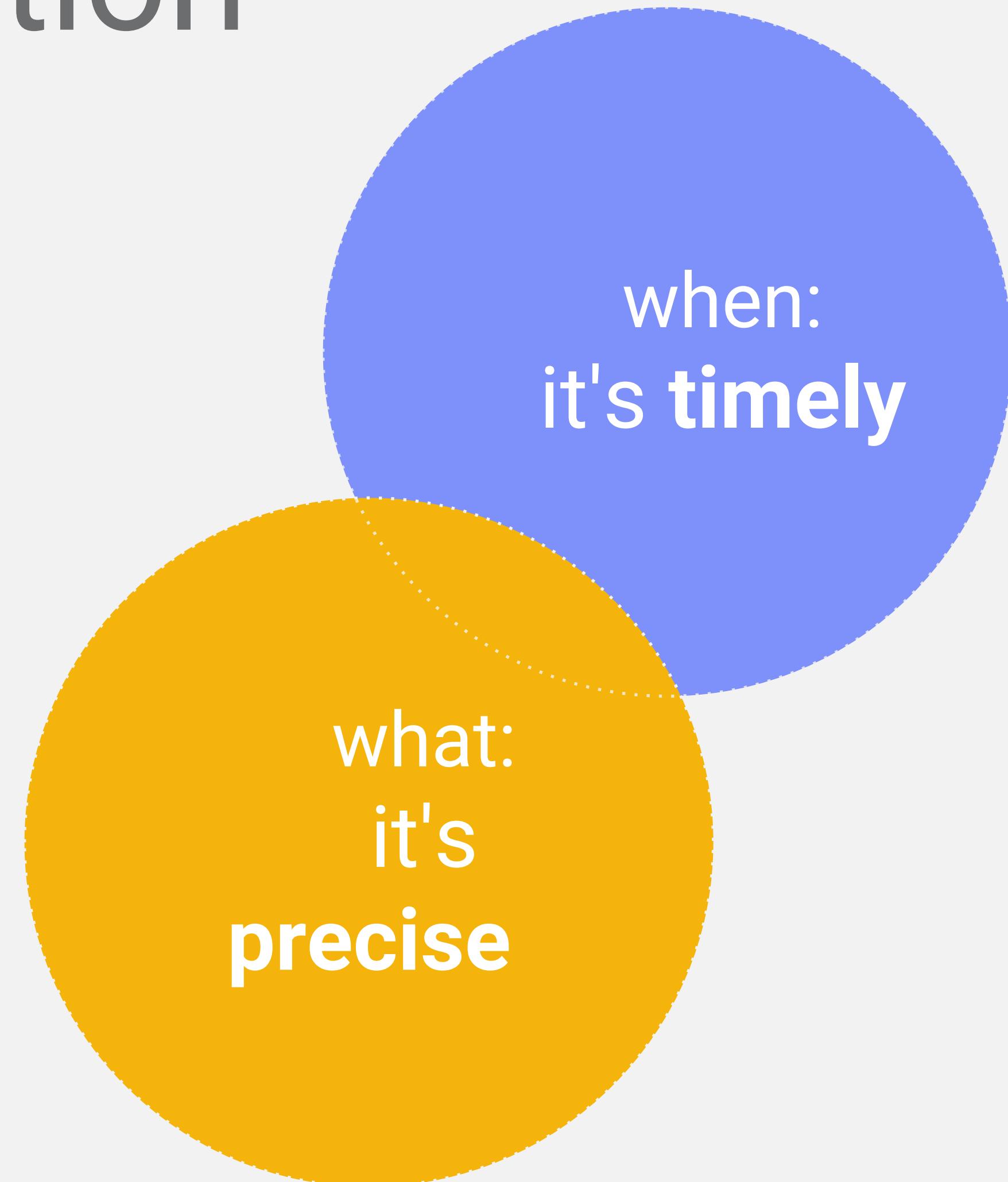
Anatomy of a notification

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