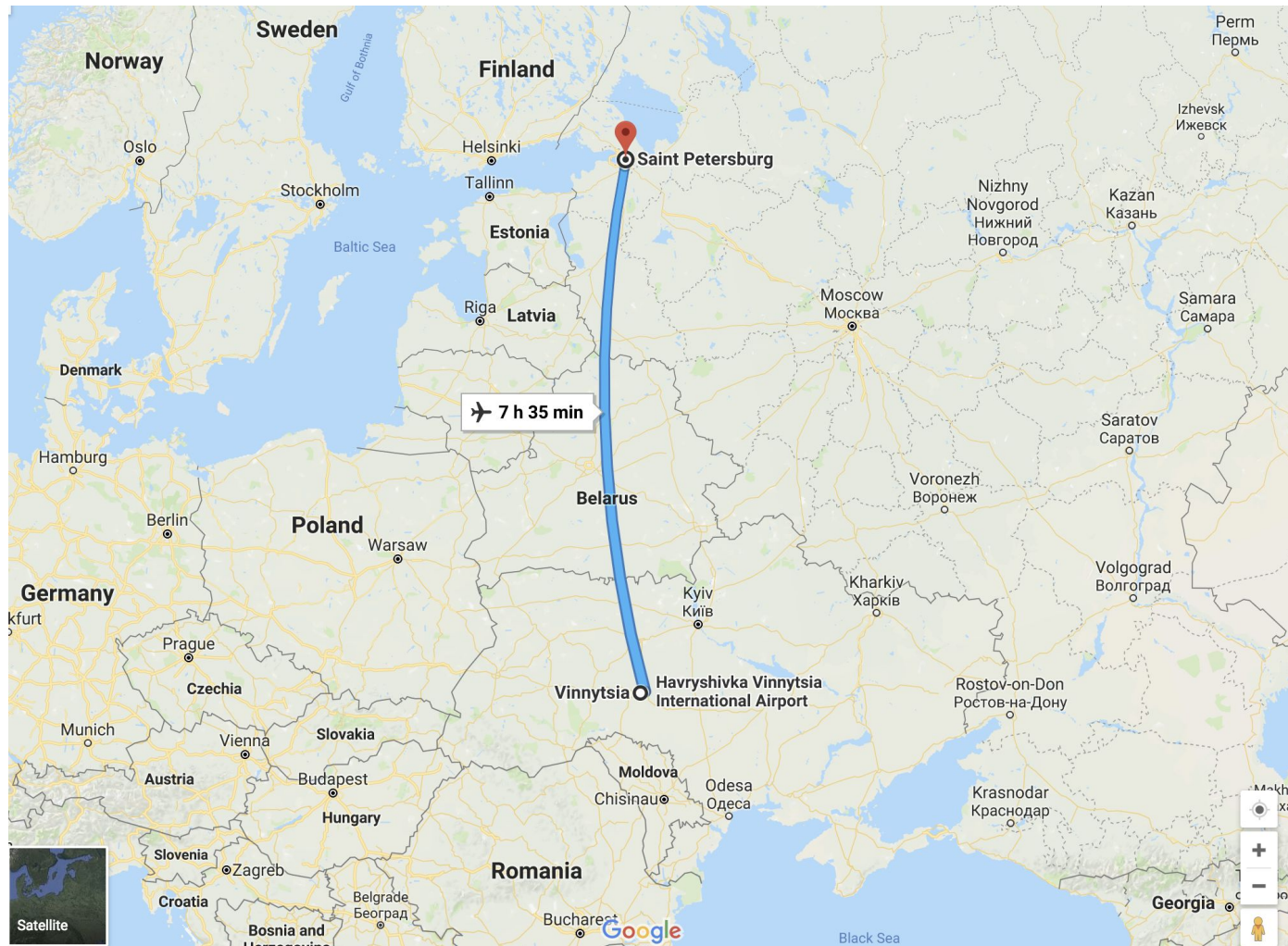


Performance Driven Development

Артем Денисов









open source
initiative



Быстродействие



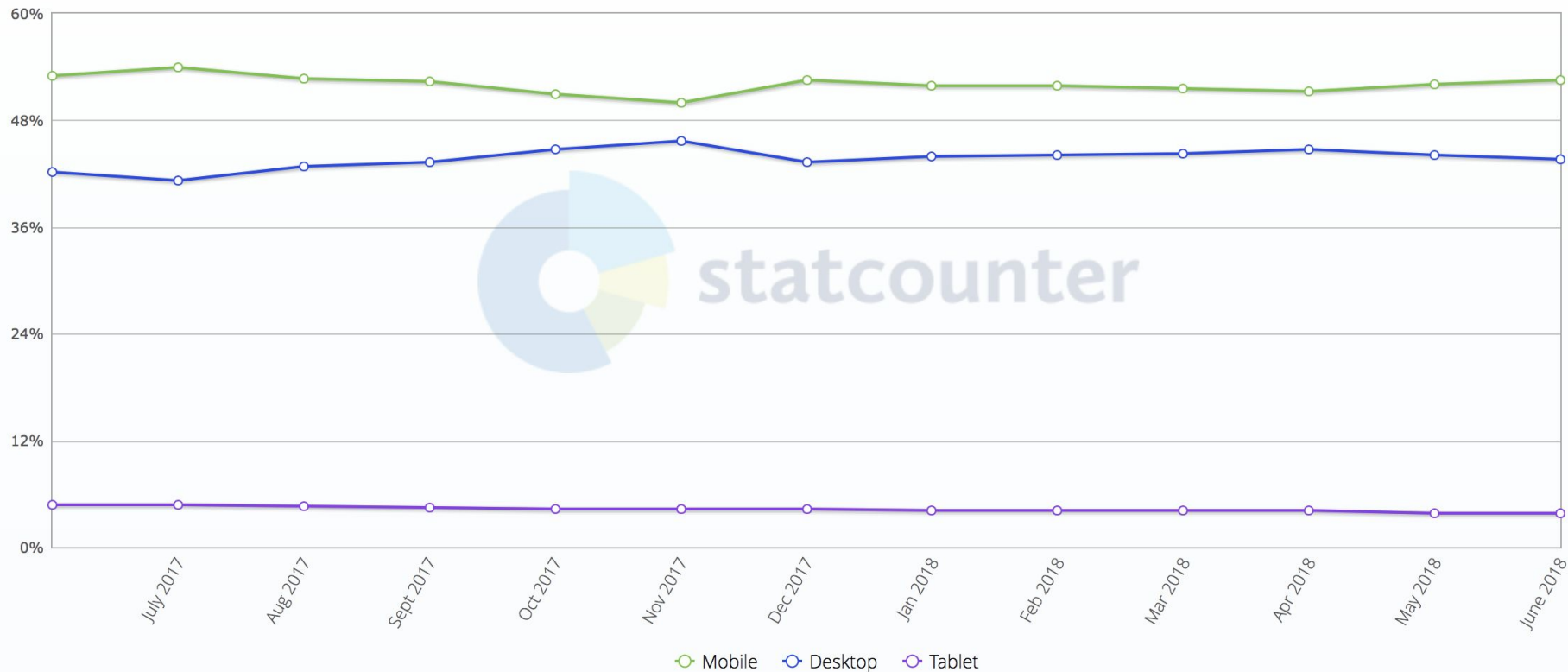
github - denar90
medium - denar90
twitter - denar90_

ПОЧЕМУ #perfmatters?

Desktop vs Mobile vs Tablet Market Share Worldwide

June 2017 - June 2018

[Edit Chart Data](#)

