

Flash Sale Engineering

by @EmilStolarsky



Who's this ugly baby?





Flash Sales



Black Friday





Freeview HD TV channels

Freeview HD

Now featuring 40
channels & live
sports

40" Full HD LED TV
Enjoy glorious Full HD (1080p) quality images
with family & friends



Kanye West

Super Bowl Ads

Have you met the girl
named Goldie Blox?
She likes to think outside the box.



A close-up photograph of a person's lips. The lips are coated with a vibrant, glossy red lipstick. A white, textured lip kit is being applied to the lower lip, creating a layered effect. The background is dark, making the lips stand out. The text "#KylieLipKit" is overlaid in the center in a white, bold, sans-serif font.

#KylieLipKit










Write Heavy Traffic



Xaiyanh
@X81YAN



 Follow

Omg I was sooooo close of getting a Posie K
WHYYYY YOU CRASHHHH     
[#KYLIECOSMETICS](#) [#KylieLipKit](#)

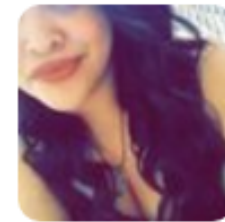


Xaiyanh
@X81YAN



 Follow

Omg I was sooooo close of getting a Posie K
WHYYYY YOU CR
[#KYLIECOSMETI](#)



yvette gonzales
@XoEvet



 Follow

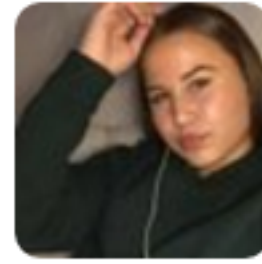
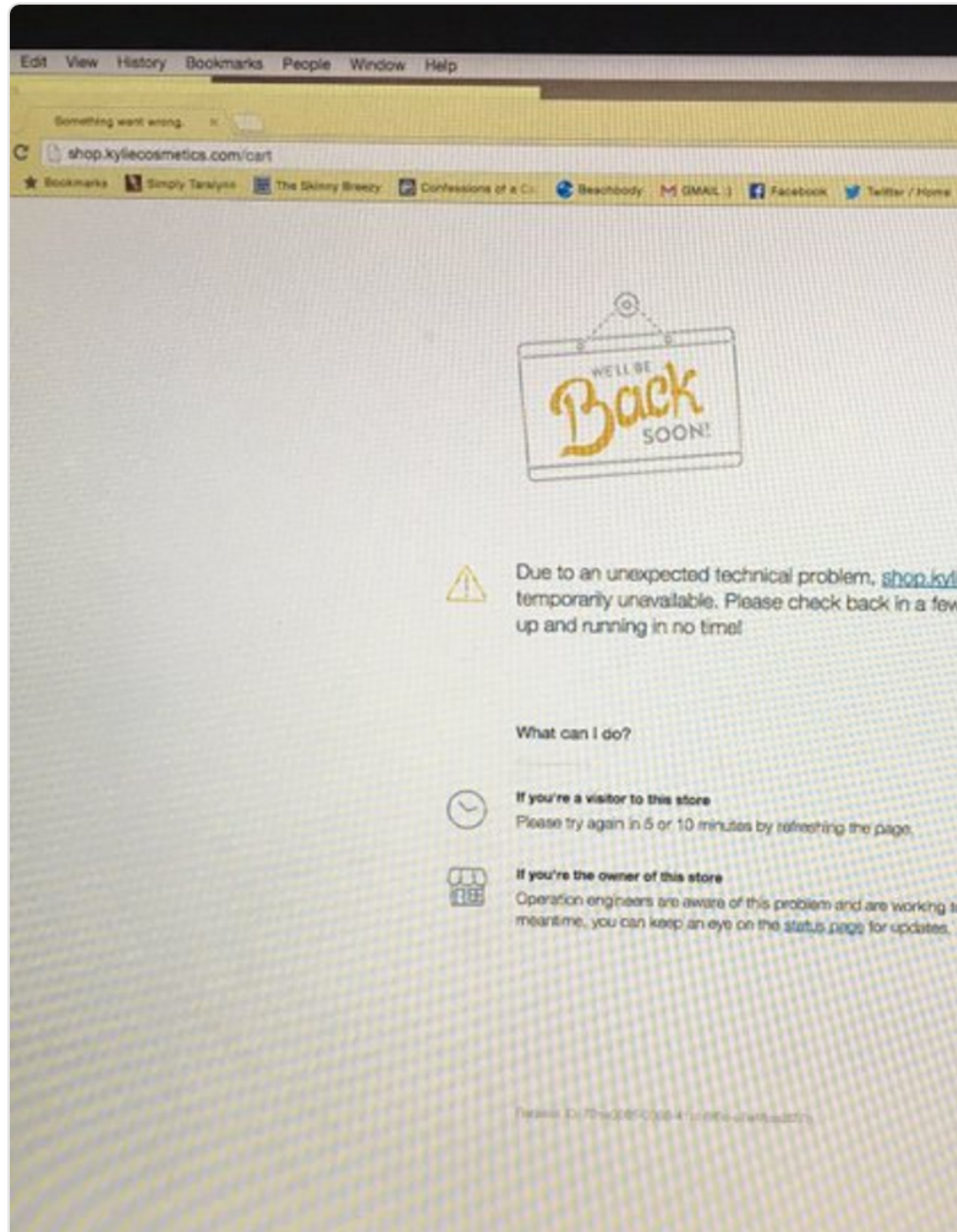
Why meeeee !
I'm just so sad right now. I'm gonna cry.
[@KylieJenner](#) its not your fault but this REALLY
FUCKEN SUCKS !
[#KYLIECOSMETICS](#)

7:20 PM - 28 Mar 2016



Meg Ahrenberg
@itsmegaberg

The epitome of [@kyliecosmetics](#)
[#KYLIECOSMETICS](#)

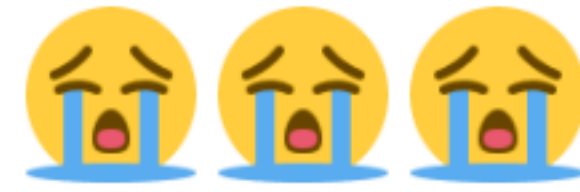


acCheyenne_
@CHEYY_TJJE



[Follow](#)

And now everything is sold out what the F
[@KylieJenner](#) [#KylieLipKit](#) [#KYLIECOSMETICS](#)

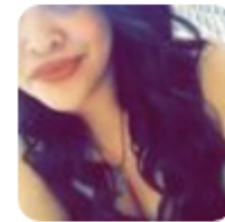


7:19 PM - 28 Mar 2016



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è of getting a Posie K



yvette gonzales
@XoEvet



[Follow](#)