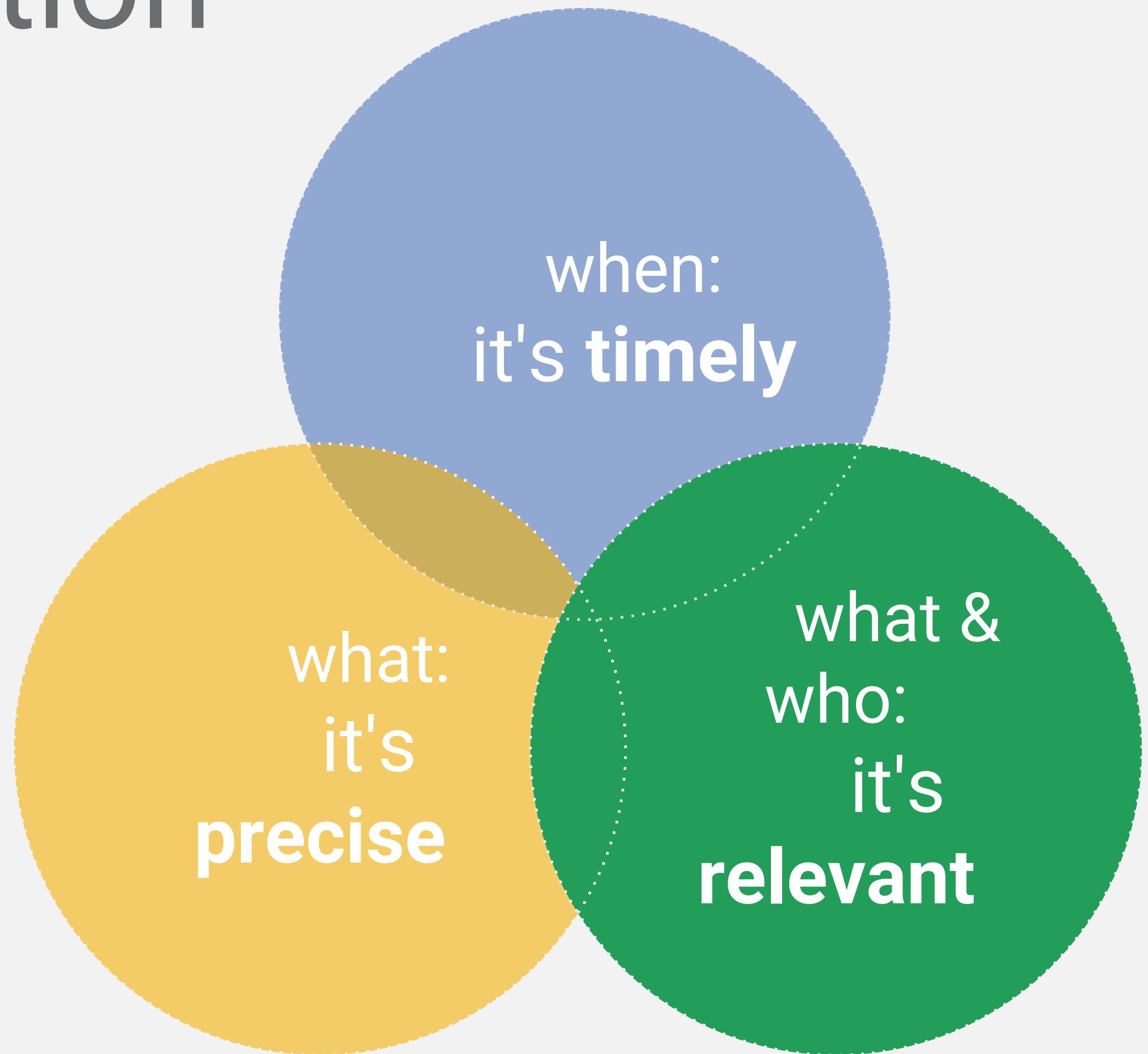
Anatomy of a notification

It has **specific info**
that's good to
know or act upon.