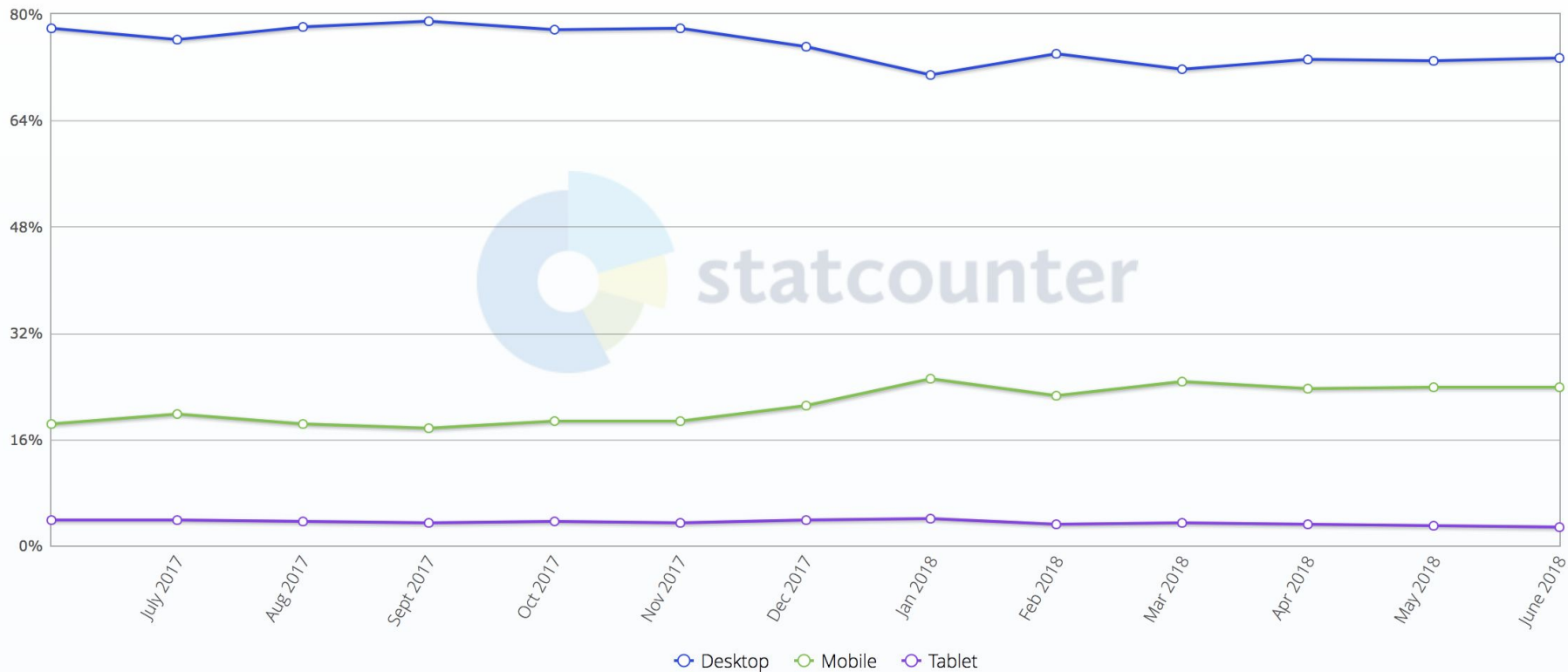


Desktop vs Mobile статистика в Российской Федерации

Desktop vs Mobile vs Tablet Market Share Russian Federation

June 2017 - June 2018

Edit Chart Data



<https://www.stonetemple.com/mobile-vs-desktop-usage-study/>

Industry	Mobile	Mobile 2017	Increase
Adult	73%	86%	13%
Computer and Electronics	43%	55%	12%
Gambling	66%	77%	11%
Games	42%	53%	10%
Business and Industry	57%	67%	10%
Sports	59%	67%	8%
Science	42%	50%	8%
People and Society	63%	71%	8%
Recreation and Hobbies	55%	63%	8%
Books and Literature	54%	61%	7%

Скорость загрузки страницы

MEDIAN DESKTOP
5.6 seconds
▼29.1%

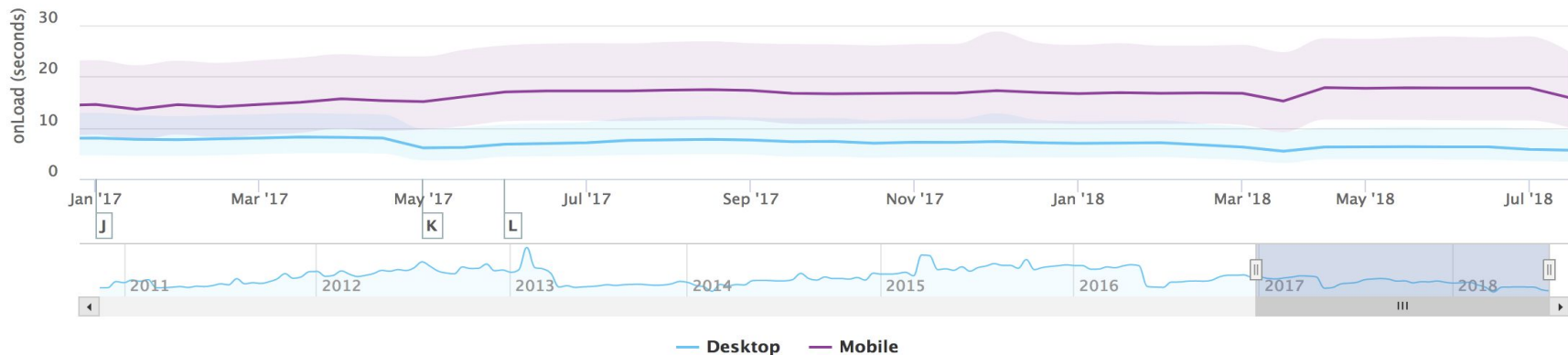
MEDIAN MOBILE
15.8 seconds
▲9.0%

Timeseries of onLoad

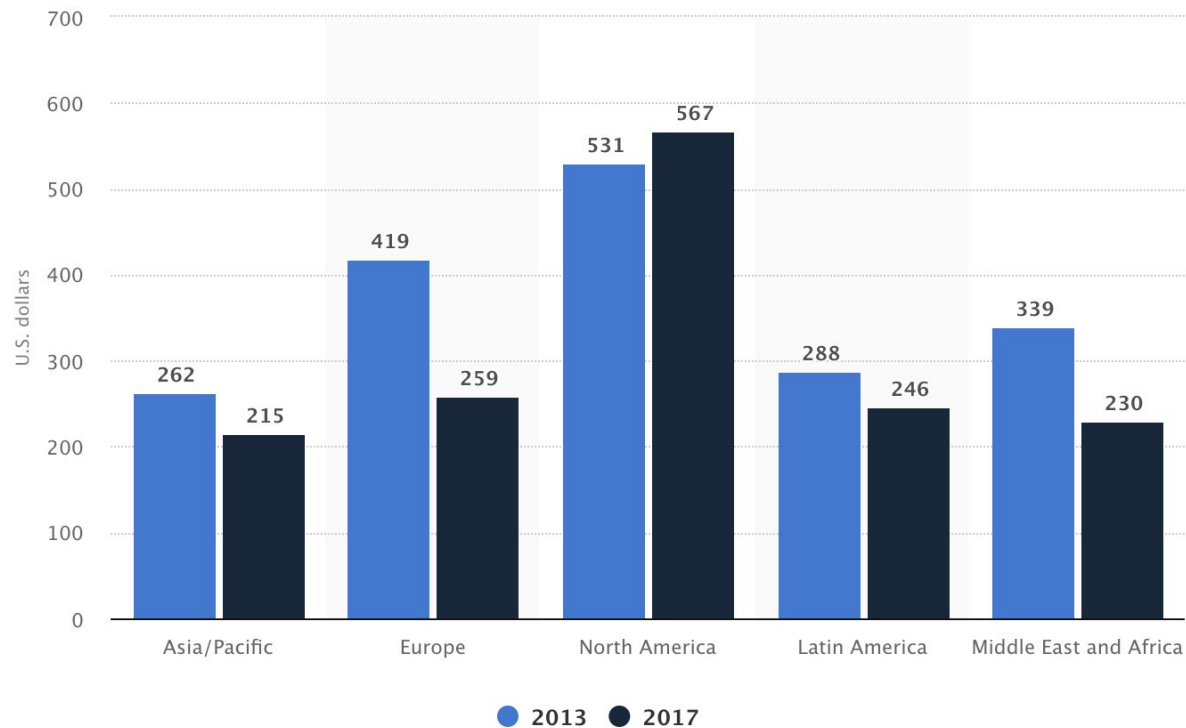
Source: httparchive.org

Zoom 1m 3m 6m YTD 1y All

From Dec 25, 2016 To Jul 15, 2018

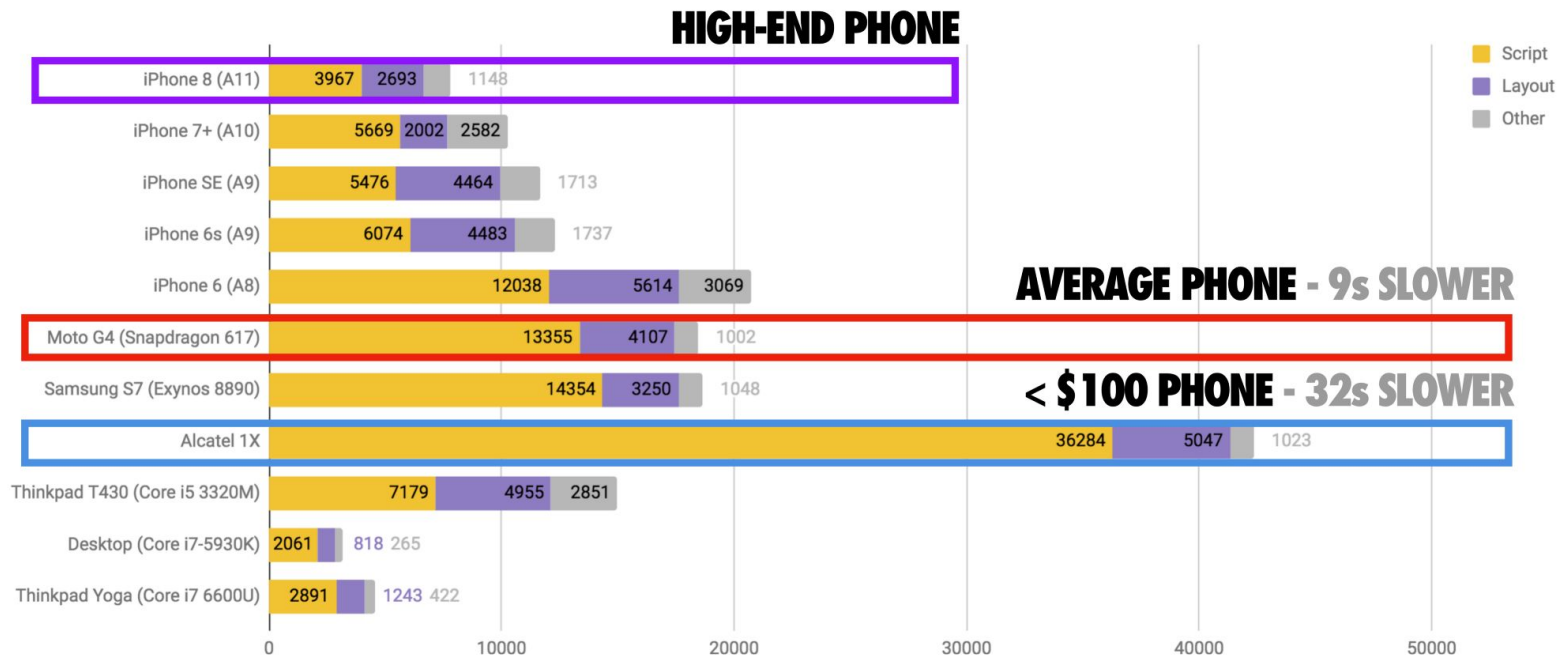


Статистика цен на смартфоны по регионам



Медиана = ~ \$250

JS PROCESSING FOR CNN.COM



[The cost of javascript in 2018](#)