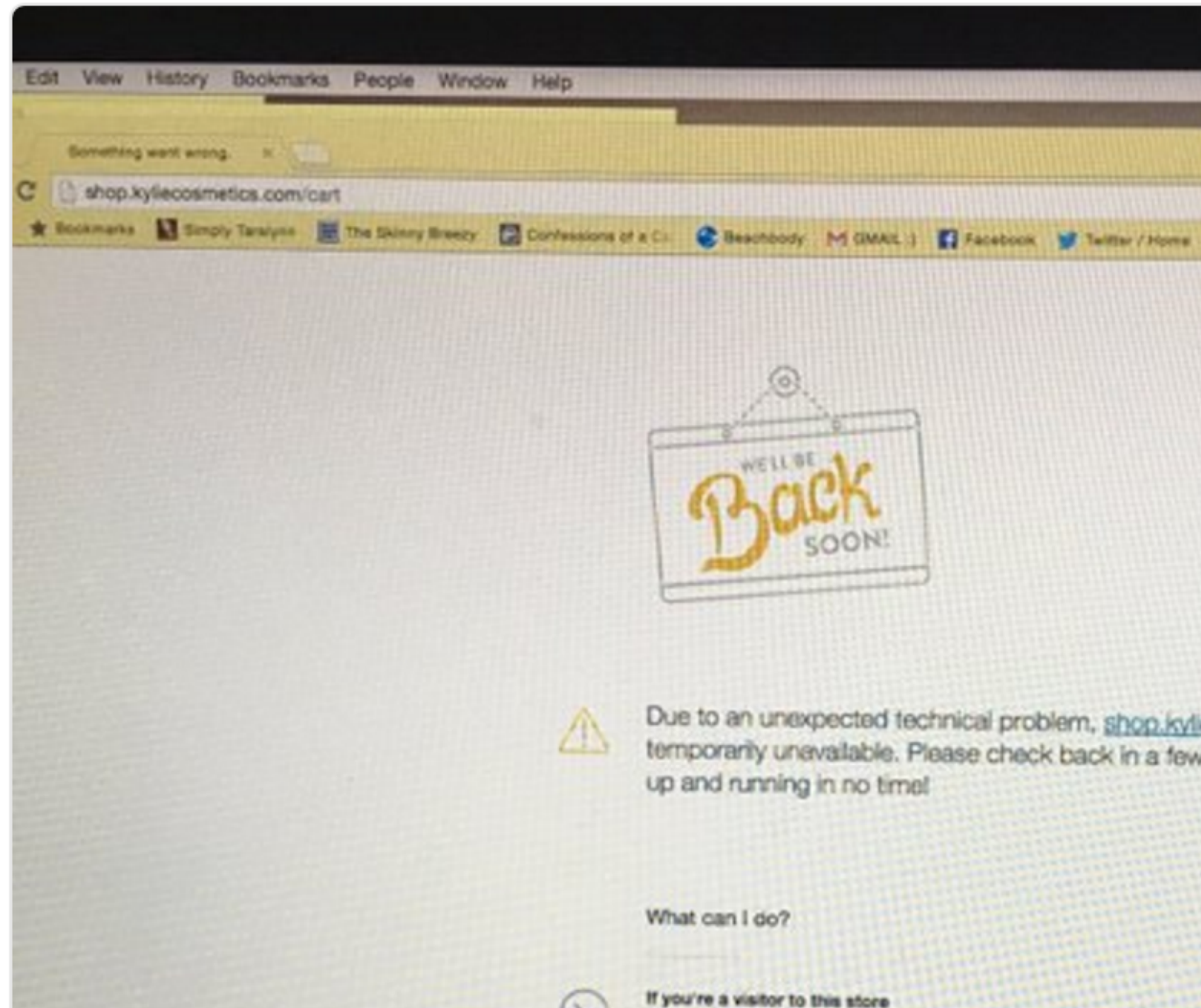
Why meeeee !
I'm just so sad right now. I'm gonna cry.
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FUCKEN SUCKS !
[#KYLIECOSMETICS](#)

7:20 PM - 28 Mar 2016



Meg Ahrenberg
@itsmegaberg

The epitome of [@kyliecosmetics](#)
[#KYLIECOSMETICS](#)



Due to an unexpected technical problem, [shop.kyliecosmetics.com](#) temporarily unavailable. Please check back in a few minutes and we'll be up and running in no time!

What can I do?

If you're a visitor to this store
Please try again in 5 or 10 minutes by refreshing the page.

If you're the owner of this store
Operation engineers are aware of this problem and are working to get it solved. In the meantime, you can keep an eye on the [status page](#) for updates.

Twitter ID: 726008703864110464



acCheyenne_
@CHEYY_TJJE



[Follow](#)

And now everything is sold out what the F
[@KylieJenner](#) [#KylieInKit](#) [#KYLIECOSMETICS](#)



KG
@_KarlaGomes



[Follow](#)

I find it ridiculous how hard it is to get
[#Kyliecosmetics](#)

LIKE
1



7:16 PM - 28 Mar 2016

I'm just so sad right now. I'm gonna cry.
[@KylieJenner](#) its not your fault but this REALLY
FUCKEN SUCKS !
[#KYLIECOSMETICS](#)

7:20 PM - 28 Mar 2016

☆ Selin ☆
@selinstyles94

⚙️ Follow

DAMN 😭😭😭 #KylieLipKit
#KYLIECOSMETICS



⚠️ Due to an unexpected technical problem, shop.kyliecosmetics.com is temporarily unavailable. Please check back in a few minutes – we'll be up and online in no time!

What can I do?

🕒 If you're a visitor to this store
Please try again in 5 or 10 minutes by refreshing the page.

Jennifer Lynn Klobus
@jenniferklobus

⚙️ Follow

@kyliejenner @kyliecosmetics got as far as the payment processing but then the page timed out how do I know it went through?

#KYLIECOSMETICS

7:16 PM - 28 Mar 2016

leynne_
YY_TJJE

⚙️ Follow

if everything is sold out what the F
winner #KylieLipKit #KYLIECOSMETICS

♥️ fancykimme ♥️
@dear_kimme

⚙️ Follow

⚙️ Follow

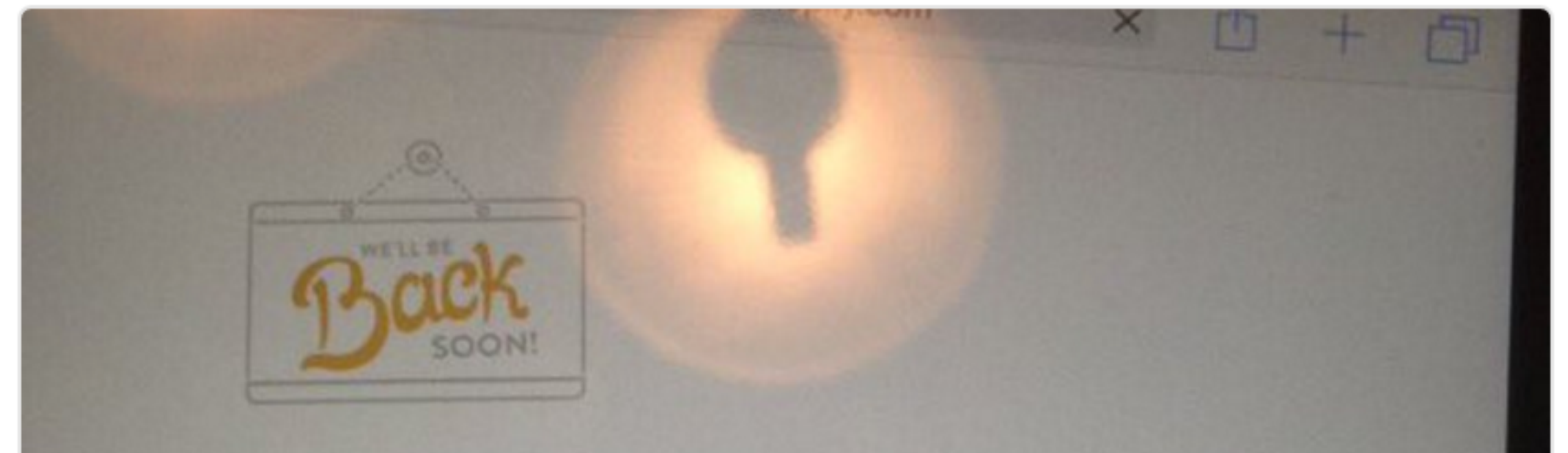
I'm hot now I got this after it said processing order in 2 mins #KylieLipKit #KYLIECOSMETICS
@KylieJenner fix it



Sammie
@SammieAsfaw

⚙️ Follow

WHHHHHYYY. It's happened 6 times now!!
#KylieLipKit #KYLIECOSMETICS



7:20 PM

 ☆Selin☆
@selinstyles94

⚙️ [Follow](#)

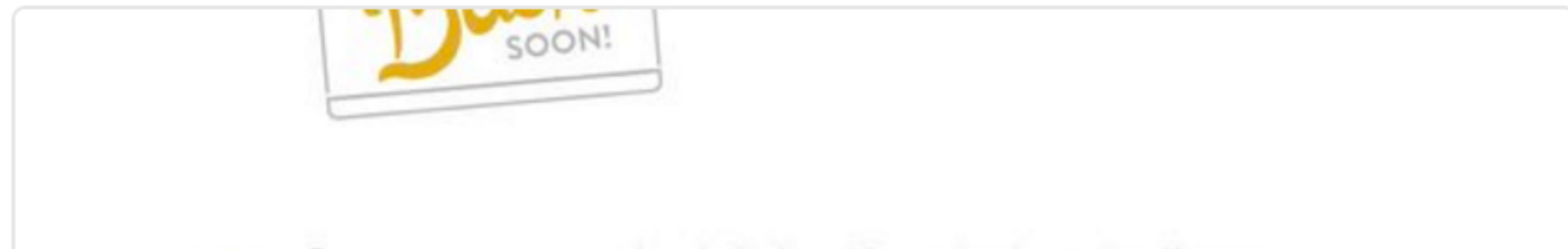
DAMN 🥺🥺🥺 #KylieLipKit
#KYLIECOSMETICS

ieye
YY_T

 ✨beautéXcece ✨ 07/30 ♉
@beauteXcece

⚙️ [Follow](#)

is anyone else getting this error?! 😬😬😬
#KYLIECOSMETICS #KylieLipKit
@kyliecosmetics @KylieJenner