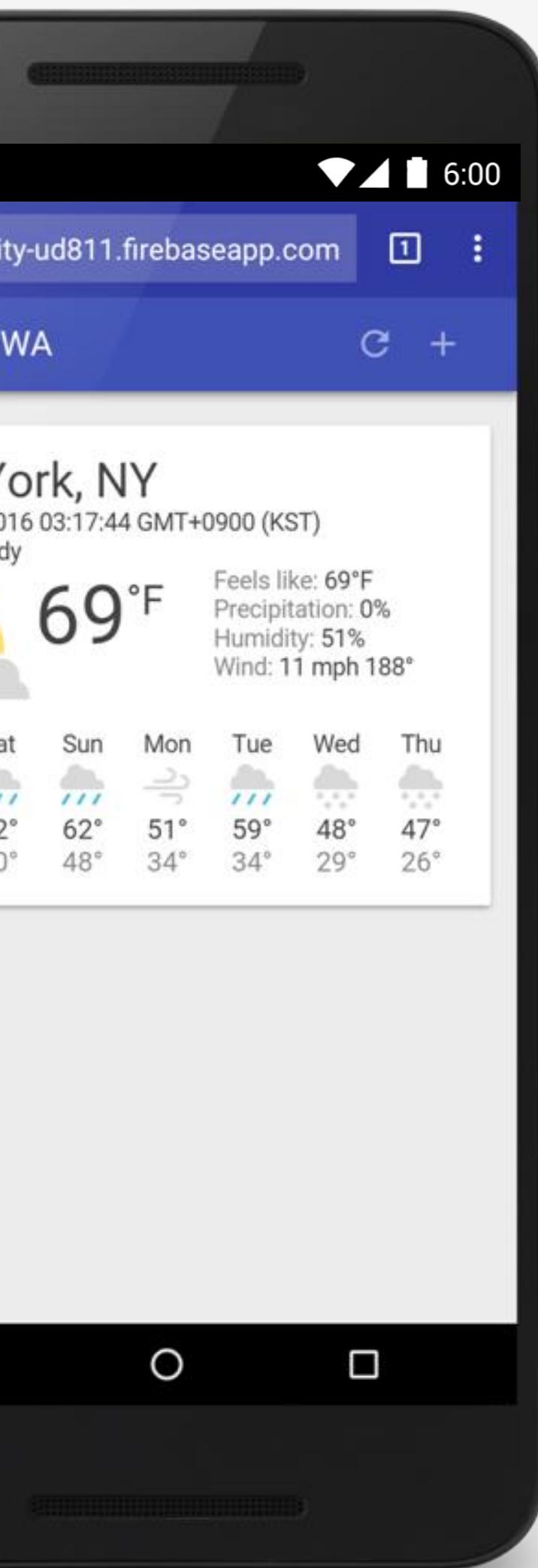


Anatomy of a notification

It's from people or sources
that matter to me, which
makes it personal.



Built on Service Workers



```
/* ServiceWorker.js */

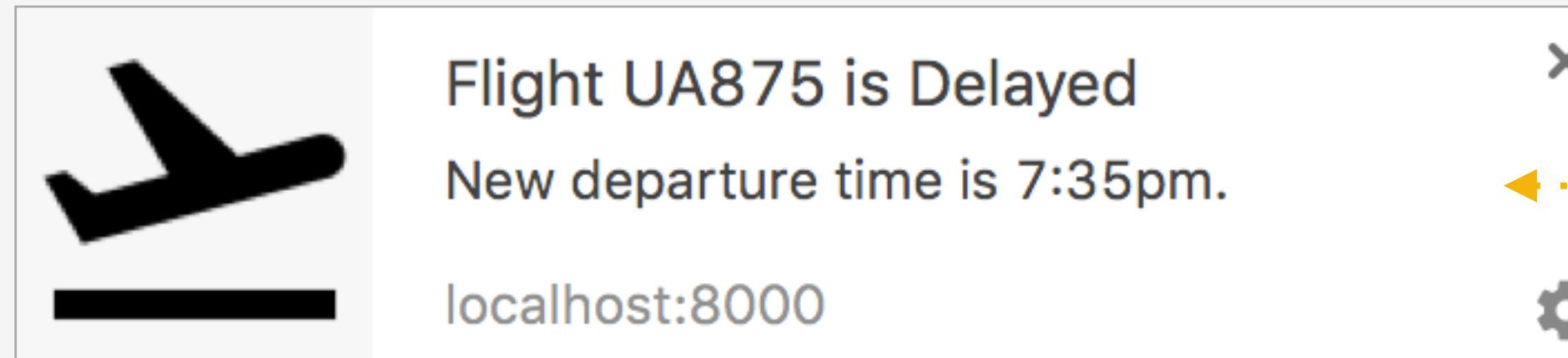
onfetch = function(e) {
  if(e.request.url == "app.html") {
    e.respondWith(
      caches.match(e.request)
    );
  }

  if(e.request.url == "content.json") {
    // go to the network for updates,
    // meanwhile, use cached content
    fetch(...).then(function(r) {
      r.asJSON().then(function(json) {
        e.client.postMessage(json);
      });
    });
  }
};
```