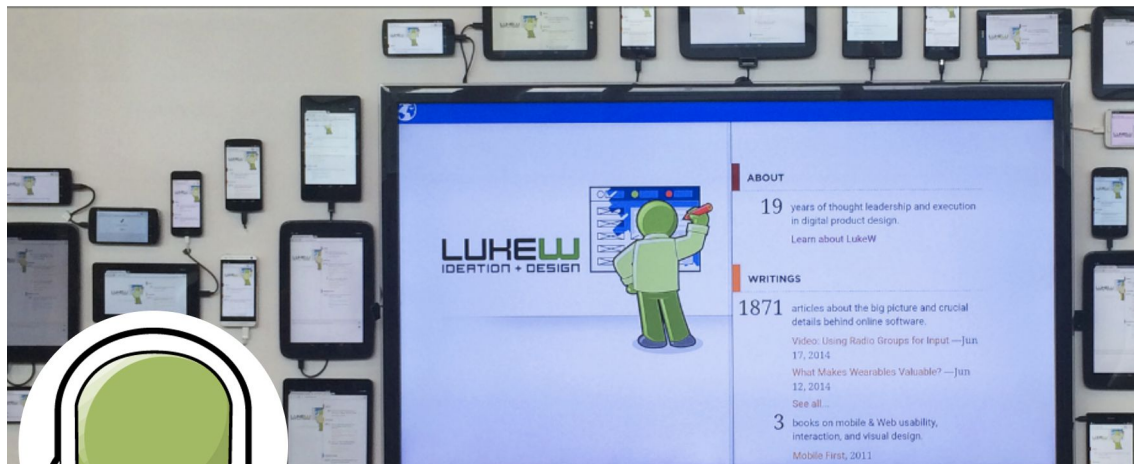
DEMO

1.6 минуты

загрузка страницы

~14 Mb

загруженных ресурсов





Tweets	Following	Followers	Likes	Lists	Moments
17.5K	102	212K	4,810	5	1

Luke Wroblewski
@lukew

Humanizing technology. Founded: Polar (Google acquired) Bagcheck (Twitter acquired) Wrote: Mobile First, Web Form Design, Site Seeing. Worked: Yahoo, eBay, NCSA

📍 Silicon Valley

🌐 lukew.com

📅 Joined February 2008

Tweets **Tweets & replies** **Media**

📌 Pinned Tweet

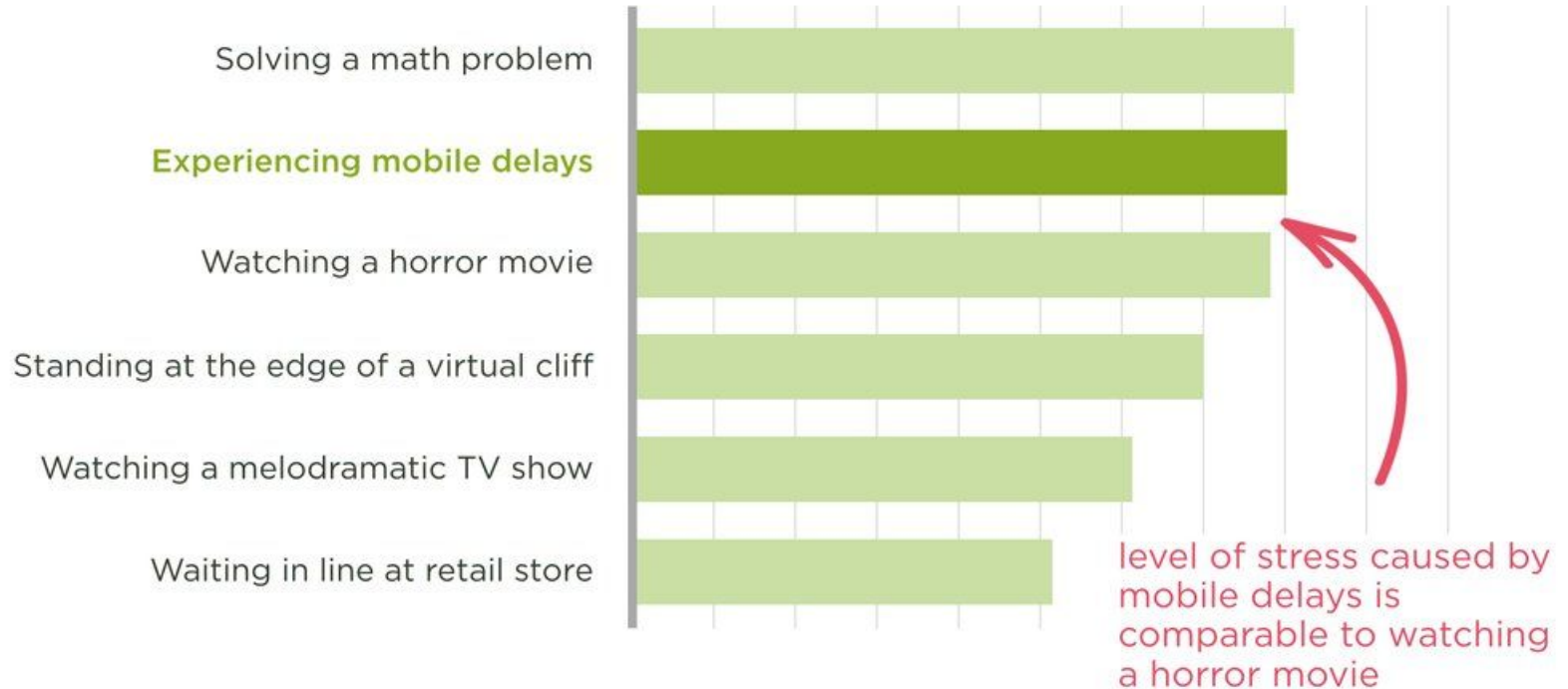
 **Luke Wroblewski** @lukew · Jan 19

I'm often asked "where do you get all your screenshots of old operating systems & applications?"

I maintain an archive.



Cognitive Load with Stressful Situations



Почему ~~#perfmatters~~
perf is requirement?

<https://developers.google.com/web/updates/2018/07/search-ads-speed>

Speed is now a landing page factor for Google Search and Ads



By **Addy Osmani**

Eng Manager, Web Developer Relations



By **Ilya Grigorik**

Ilya is a Developer Advocate and Web Perf Guru

Speed is now a landing page factor for Google Search and Ads

When **real** users have a slow experience on mobile, they're much less likely to find what they are looking for or purchase from you in the future. For many sites this equates to a huge missed opportunity, especially when more than half of visits are abandoned if a mobile page takes over **3 seconds to load**.

Last week, Google Search and Ads teams announced two new speed initiatives to help improve user-experience on the web. Both efforts are leveraging real-world user experience data (see [Chrome User Experience Report](#)) to prioritize and highlight pages that deliver optimized and fast user experiences.

Speed is now used as a ranking factor for mobile searches

Users want to find answers to their questions quickly and [data](#) shows that people really care about how quickly their pages load. The Search team announced speed would be a [ranking signal](#) for desktop searches in 2010 and as of this month (July 2018), page [speed will be a ranking factor for mobile searches](#) too.

#perfmatters!!!

Как фиксировать проблемы
быстродействия?

Список статей

1. ...

2. ...

3. ...

...

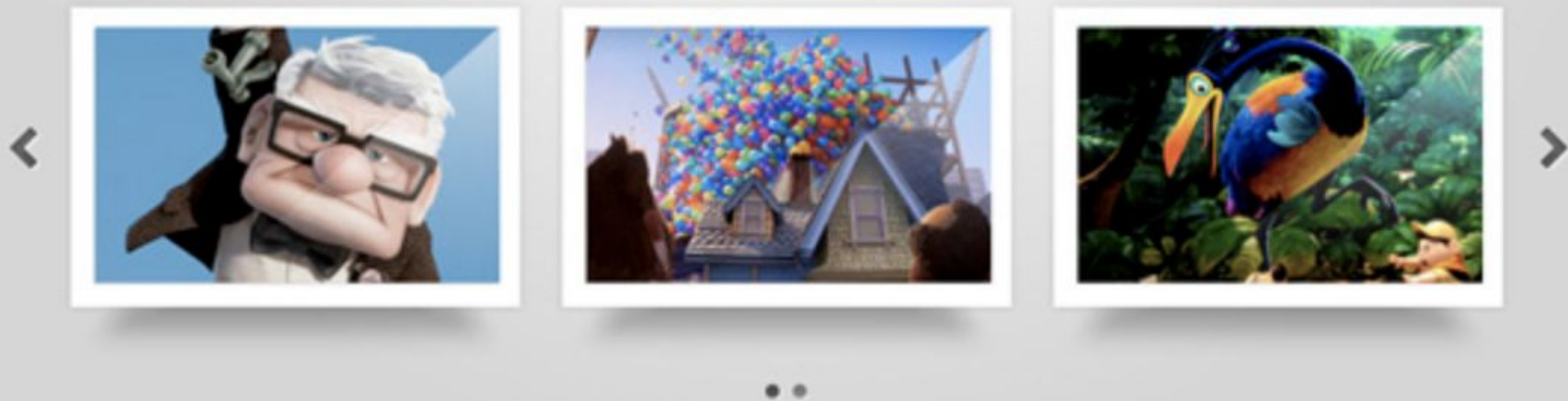
?

Давайте вернемся в
точку отправления



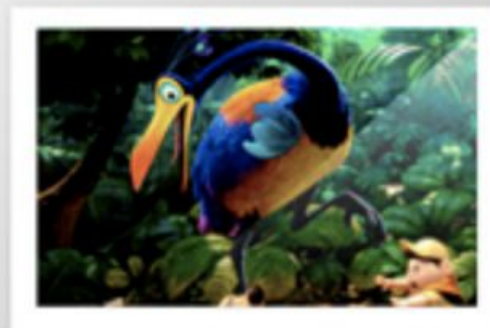
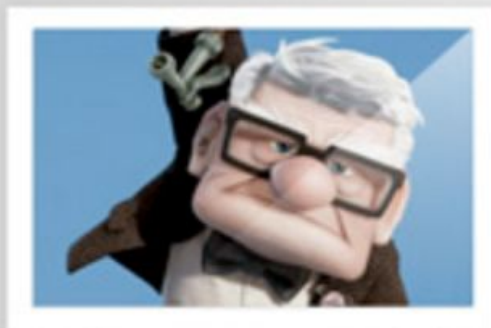
Зачем???