 @achna
@rachnananana

⚙️ [Follow](#)

Bad one today hais #kyliecosmetics

 Rebecca bailey
@_rebeccabailey

⚙️ [Follow](#)

Why 🥺🥺🥺 #KylieLipKit #KYLIECOSMETICS
@kyliecosmetics @KylieJenner



 Angelique ✌️
@Angeliqueeex13

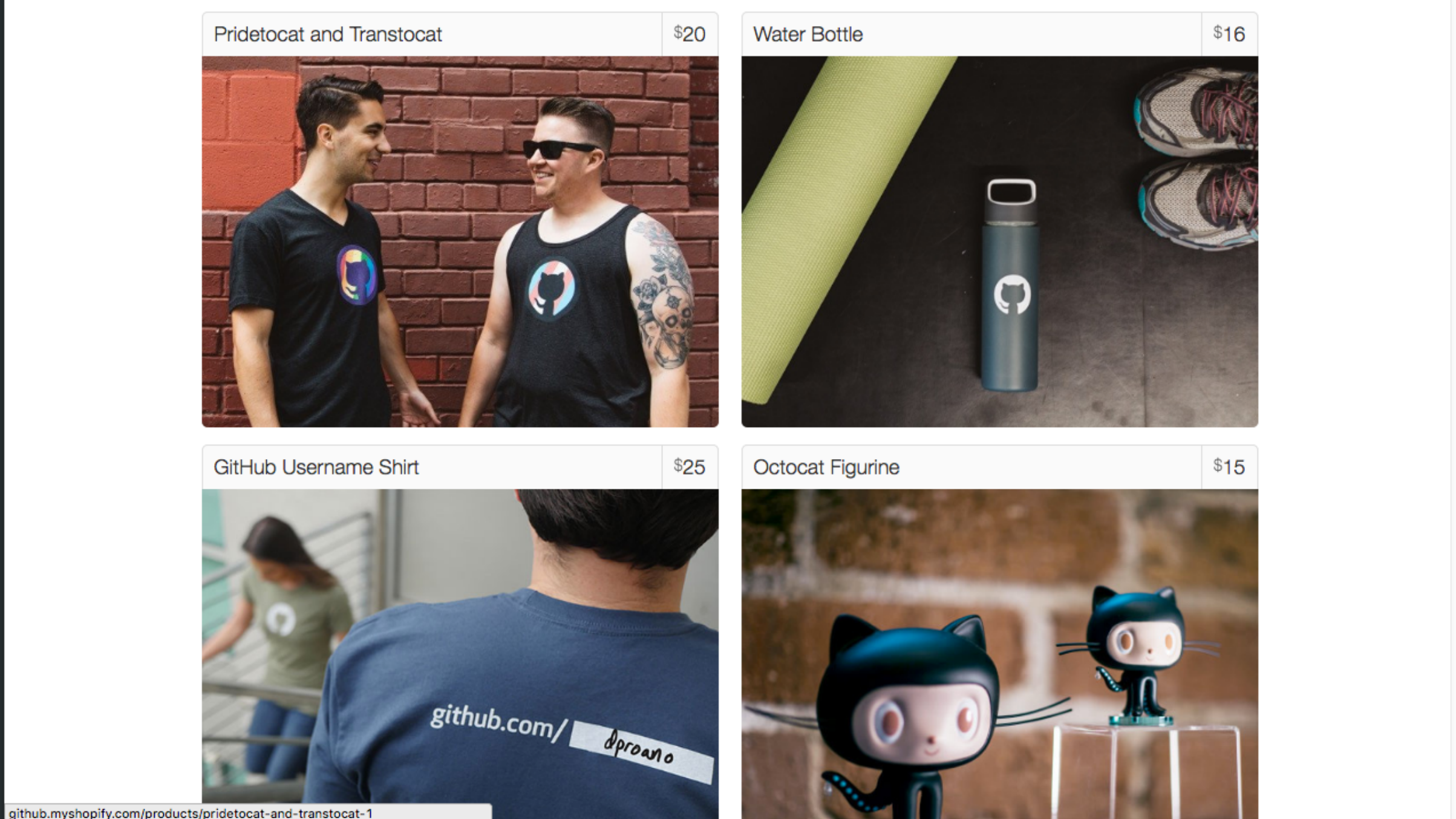
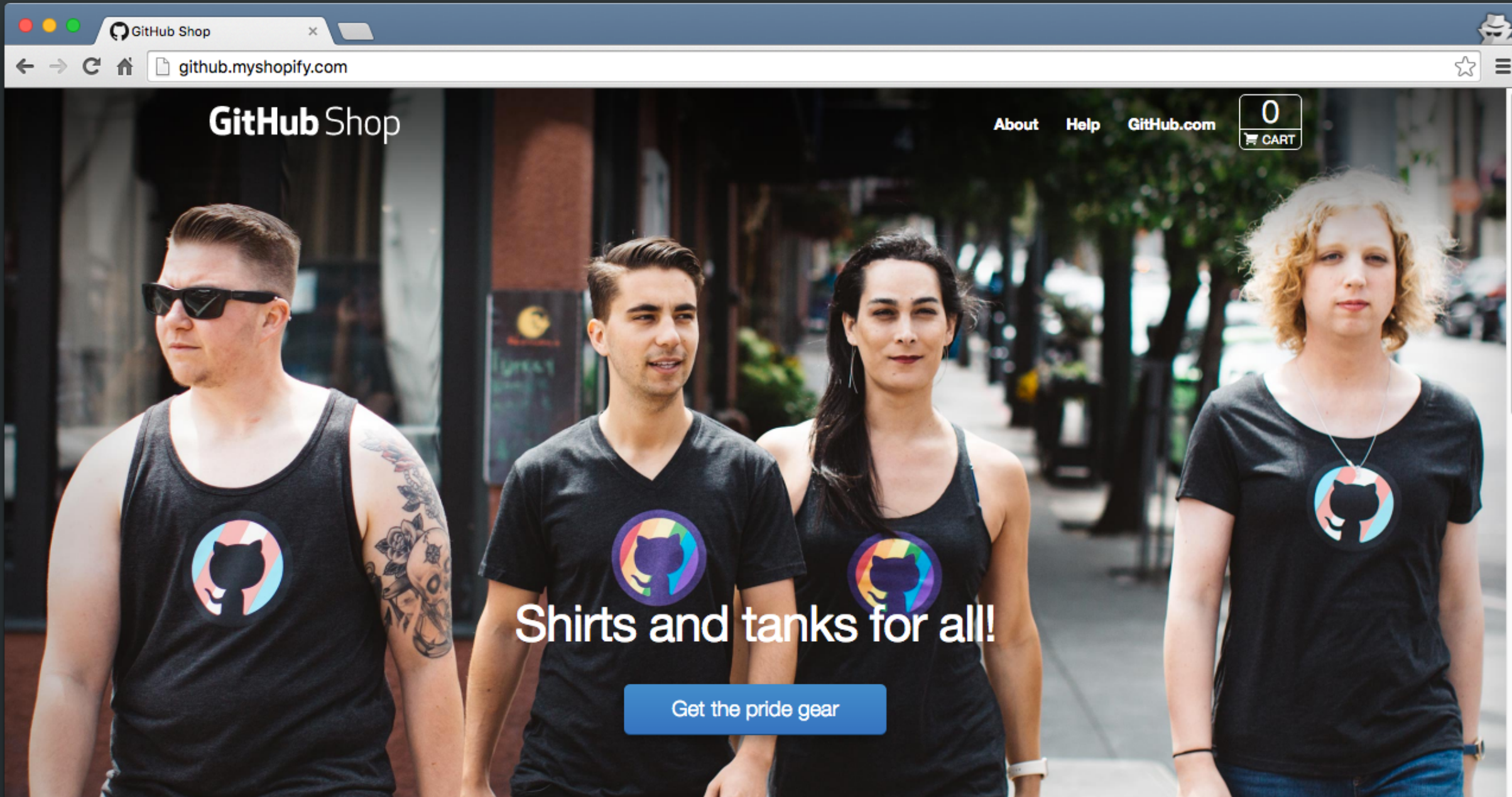
⚙️ [Follow](#)

Trying to buy #DolceK #KylieLipKit and i want to cry because #KYLIECOSMETICS is having difficulties 🥺