GET /content.json HTTP/1.1
HOST example.com

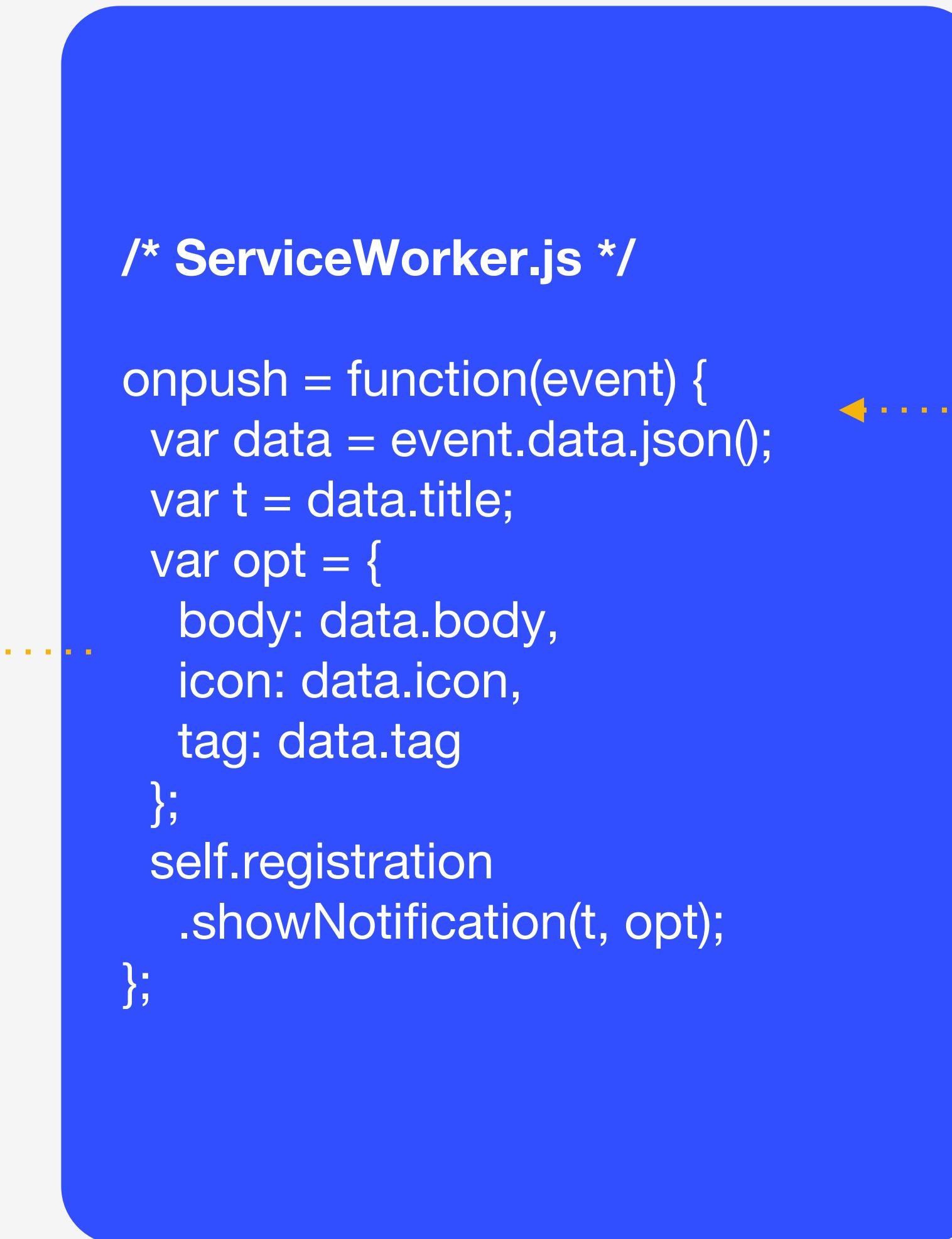


Built on Service Workers



```
/* ServiceWorker.js */

onpush = function(event) {
  var data = event.data.json();
  var t = data.title;
  var opt = {
    body: data.body,
    icon: data.icon,
    tag: data.tag
  };
  self.registration
    .showNotification(t, opt);
};
```



End
Point



example.co
m

Check out the Push code lab

The screenshot shows a web browser displaying a codelab titled "Enable Push Notifications for your Web App". The URL in the address bar is <https://codelabs.developers.google.com/codelabs/push-notifications/index.html?index=..%2F..%2Fpwa-roadshow#0>. The page has a blue header with the title and a timer indicating "32 min remaining". On the left, a vertical sidebar lists 8 steps: 1. Overview (selected), 2. Get the sample code, 3. Get started, 4. Get started with Service Worker, 5. Make a project on the Google Developer Console, 6. Add a manifest, 7. Subscribe to Push Notifications, 8. Send a request from the command line for GCM to push a message. The main content area for step 1 contains an "Overview" section with a "New demo available!" message, a "What you'll learn" section, and a "Next Step" button.

Enable Push Notifications for your Web App

← Enable Push Notifications for your Web App

32 min remaining

1 Overview

2 Get the sample code

3 Get started

4 Get started with Service Worker

5 Make a project on the Google Developer Console

6 Add a manifest

7 Subscribe to Push Notifications

8 Send a request from the command line for GCM to push a message

Send a request using

1. Overview

New demo available!

Click to see our new push demo
<http://myorg.github.io>

In this codelab, you'll learn how to add Push Notifications to web applications. This will enable you to re-engage users with breaking news and information about new content. You'll also learn the basics of Service Workers.

What you'll learn

- ✓ Service Worker basics: installation and event handling
- ✓ How to set up a Google Cloud Messaging (GCM) account
- ✓ How to add a web manifest
- ✓ Techniques for requesting GCM to send a notification to a web client