Стильный слайдер на jQuery в стиле карусели с прокруткой по 3 изображения



Vanilla

Стильный слайдер на ~~jQuery~~ в стиле карусели с
прокруткой по 3 изображения



React

Стильный слайдер на ~~jQuery~~ в стиле карусели с
прокруткой по 3 изображения



Vue

Стильный слайдер на ~~jQuery~~ в стиле карусели с
прокруткой по 3 изображения



Давайте добавим к
нему кое-что
кастомное

RESIZE!!!

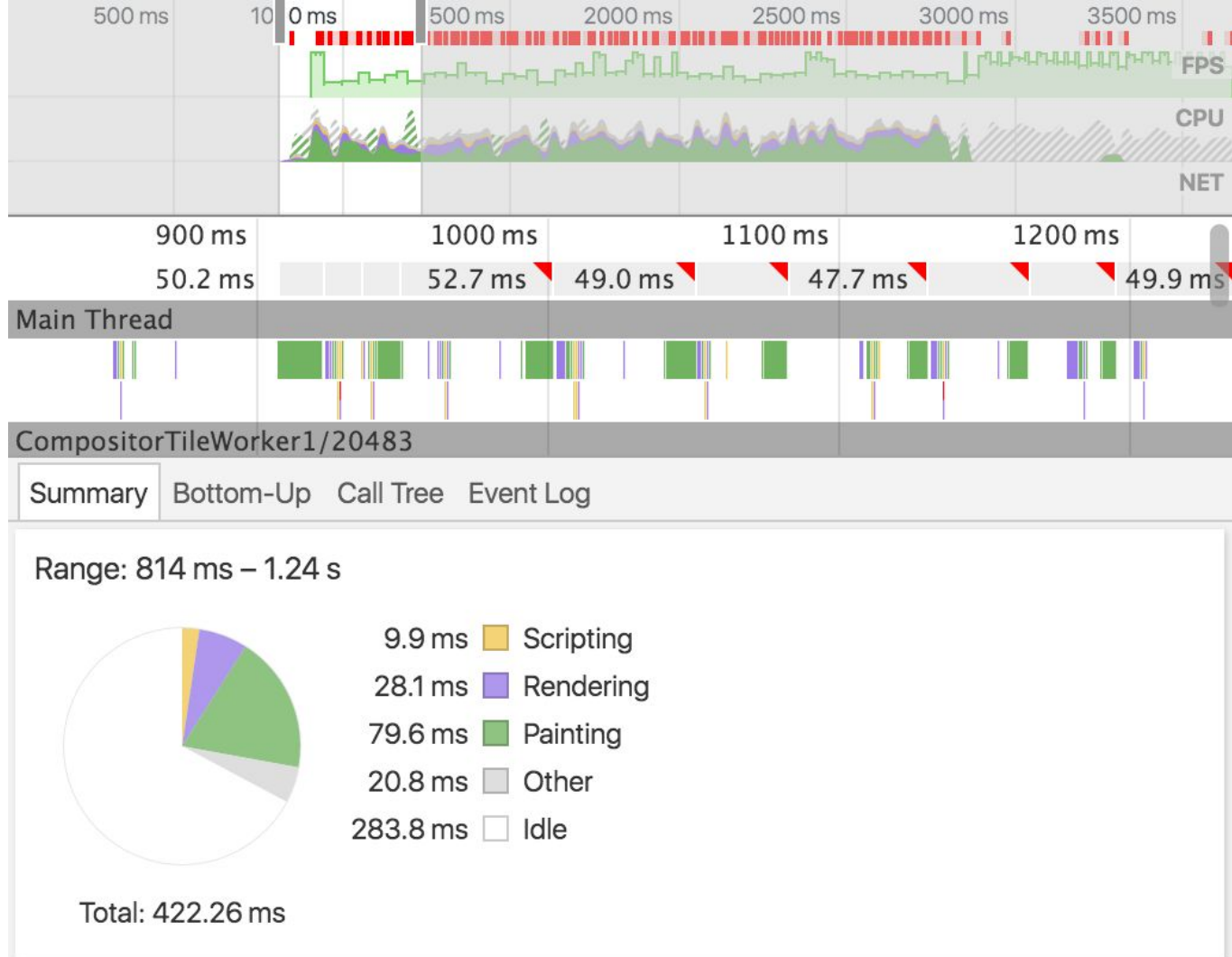
Стильный слайдер на jQuery в стиле карусели с прокруткой по 3 изображения





Это была всего лишь
карусель...

Вернее,
от 1 до n
каруселей на одной
странице

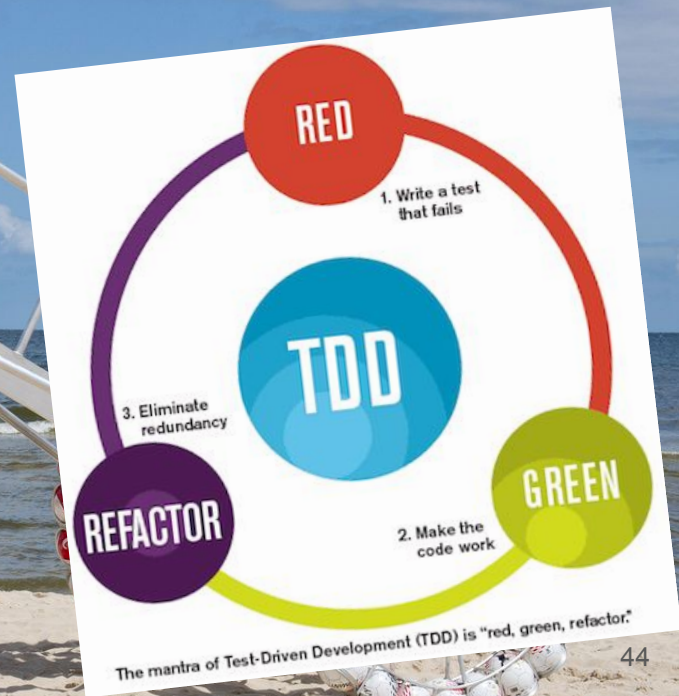


КТО ВИНОВАТ?



Как это исправить?

История



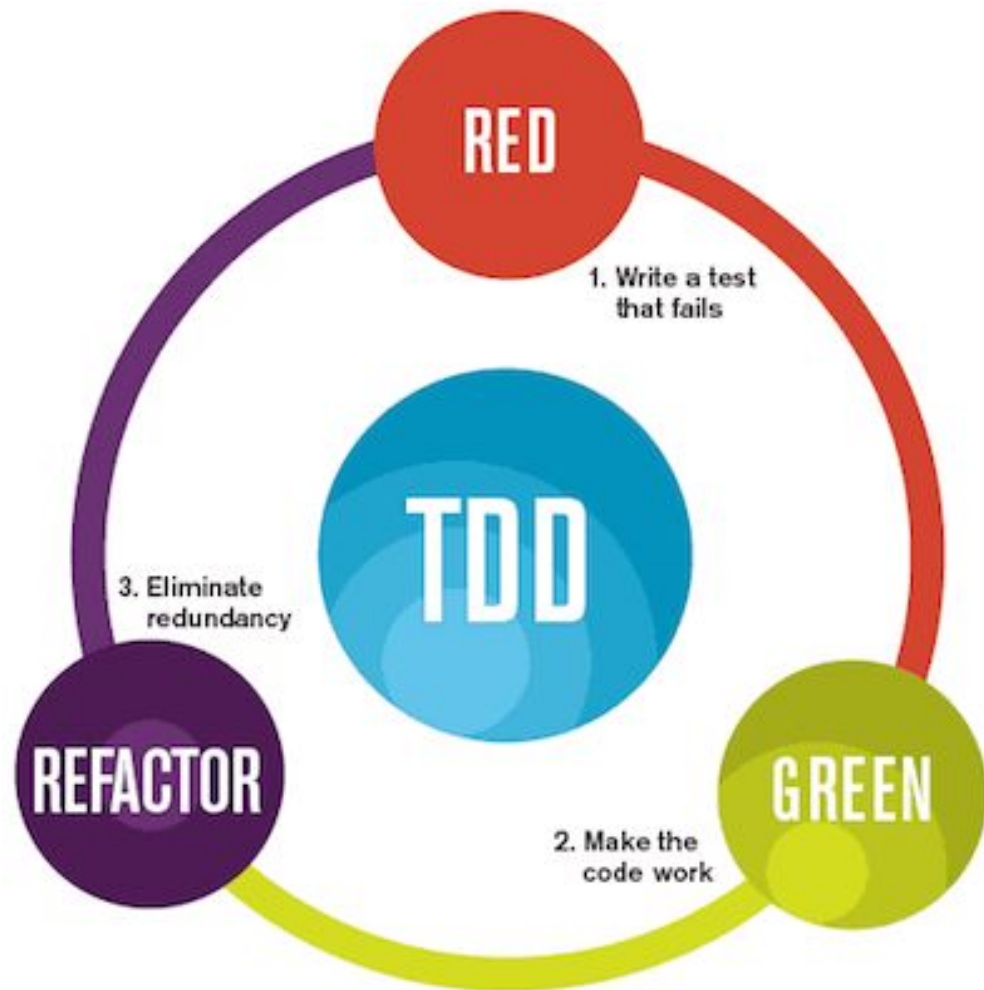


A group of cyclists in red and black BMC jerseys are racing on a road. They are in a tight pack, leaning forward in an aerodynamic position. The background is a blurred road and greenery, suggesting a race in progress.