How Shopify works



THE INTERNET

LB

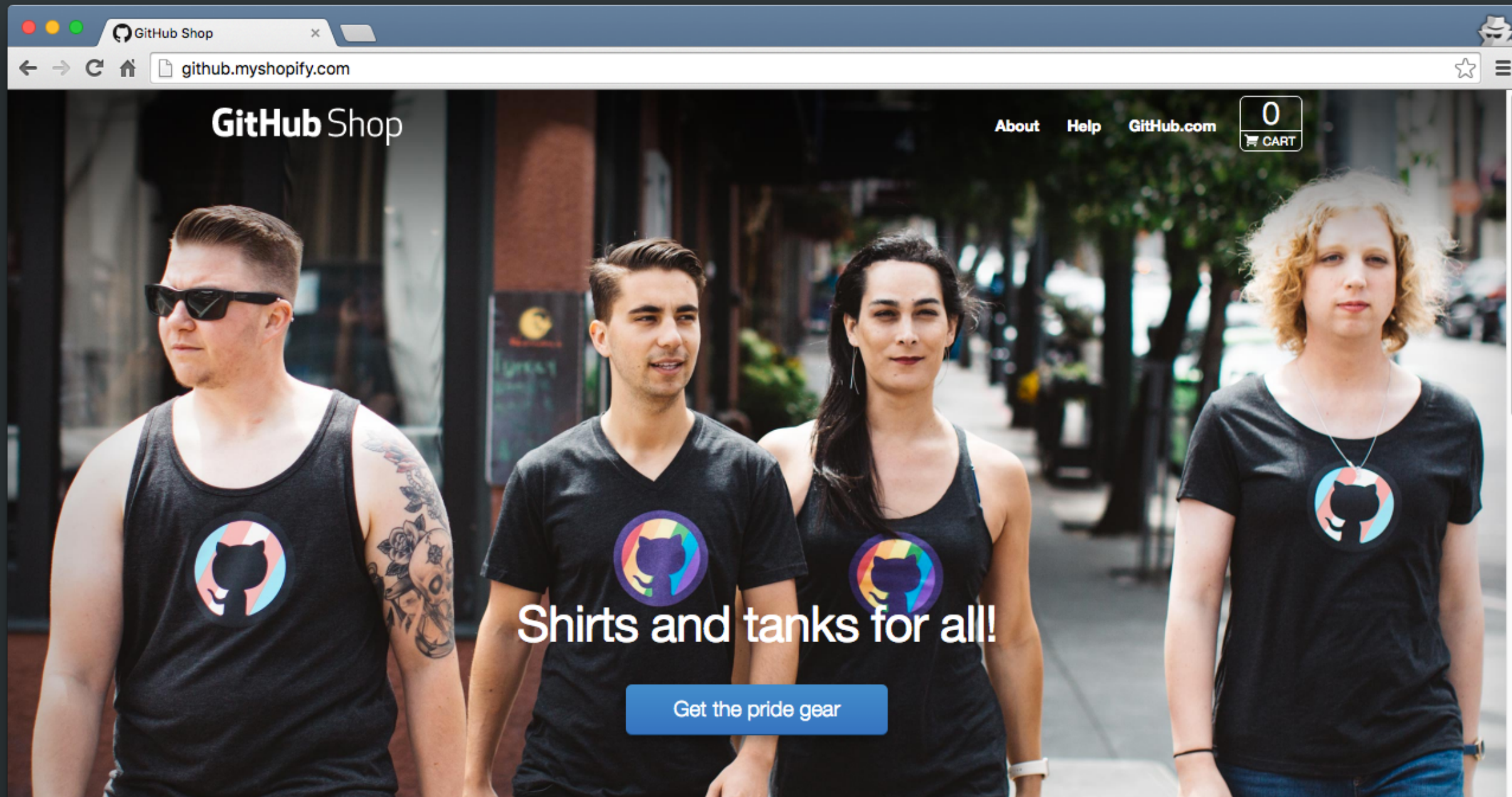
RAILS

MYSQL

MEMCACHED

REDIS

RESQUE WORKER



Pridetocat and Transtocat \$20



Water Bottle \$16



GitHub Username Shirt \$25



Octocat Figurine \$15



github.myshopify.com/products/pridetocat-and-transtocat-1

THE INTERNET



LB



RAILS

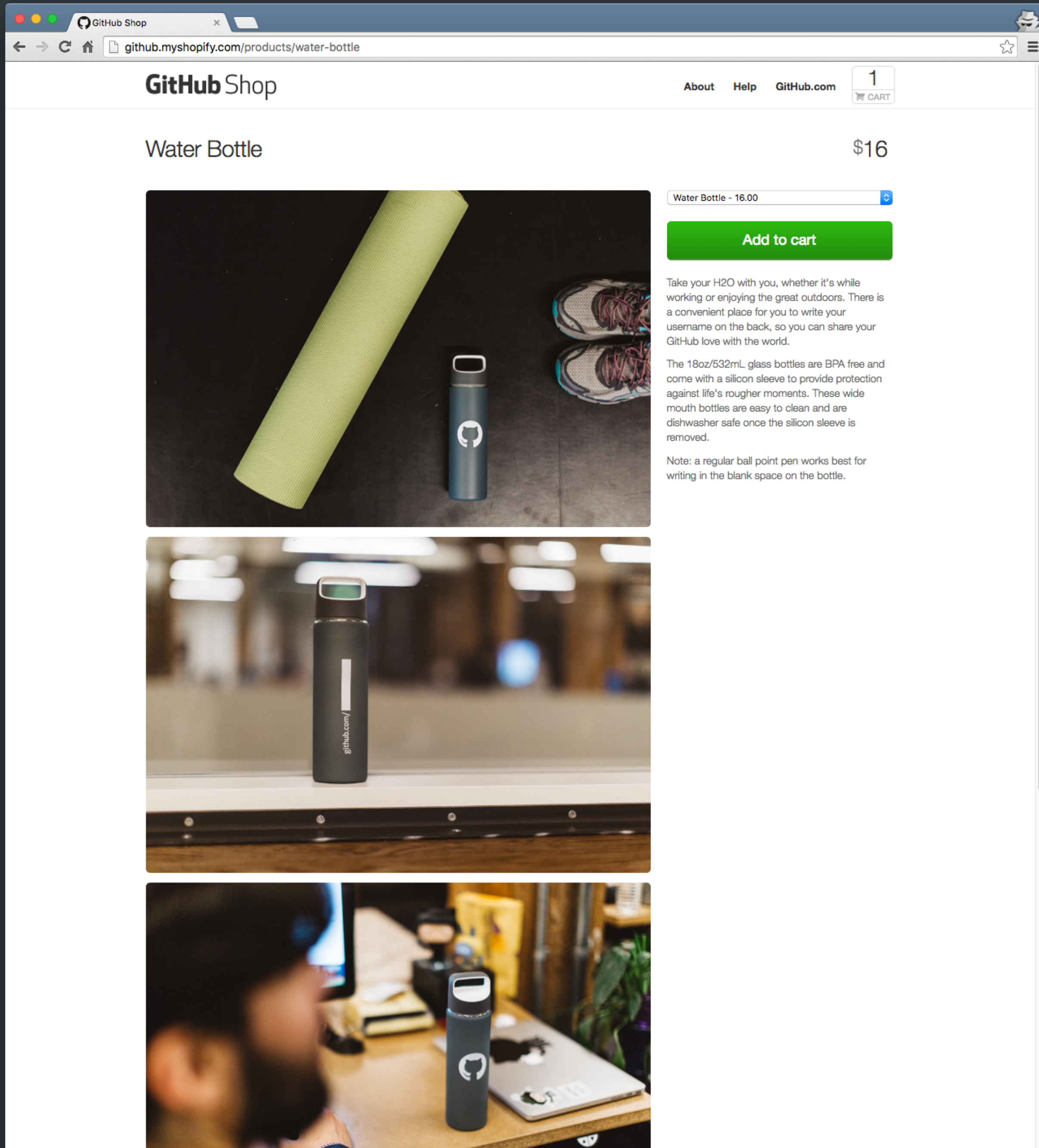


MYSQL

MEMCACHED

REDIS

RESQUE WORKER



THE INTERNET



LB



RAILS

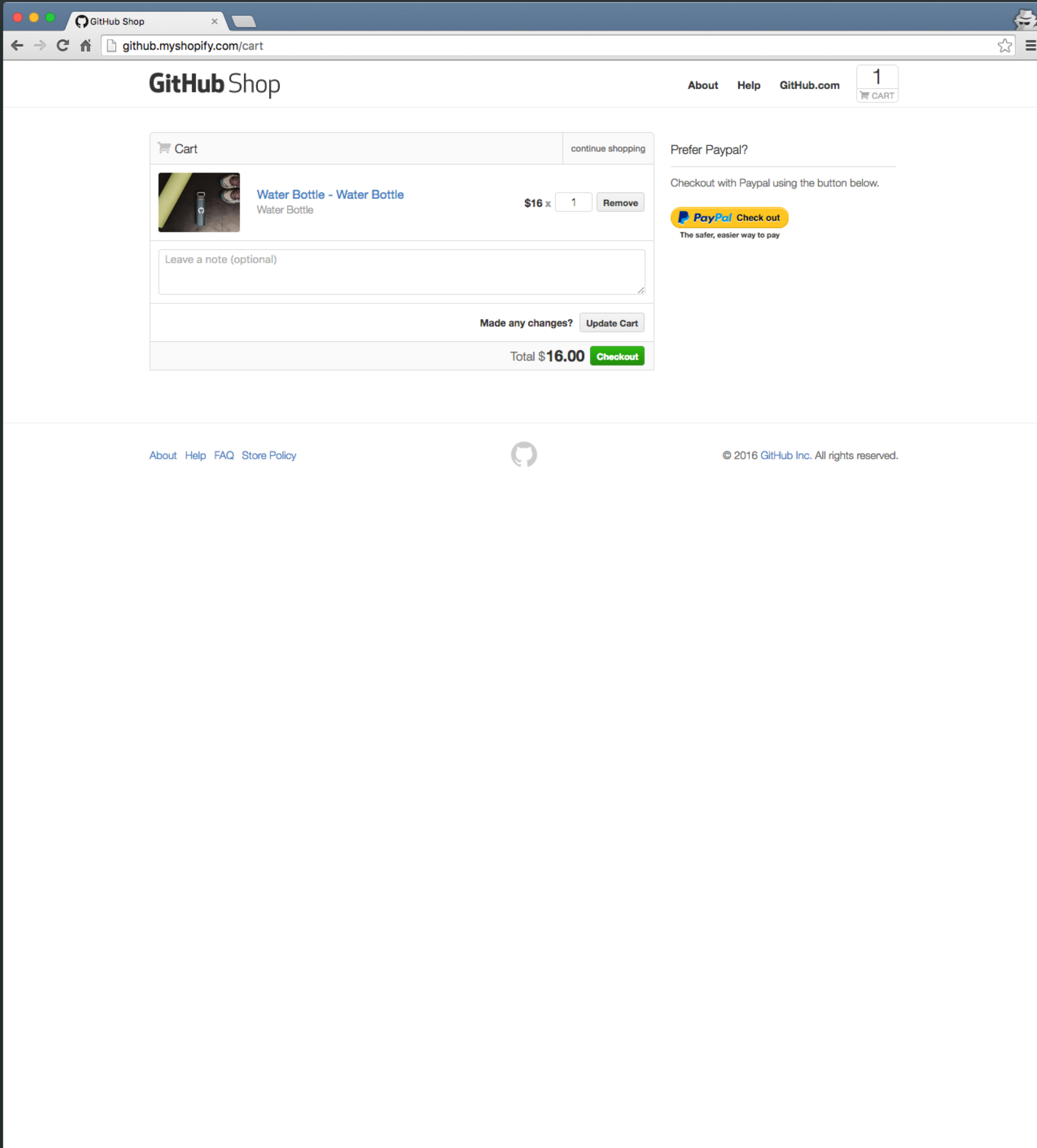


MYSQL

MEMCACHED

REDIS

RESQUE WORKER



THE INTERNET



LB



RAILS



MYSQL

MEMCACHED

REDIS

RESQUE WORKER

The screenshot shows a checkout page for GitHub. The left sidebar contains the following sections:

- GitHub**
- Navigation: [Cart](#) > [Customer information](#) > [Shipping method](#) > [Payment method](#)
- Customer information**: An input field for "Email".
- Shipping address**: Fields for "First name", "Last name", "Company (optional)", "Address", "Apt, suite, etc. (optional)", "City", "Country" (Canada), "Province" (Ontario), "Postal code", and "Phone".
- Checkbox: "Save this information for next time".
- Buttons: "[Return to cart](#)" and "Continue to shipping method".

The right sidebar shows a cart summary:

- Item: **Water Bottle** 16.00
- Gift card or discount code: [Apply](#)
- Subtotal: 16.00
- Shipping: -
- Total**: USD **16.00**