>

Stay Secure

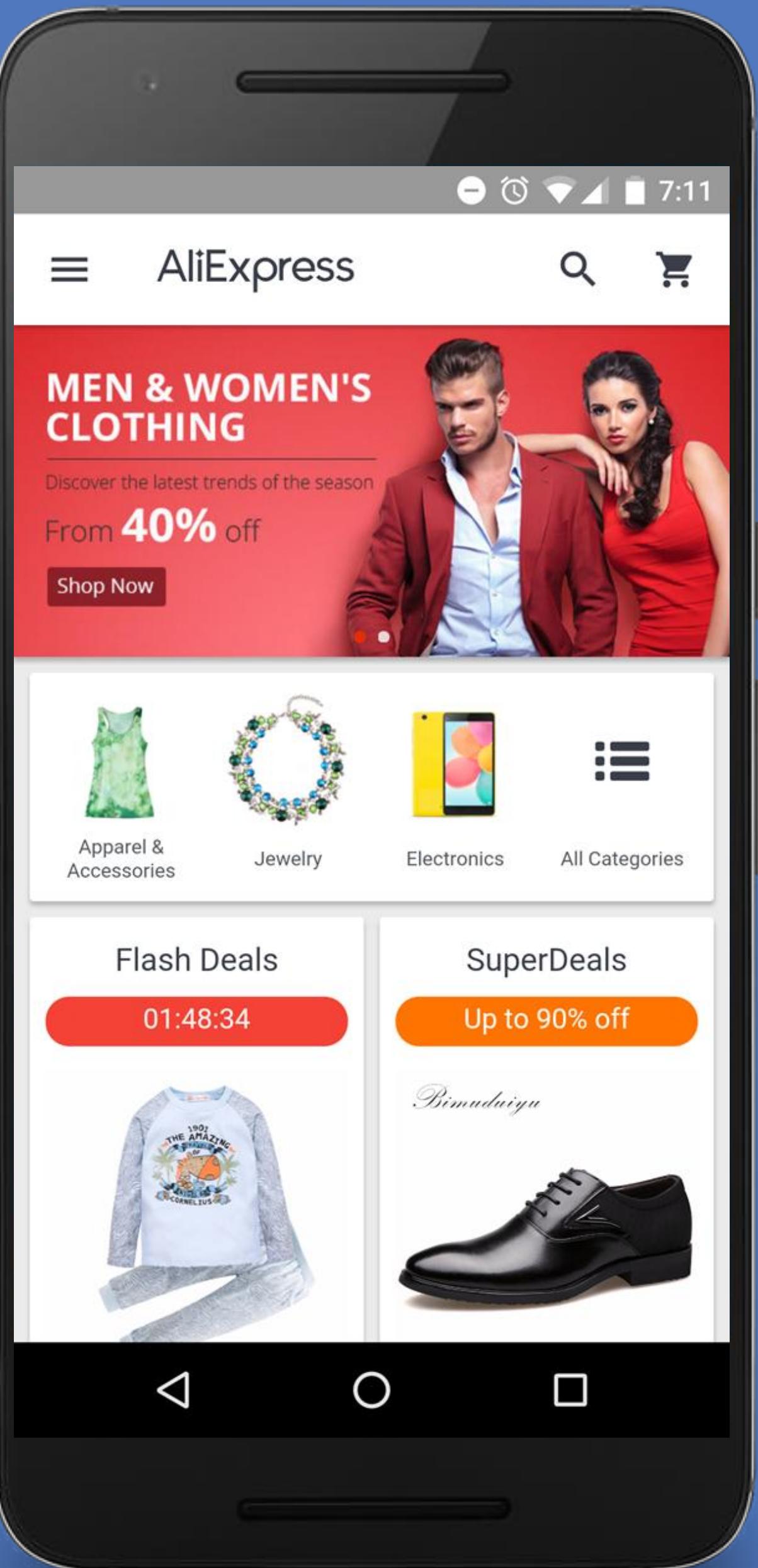


Use a Service Worker



Engage Your Users





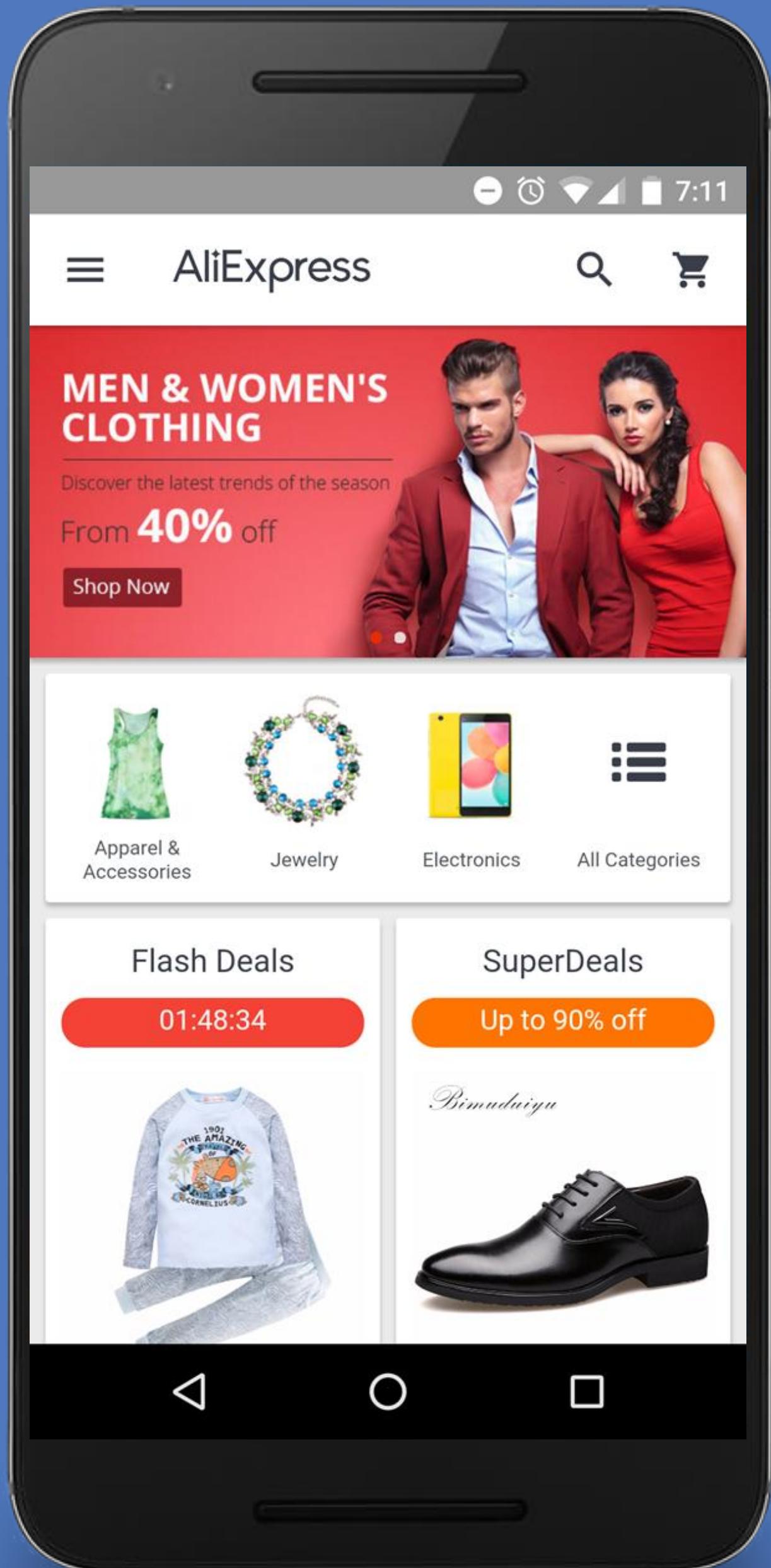


2x more

page views

74% increase

in time spent





2x more

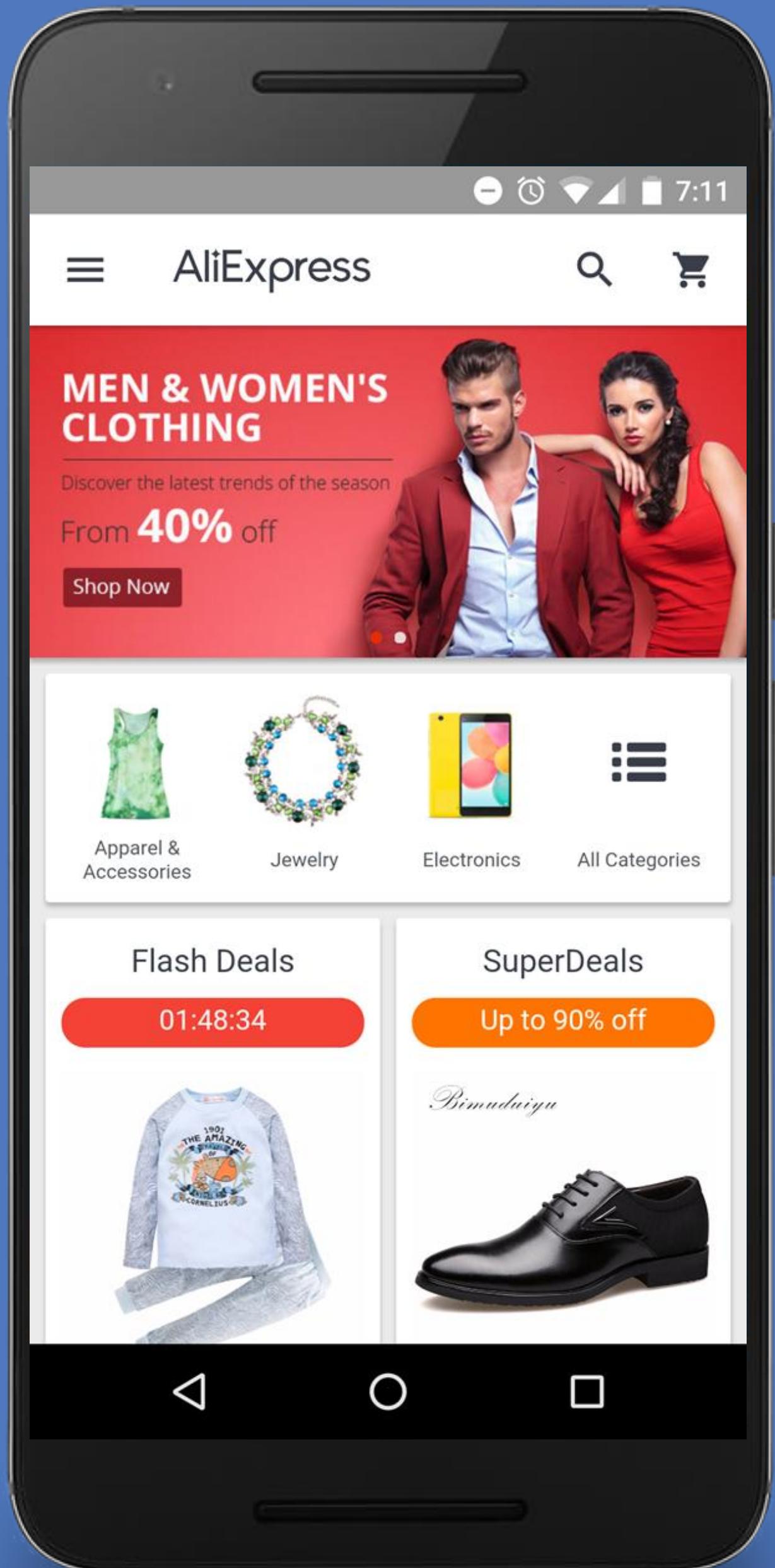
page views