Performance

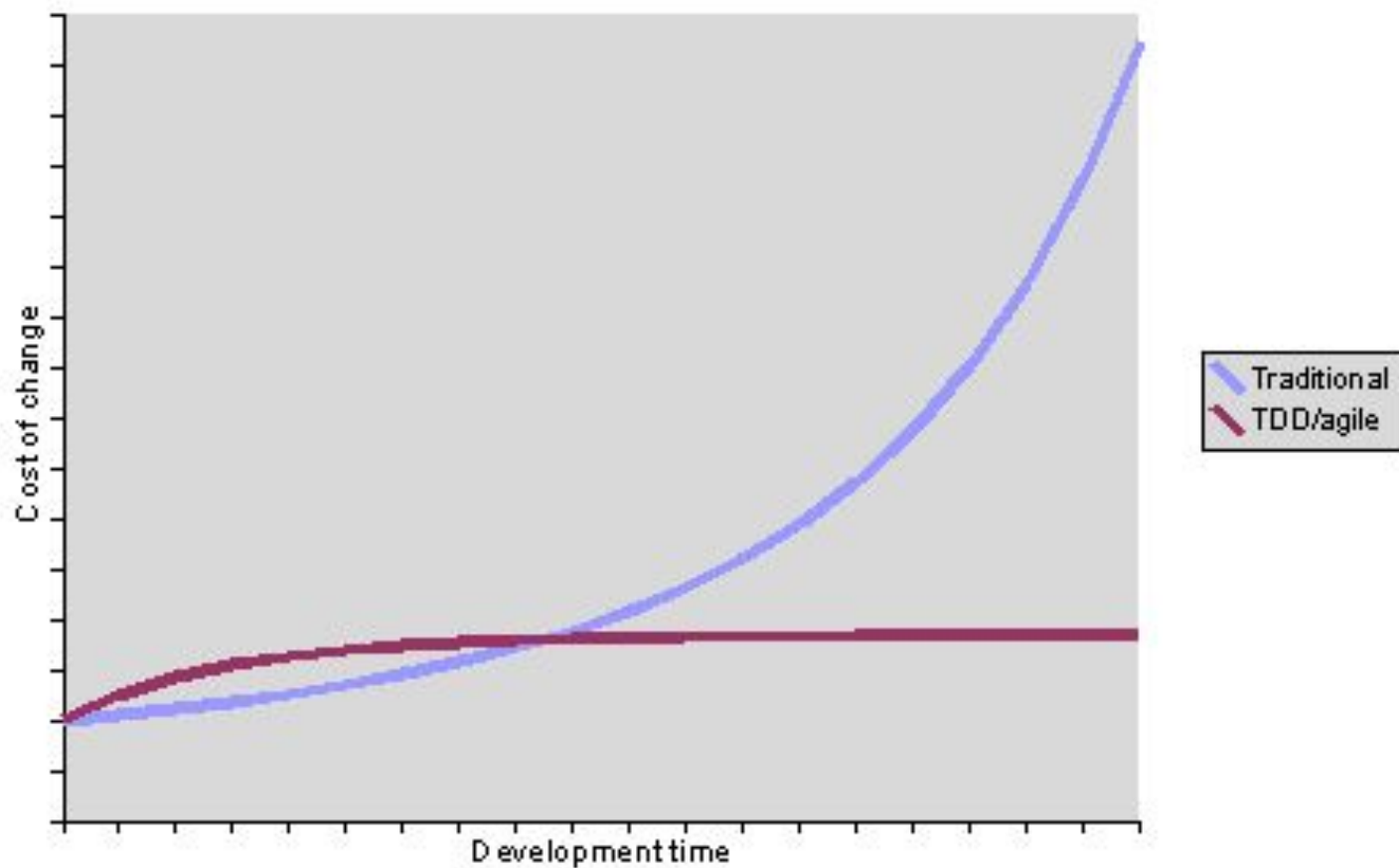
Driven

Development



The mantra of Test-Driven Development (TDD) is "red, green, refactor."