THE INTERNET



LB



RAILS

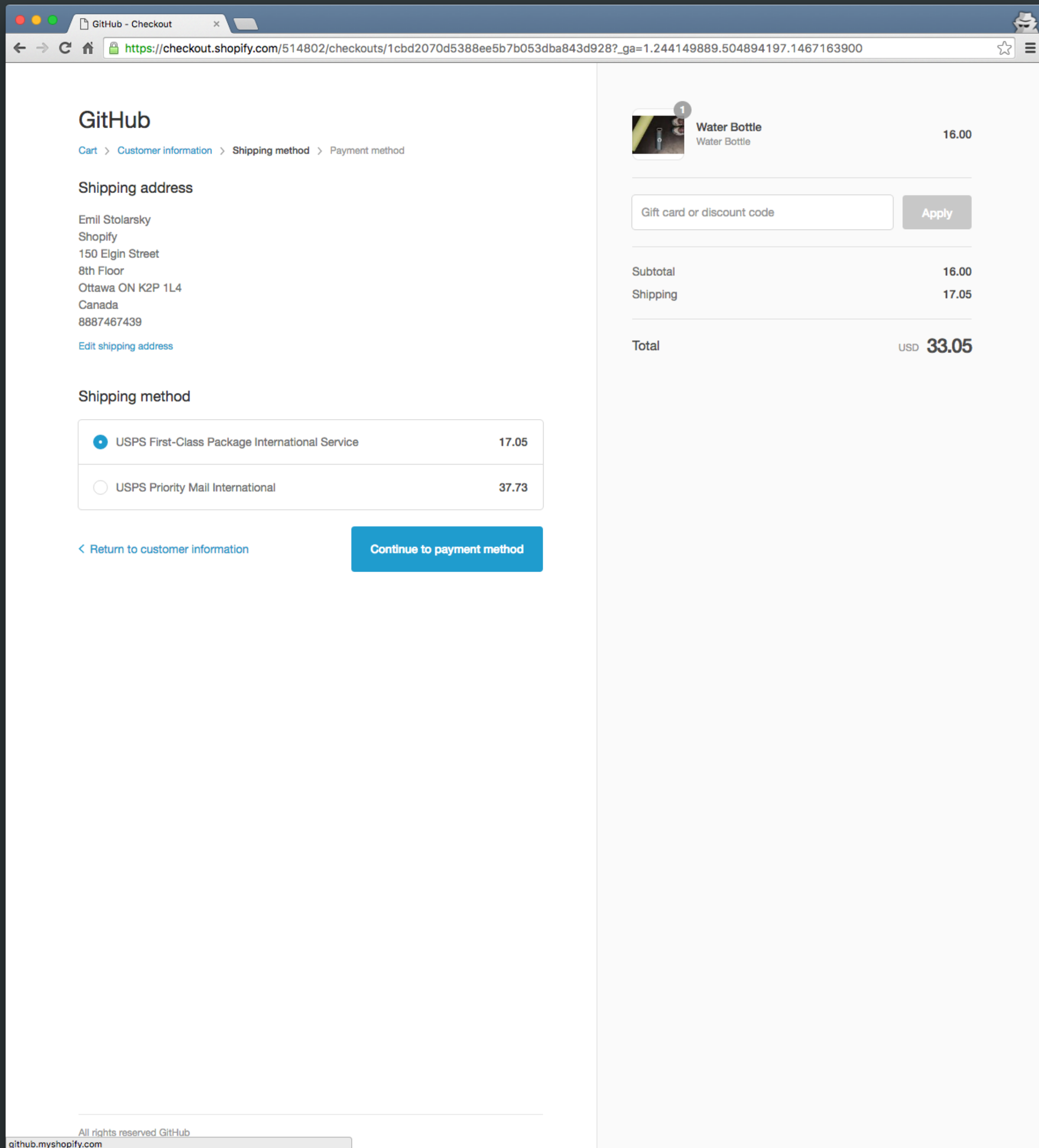


MYSQL

MEMCACHED

REDIS

RESQUE WORKER



THE INTERNET



LB



RAILS

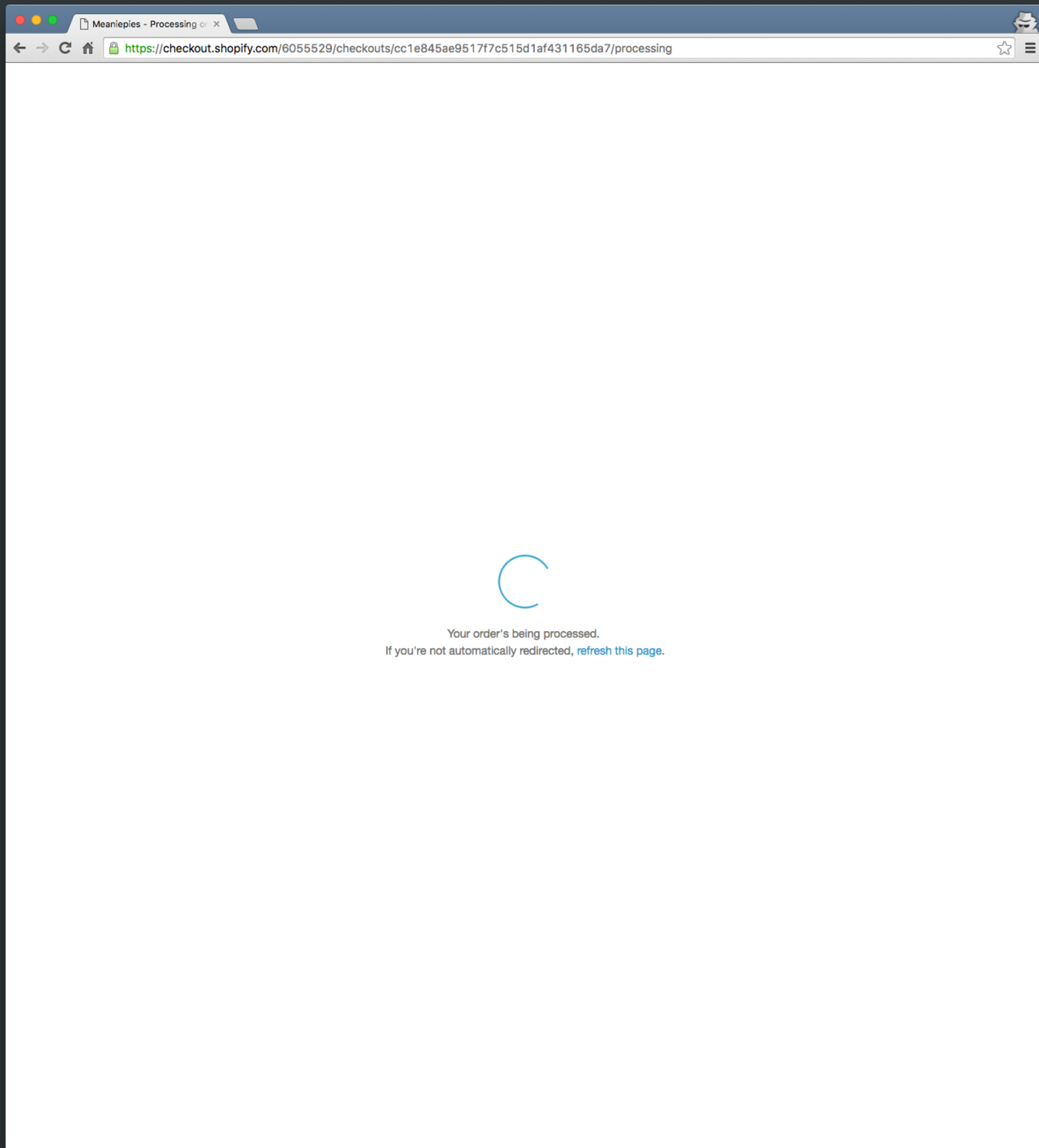


MYSQL

MEMCACHED

REDIS

RESQUE WORKER



THE INTERNET

LB

RAILS

MYSQL

MEMCACHED

REDIS


RESQUE WORKER



Meaniepies - Thank you Emil x
https://checkout.shopify.com/6055529/checkouts/cc1e845ae9517f7c515d1af431165da7/thank_you


Not Really Github

Order #1277
Thank you Emil!



Shipping address
Ottawa, Ontario

Your shipment is confirmed
We've accepted your order, and we're getting it ready. A confirmation email has been sent to emil@shopify.com. Come back to this page for updates on your shipment status.