74% increase

in time spent

82% more

conversions on iOS



Progressive Web Apps

are progressive.

Progressive Web Apps

are a new level of caring about
the quality of your user experience



AliExpress

airberlin

The Washington Post

Mobify



letras*

5miles

okonga.com



Walgreens
at the corner of happy & healthy®



タウンワーク
TOWNWORK

Flipkart



PURE
FORMULAS™

snapdeal

KASKUS

JUMIA

Jalantikus

Booking.com



Vamos nos
inspirar

<https://pwa.rocks/>



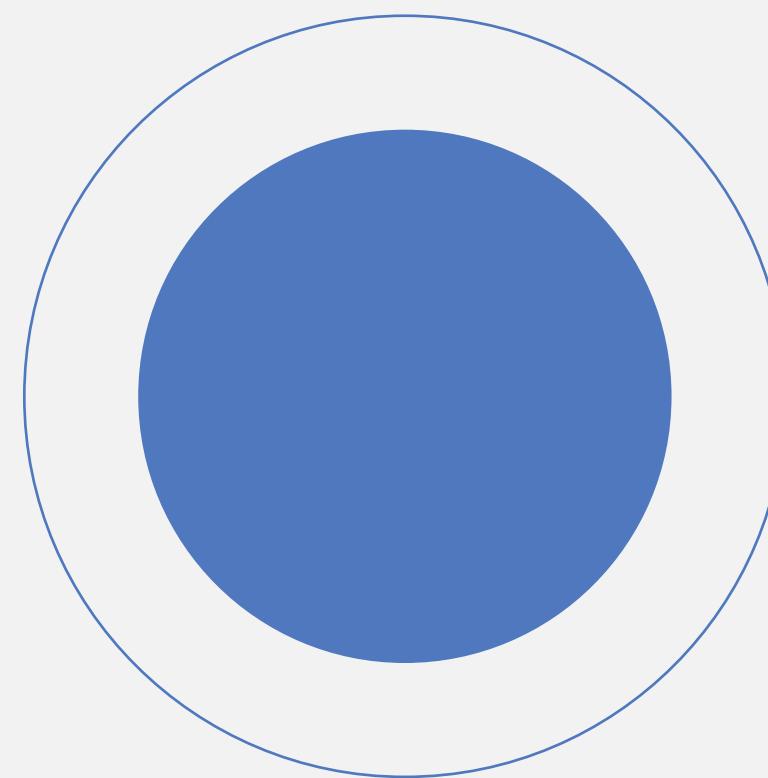
Go build!