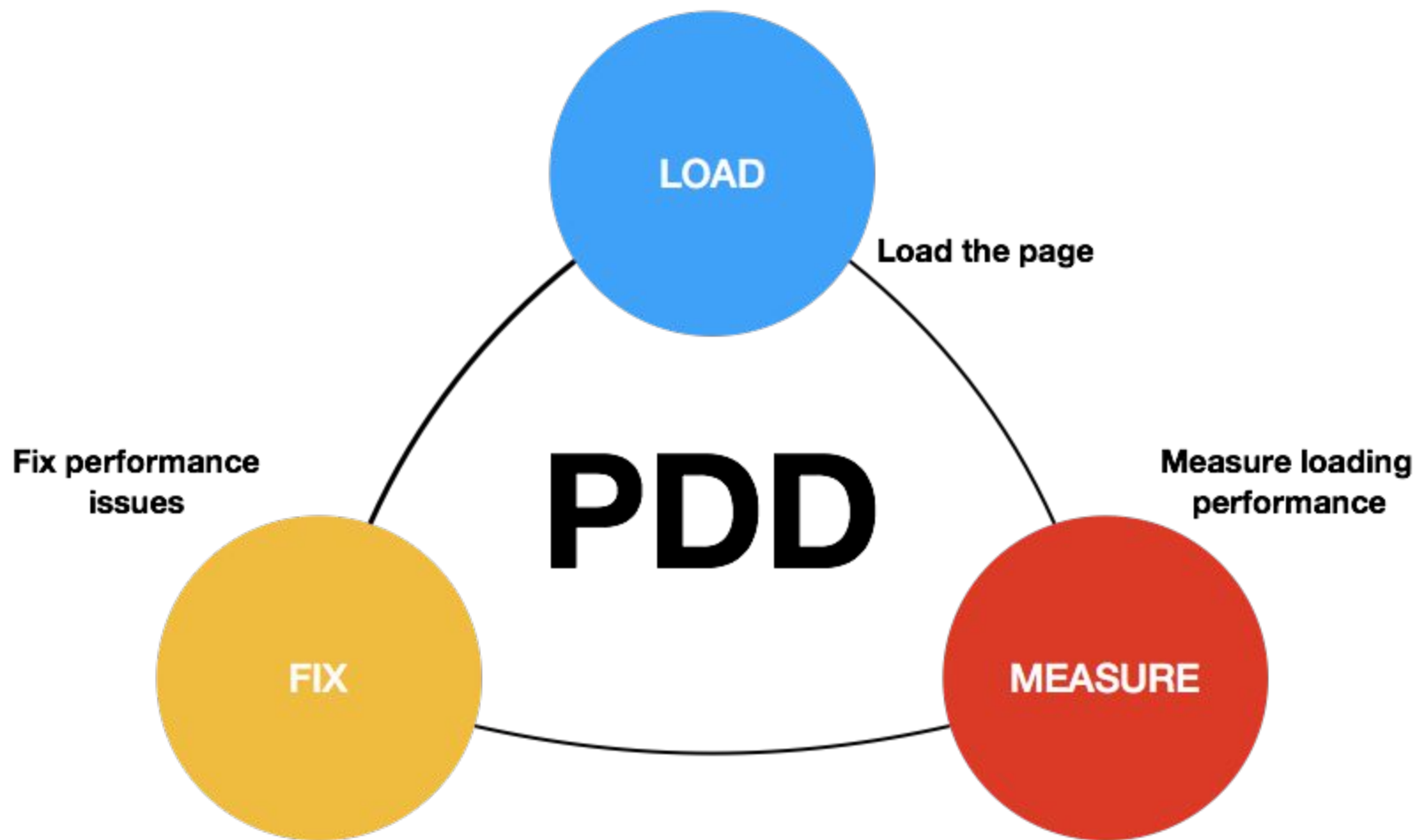
Cost of change vs. development time



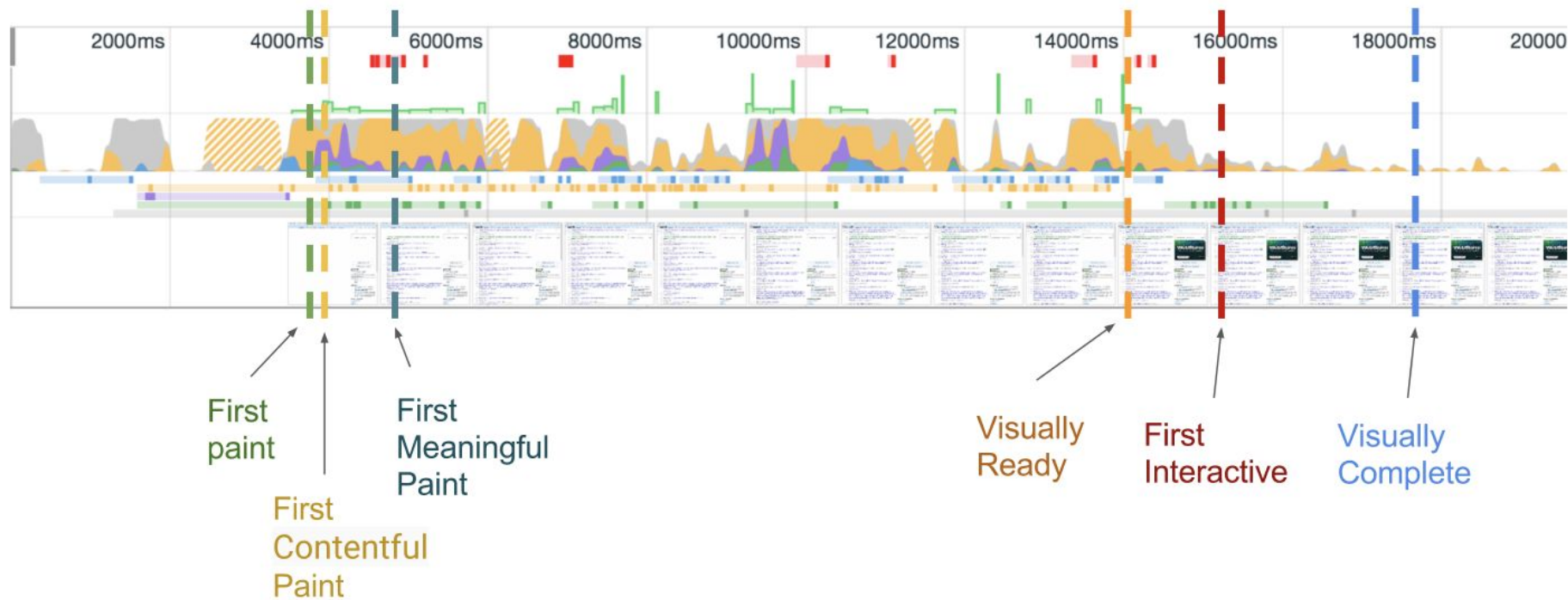


Cost of change

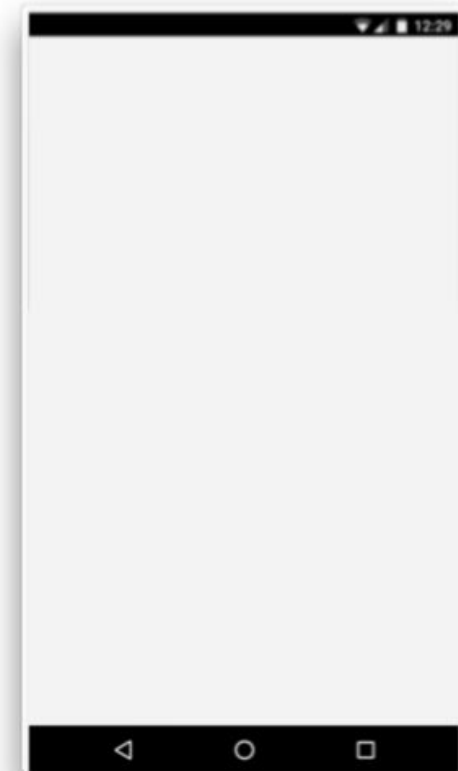




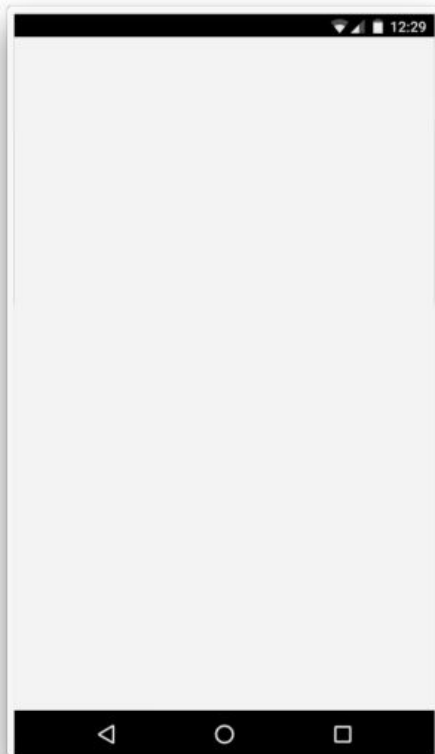
Как измерять?