Customer information	
Shipping address	Billing address
Emil Stolarsky Shopify 150 Elgin Street 8th Floor Ottawa ON K2P 1L4 Canada 8887467439	Emil Stolarsky Shopify 150 Elgin Street 8th Floor Ottawa ON K2P 1L4 Canada 8887467439
Shipping method	Payment method
Anything	 ending with 1 — \$15.00

[Need help? Contact us](#) [Continue shopping](#)

All rights reserved Meaniepies

THE INTERNET

LB

RAILS

MYSQL

MEMCACHED

REDIS



RESQUE WORKER

1. Right Tool

2. Heat Shield

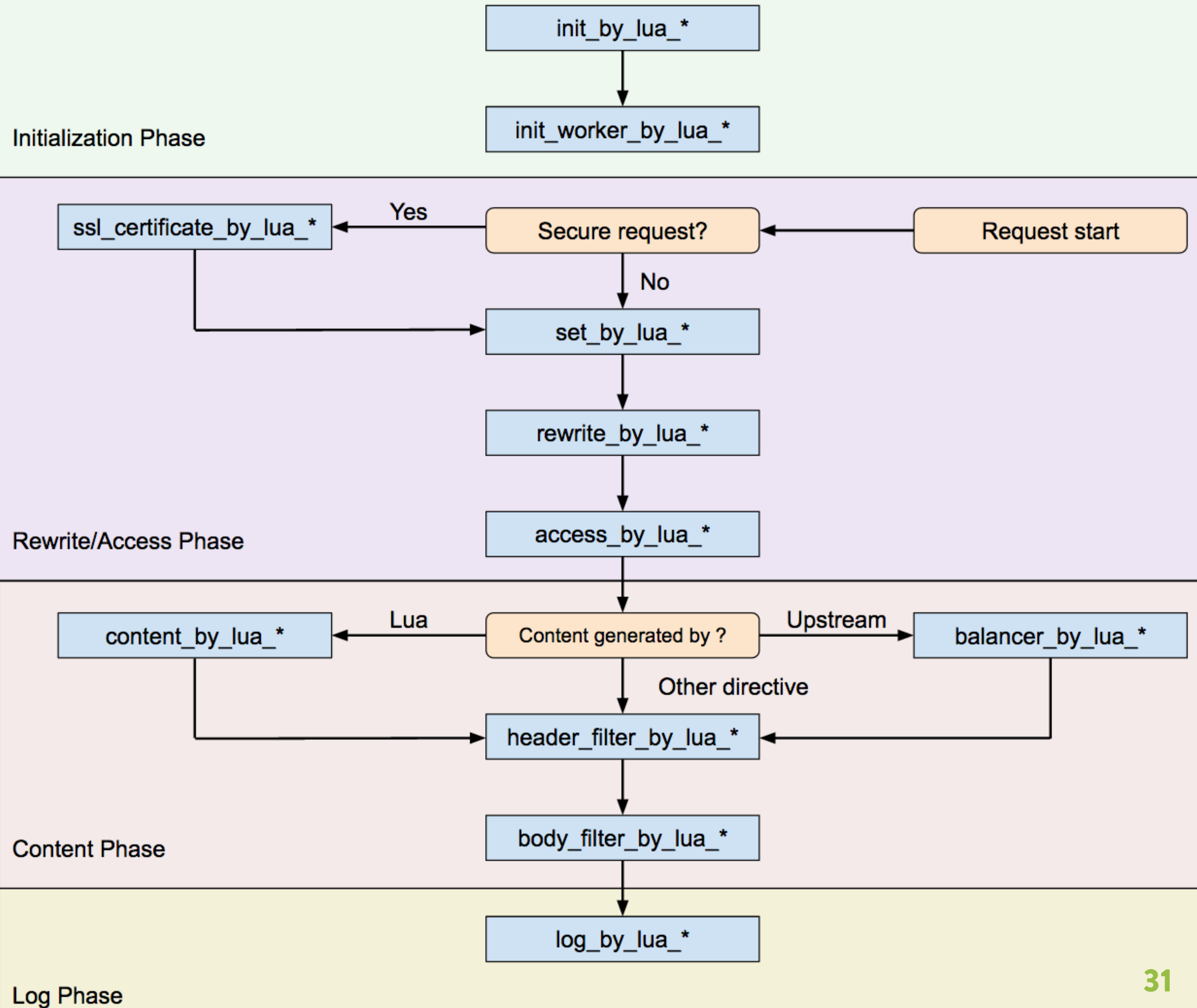
3. Order out of Chaos

Nginx

Robust Piece of Software

Lua

Order of Lua Nginx Module Directives



1. Right Tool

2. Heat Shield

3. Order out of Chaos

Back Pressure

LIKE. LITERALLY. SO MUCH DEMAND.