meow

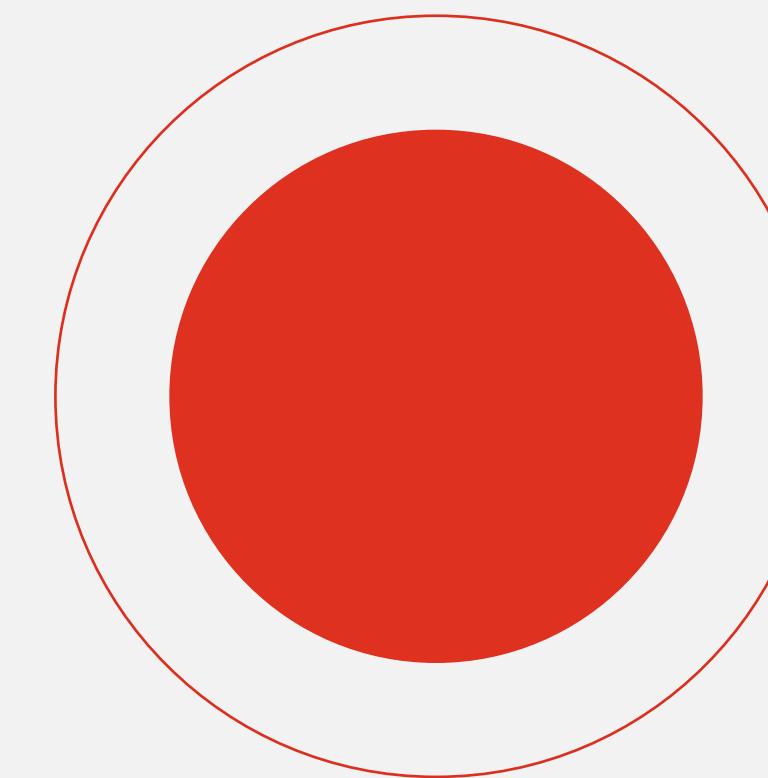


Vamos
construir

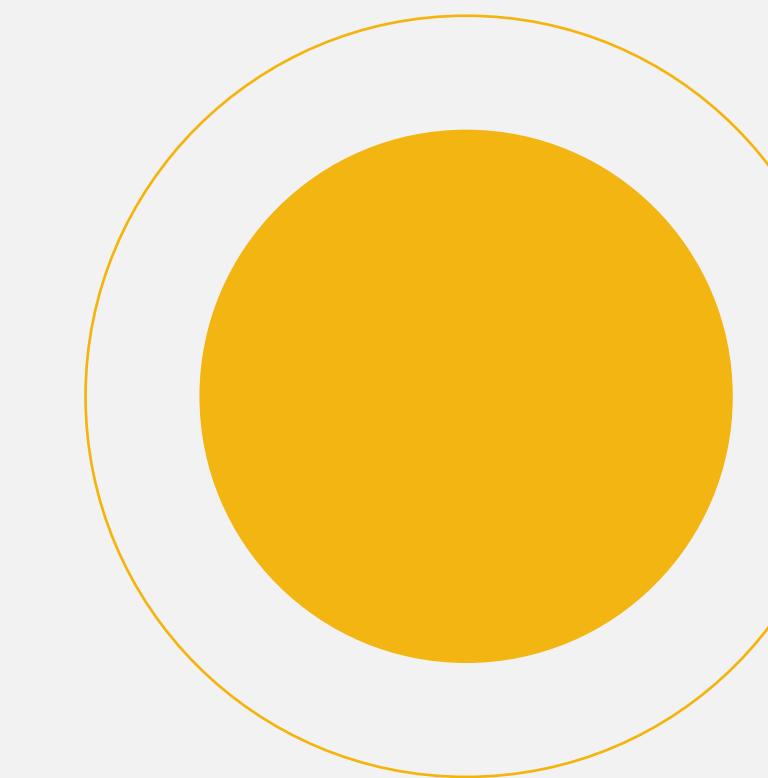
QUAIS TECNOLOGIAS VAMOS UTILIZAR?



HTML5



CSS3



Javascript

DE QUAIS FERRAMENTAS VAMOS PRECISAR?

Google
Chrome



Webserver
for Chrome



Editor de
Textos



Sublime Text

Rest API



Progressive Web App Checklist

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

Progressive Web App Checklist



Progressive Web Apps (PWA) are reliable, fast, and engaging, although there are many things that can take a PWA from a baseline to exemplary experience.

To help teams create the best possible experiences we've put together this checklist which breaks down all the things we think it takes to be a [Baseline PWA](#), and how to take that a step further with an [Exemplary PWA](#) by providing a more meaningful offline experience, reaching interactive even faster and taking care of many more important details.

Baseline Progressive Web App Checklist

The [Lighthouse tool](#) is able to automatically verify many items on the this list and may prove helpful in easily testing sites.

Site is served over HTTPS

To Test Use Lighthouse to verify [Served over HTTPS](#)

To Fix [Implement HTTPS](#) and check out [letsencrypt.org](#) to get started.

Pages are responsive on tablets & mobile devices

- To Test
- Use Lighthouse to verify Yes to all of Design is mobile-friendly, although manually checking can also be helpful.
 - Check the [Mobile Friendly Test](#)

To Fix Look at implementing a [responsive design](#), or adaptively serving a viewport-friendly site.

All app URLs load while offline

Resources

- Washington Post PWA - <https://wapo.com/pwa>
- SSLMate - <https://sslmate.com>
- Let's Encrypt - <https://letsencrypt.org/>
- Search Ranking Guidance - <https://bit.ly/https-migration>
- The offline cookbook - <https://jakearchibald.com/2014/offline-cookbook/>
- Code labs - <https://codelabs.developers.google.com/pwa-roadshow>

Obrigado!

PROGRESSIVE WEB APP

SITe 2017 – CCT/UENP