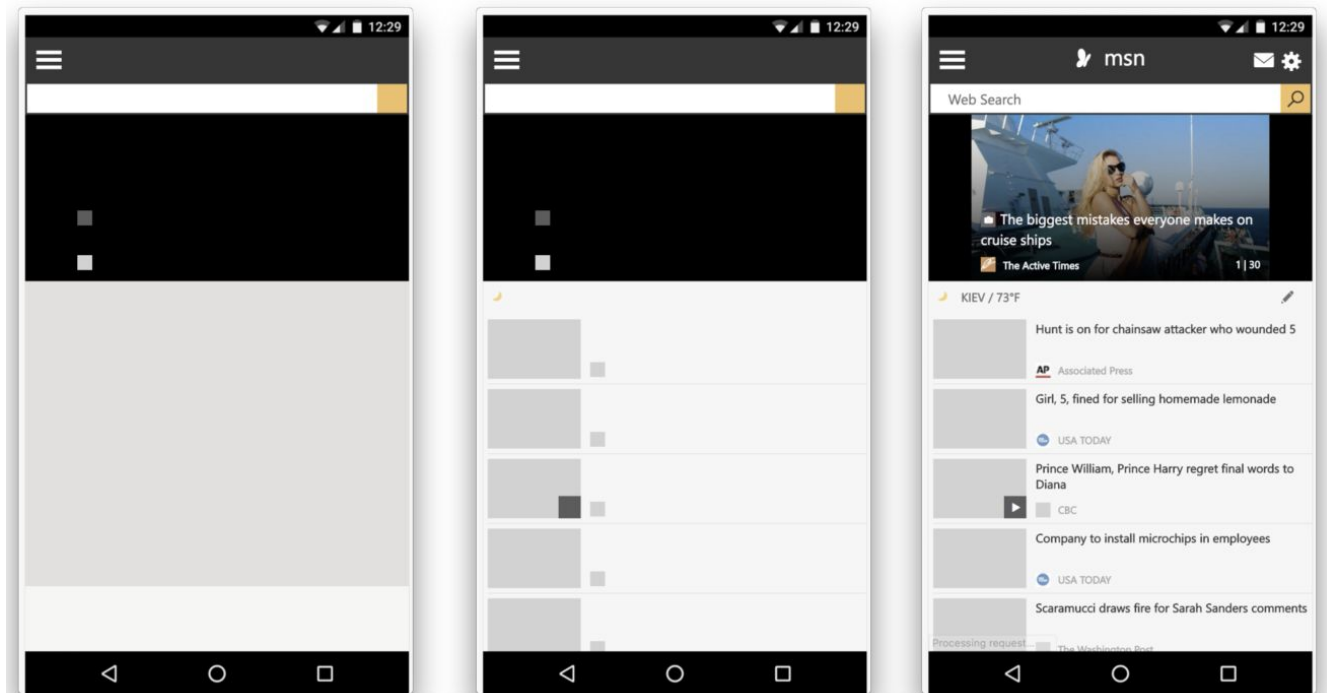
First Paint



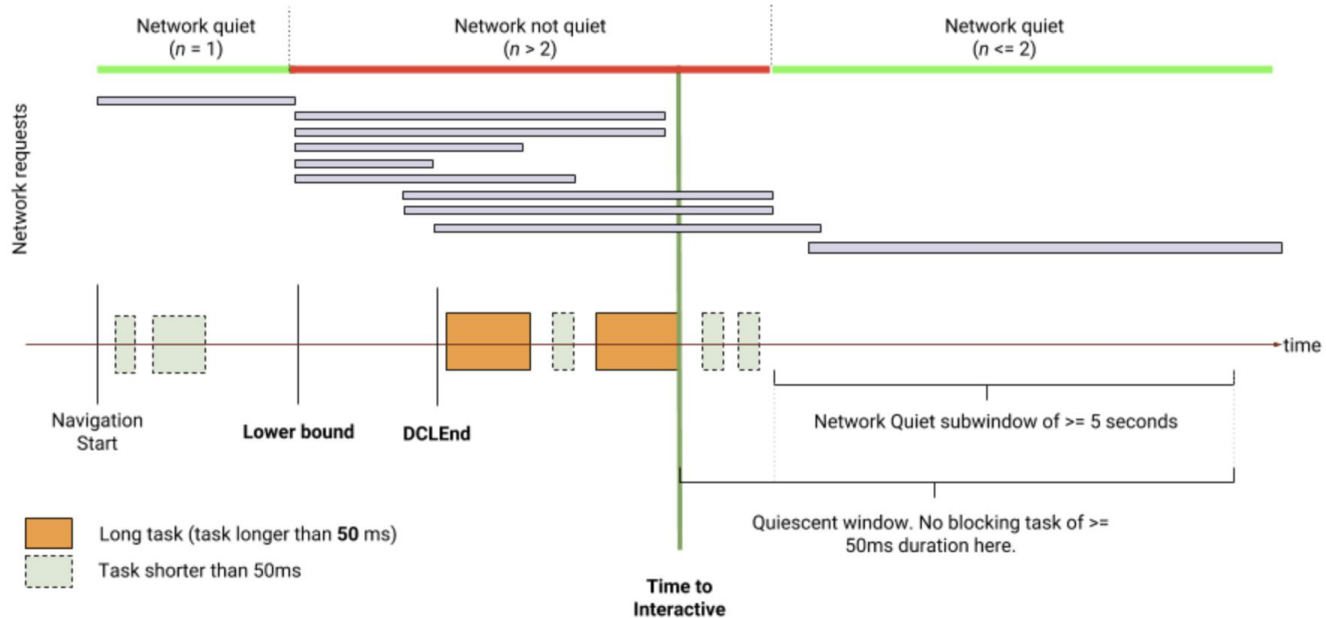
First Contentful Paint



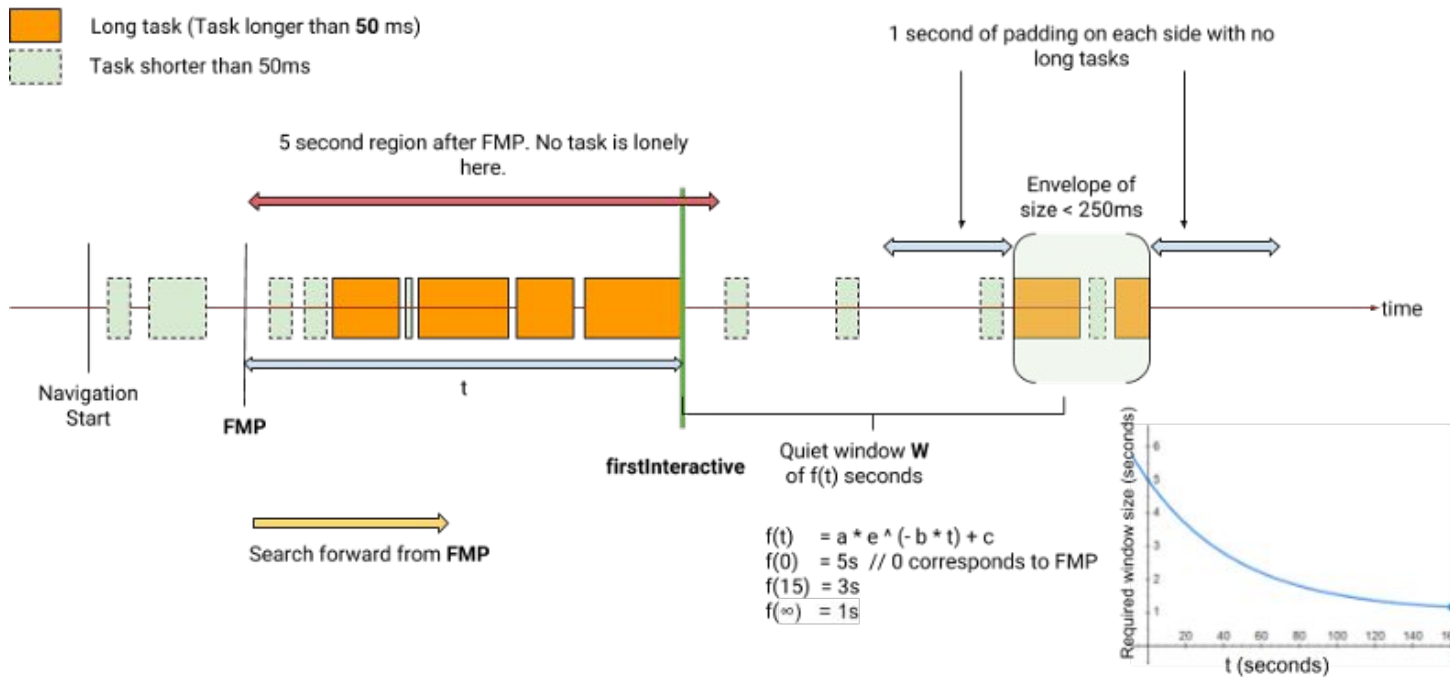
First Meaningful Paint

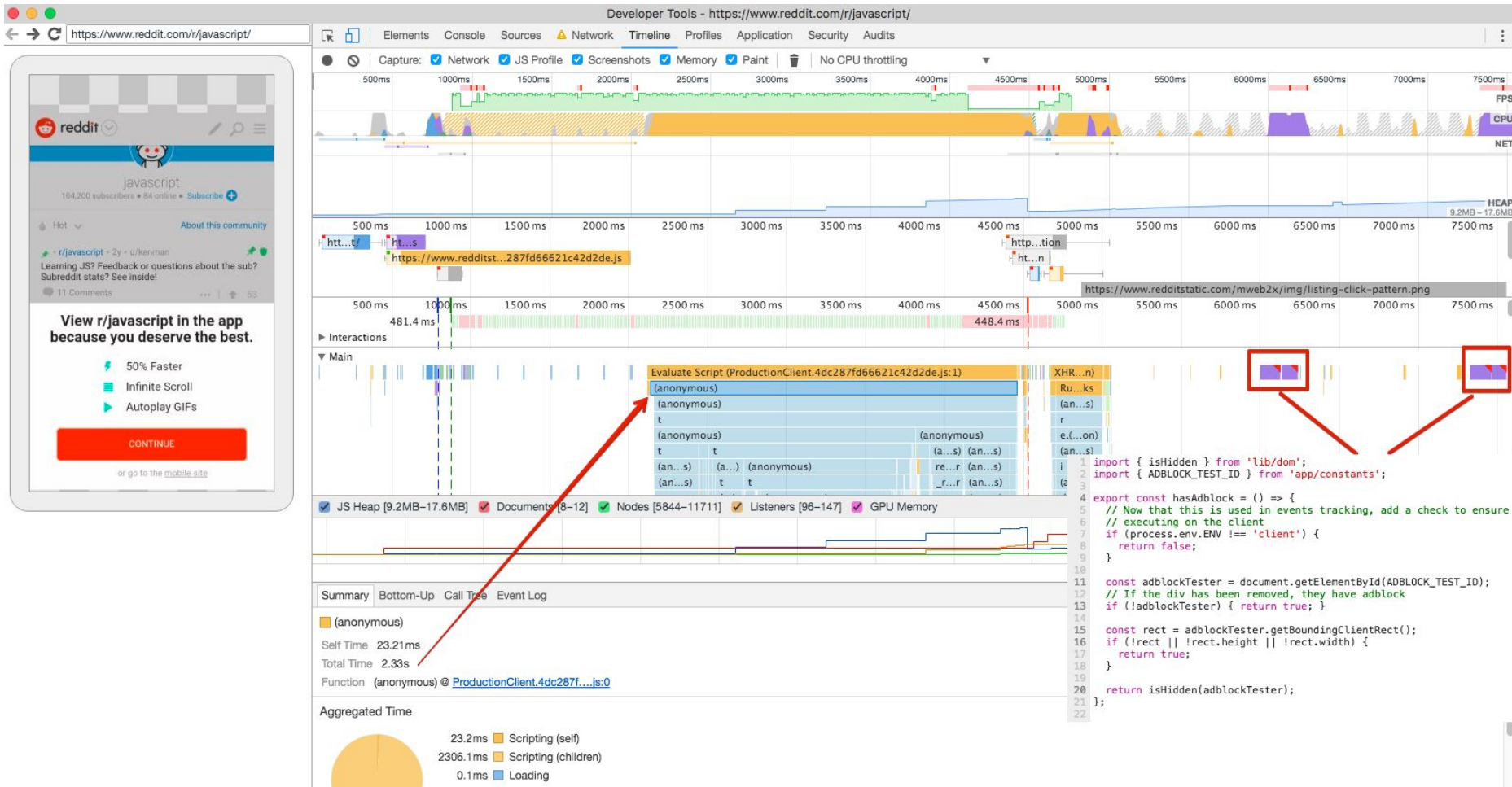


Time to Interactive



First CPU Idle





Speed Index



[WebPageTest Documentation: Speed Index](#)

Ключевые метрики

1. First Contentful Paint
2. First Meaningful Paint
3. Time to Interactive
4. Time to First CPU idle
5. Speed Index

Метрики загрузки страницы



Библиотеки:

github.com/ai/size-limit



my-js-lib

➤ npm run size

> size-limit

Package has exceeded the size limit

Package size: **8.46 KB**

Size limit: **8 KB**

With all dependencies, minified and gzipped

my-js-lib

➤



github.com/ebidel/lighthouse-ci

Add more commits by pushing to the `ebidel-patch-1` branch on [ebidel/chromium-dashboard](#).



All checks have passed

2 successful checks

[Hide all checks](#)



Lighthouse — Passed. New Lighthouse score would be 100/100.

[Details](#)



continuous-integration/travis-ci/pr — The Travis CI build passed

[Details](#)



This branch has no conflicts with the base branch

Merging can be performed automatically.

Merge pull request



You can also [open this in GitHub Desktop](#) or view [command line instructions](#).



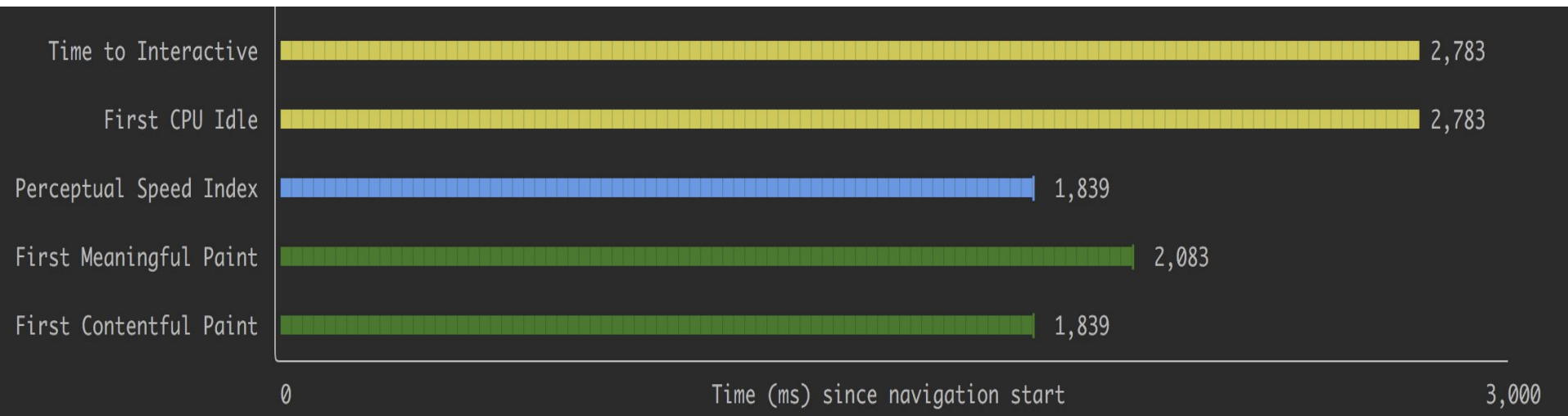
Write

Preview

AA B i



github.com/paulirish/pwmetrics



[23:51:45] Starting 'pwmetrics'...

Launching Chrome

- ✗ Error: First Meaningful Paint. Expected 2000 ms, but found 5270.1195 ms.
- ✗ Error: First CPU Idle. Expected 2000 ms, but found 5847.50455 ms.
- ⚠ Warning: Time to Interactive. Expected 5000 ms, but found 5847.50455 ms.
- ✓ Success: Run 1 of 3 finished successfully.

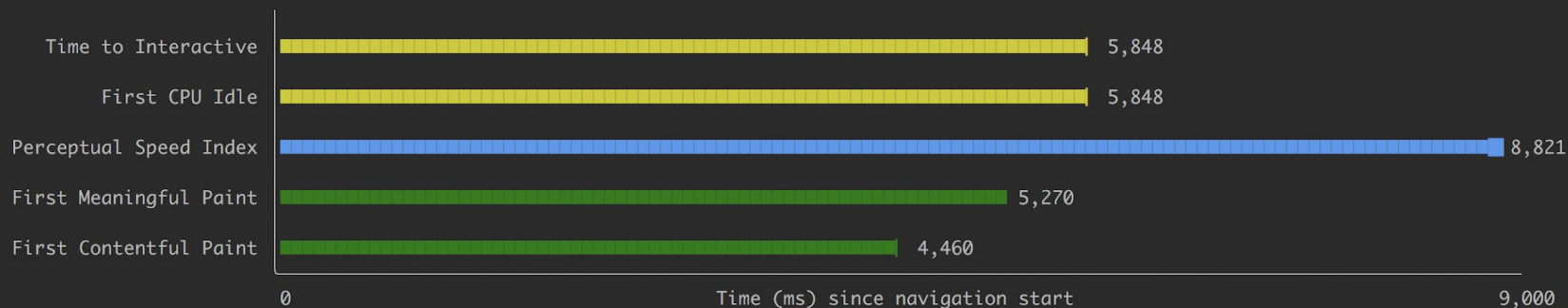
Launching Chrome

- ✗ Error: First Meaningful Paint. Expected 2000 ms, but found 6301.283849999999 ms.
- ✗ Error: First CPU Idle. Expected 2000 ms, but found 6804.445899999999 ms.
- ⚠ Warning: Time to Interactive. Expected 5000 ms, but found 6804.445899999999 ms.
- ✓ Success: Run 2 of 3 finished successfully.

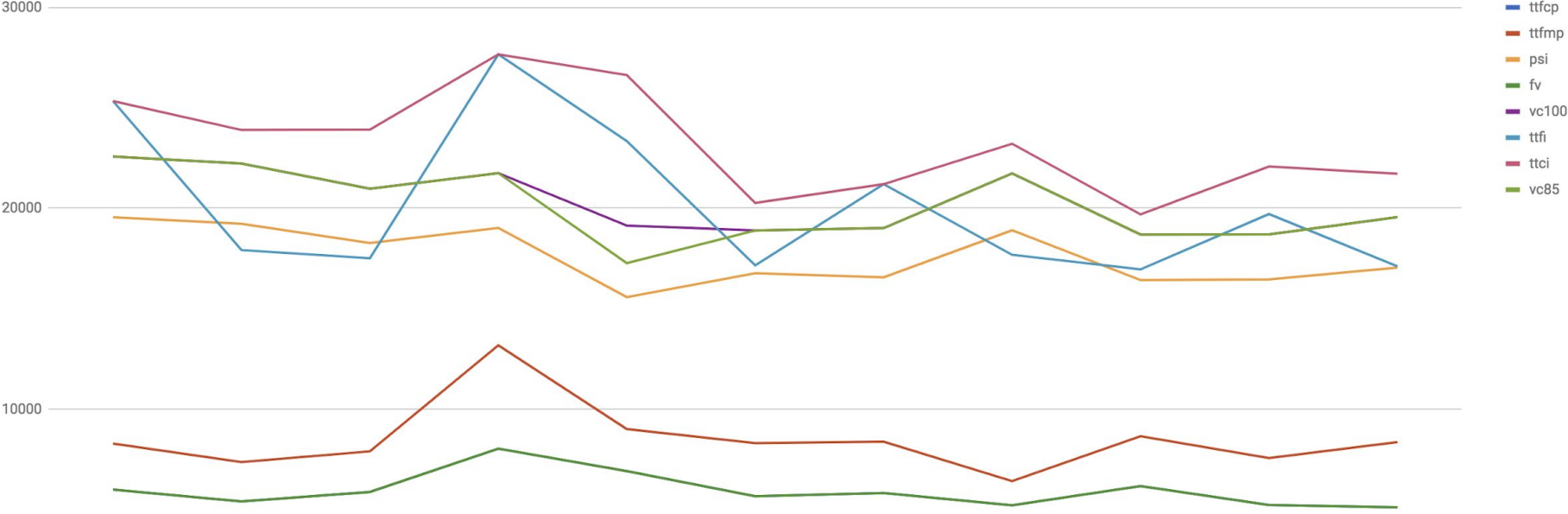
Launching Chrome

- ✗ Error: First Meaningful Paint. Expected 2000 ms, but found 4726.66545 ms.
- ✗ Error: First CPU Idle. Expected 2000 ms, but found 5329.40755 ms.
- ⚠ Warning: Time to Interactive. Expected 5000 ms, but found 5329.40755 ms.
- ✓ Success: Run 3 of 3 finished successfully.

☆ Median run ☆



tffcp, ttfmp, psi, fv, vc...



Платные платформы:



SpeedCurve

Monitor the front-end performance and build of your website. Compare yourself to others and beat the competition. Start...

speedcurve.com





Calibre - Get the web performance insights you need to improve customer experience

Calibre's powerful performance monitoring gives the page speed insights you need to improve customer experience. Free...

calibreapp.com



-  Sydney, Australia
-  São Paulo, Brazil
-  Central Canada
-  Frankfurt, Germany
-  London, United Kingdom
-  Ireland
-  Mumbai, India
-  Tokyo, Japan
-  Seoul, Korea
-  Singapore
-  North Virginia, USA
-  Ohio, USA
-  Northern California, USA
-  Oregon, USA



Lufthansa



Pulse



Snapshots



Alerts



Settings



Lufthansa

Switch pages:

Home



Last snapshot Today at 8:02 AM

[View snapshot #173](#)

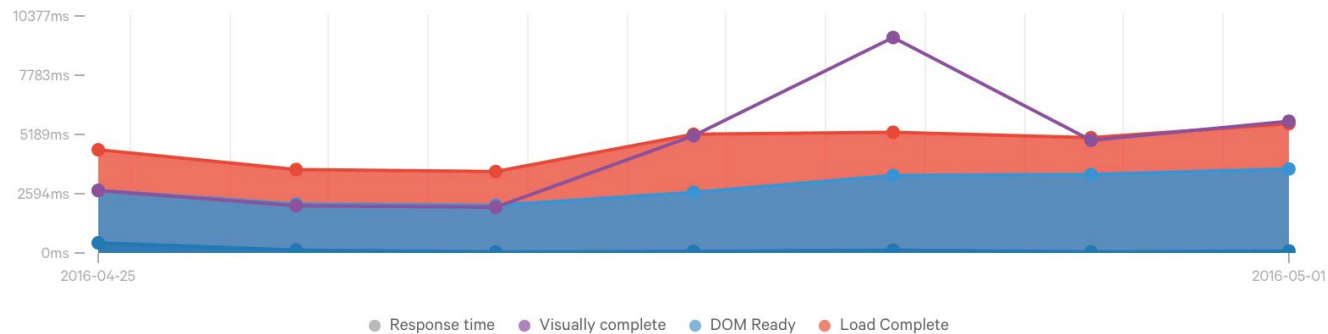
2,666 SPEED INDEX

5.77_{sec} VISUALLY COMPLETE

88_{ms} SERVER WAIT

Render and delivery

Past 7 days



Ben Schwarz





Treo - Lighthouse as a Service

Treo is a cloud infrastructure for Lighthouse. It provides end-to-end testing, geographical regions, scalable API, and...

treo.sh

ALERTS

TEST SUITES

706 M CREDITS

14

Treo Prod / Test run #91

#91

passed

125, 04:09 PM with message "KSES display render error" to treosA/treosA@399e
(run with expected results): Test run #79

Click "Approve" run as a snapshot

	PERFORMANCE	ACCESSIBILITY	PROGRESSIVE WEB APP
age es:01	100%	97%	80%
ge + EU es:01/eu:01	100%	100%	80%
st Suite es:01/st:01/keysul/kov/suite/2	70%	94%	80%
st Run es:01/st:01/keysul/kov/suite/2/36	71%	94%	80%
ge Run Results es:01/st:01/keysul/kov/suite/2/36/5/36	82%	94%	80%
dal: Team Create es:01/st:01/keysul/kov/teams/create	66%	97%	80%

Pages

You have 7 pages

Past month ▾

↑ PAGE

FMP ⓘ

CI ⓘ

PERF ⓘ



Apple
<https://www.apple.com>

5,170 ms

5,170 ms

65/100 ▲ 1



CNN
<https://edition.cnn.com>

6,490 ms

23,130 ms

27/100 ▲ 8



Github
<https://github.com>

2,440 ms

13,580 ms

73/100 ▲ 6



Gov UK
<https://www.gov.uk>

1,760 ms

3,020 ms

94/100



Smashing Magazine
<https://www.smashingmagazine.com>

1,090 ms

7,330 ms

77/100 ▼ 2



Techcrunch
<https://techcrunch.com>

4,630 ms

17,990 ms

32/100 ▲ 6



А что если пойти еще
дальше?

Разрабатывать в тех
же условиях что есть у
пользователей?

Sloth - an extension to make you suffer, browsing the web.

github.com/denar90/sloth



Demo

Список статей по оптимизации быстродействия

1. [The Cost Of JavaScript In 2018](#)
2. [Progressive Web App Performance Case Study](#)
3. [Practical #perf case study step by step, PR by PR](#)
4. [Loading performance on Web Fundamentals](#)
5. [Rendering performance on Web Fundamentals](#)
6. [Vue.js docs performance audit](#)
7. ...
8. ...

...

Measure
with Lighthouse
and PWMetrics



Load

and develop
with Sloth

Fix

with latest
performance
techniques

Выводы

Разрабатываем
для
пользователей

Стараемся
объяснить заказчику
почему #perfmatters

Добавляем на CI
нужные библиотеки
Lighthouse, PWMetrics

Не забываем
тестировать в
реальных условиях

Получаем отличное
приложение!

Спасибо!

github - denar90
medium - denar90
twitter - denar90_