We are experiencing overwhelming demand for today's sale. Please hold tight and do not refresh this page or you will lose your spot.

If a spot opens up before your product sells out, you will be sent to your shopping cart, however we can't guarantee you will get your products during today's sale. There are "literally" so many people trying to check out at the same time that we have created this holding zone so that the site won't crash. We can guarantee that we're making more and will be back as soon as we can with another sale.

Thank you for your patience and support, and good luck!



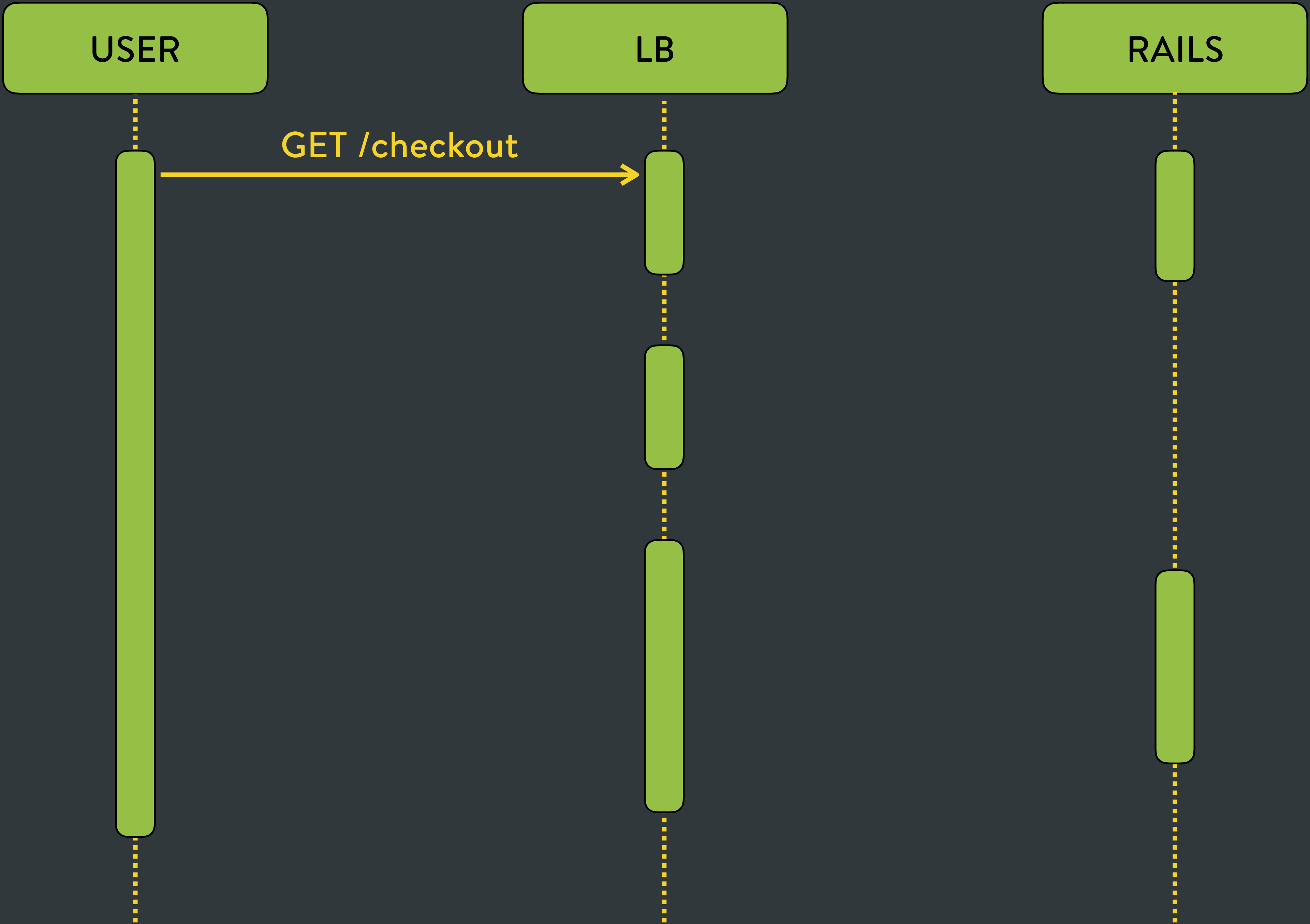
EXCUSE US FOR THE

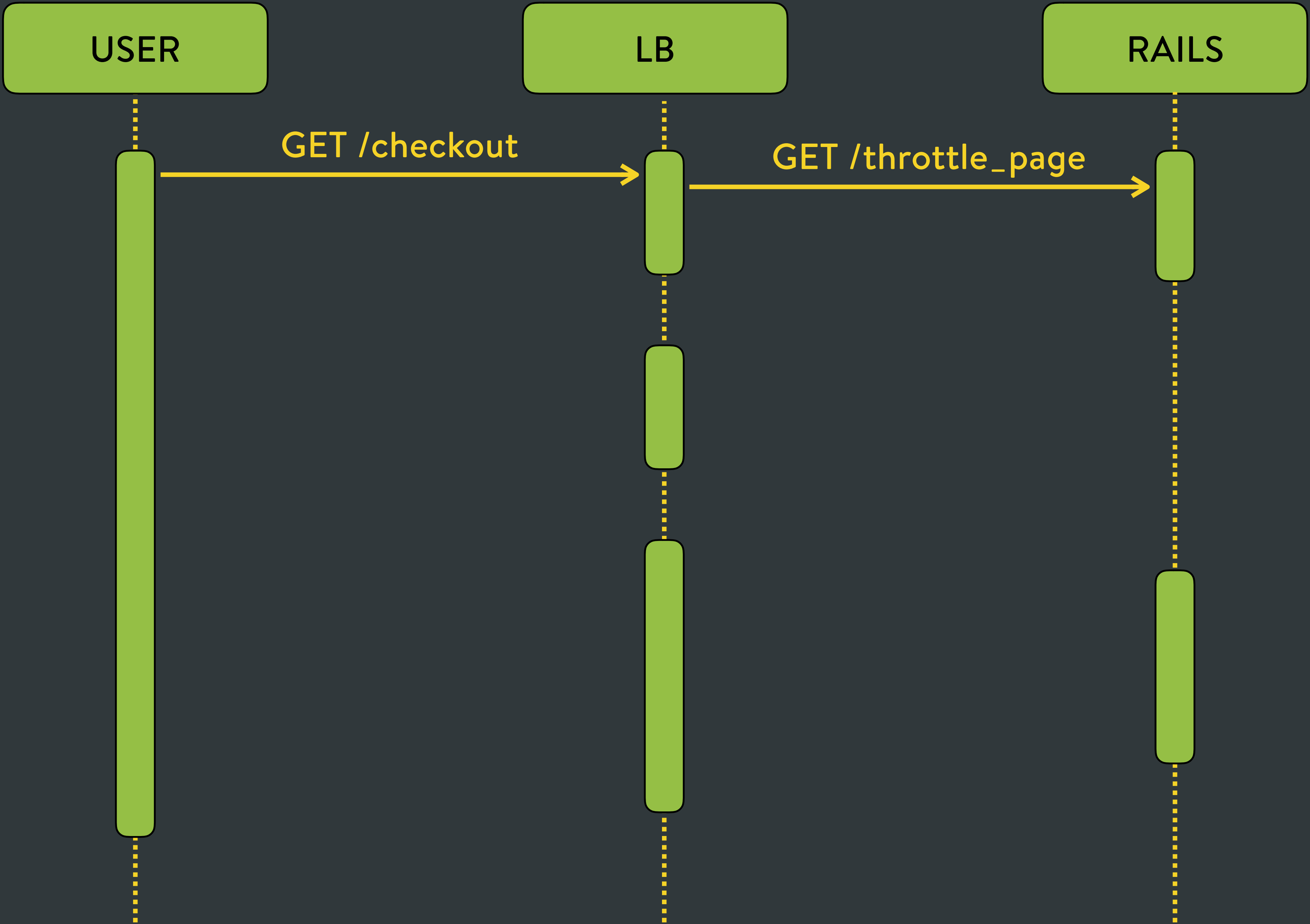
WAIT & HEARTBREAK

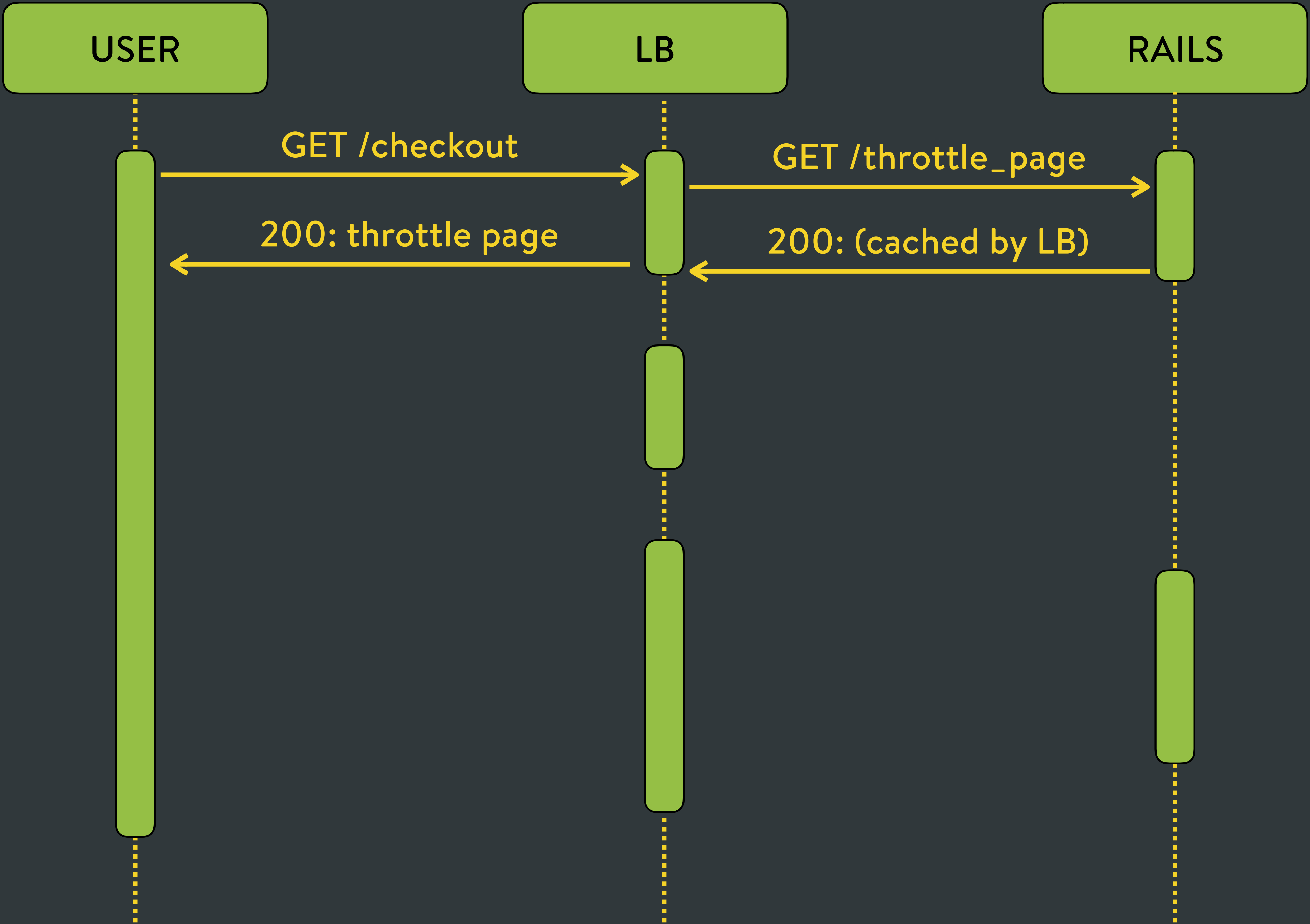
BUT THERE'S SO MUCH DEMAND

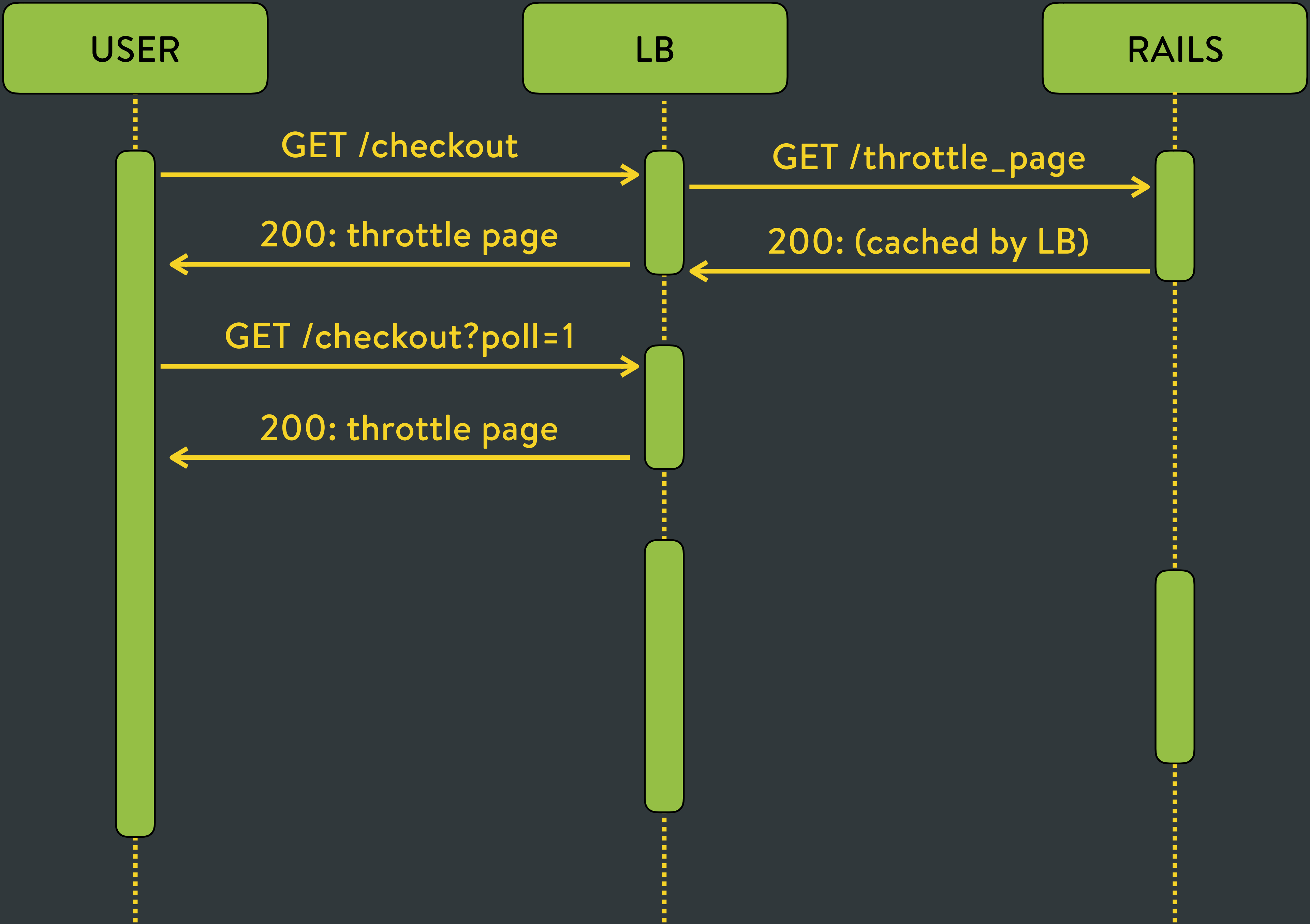
WE'RE TRYING TO GET YOU TO THE CHECKOUT. WHEN A SPOT OPENS UP, WE'LL AUTOMATICALLY REDIRECT YOU. DO NOT REFRESH OR YOU'LL LOSE YOUR SPOT.

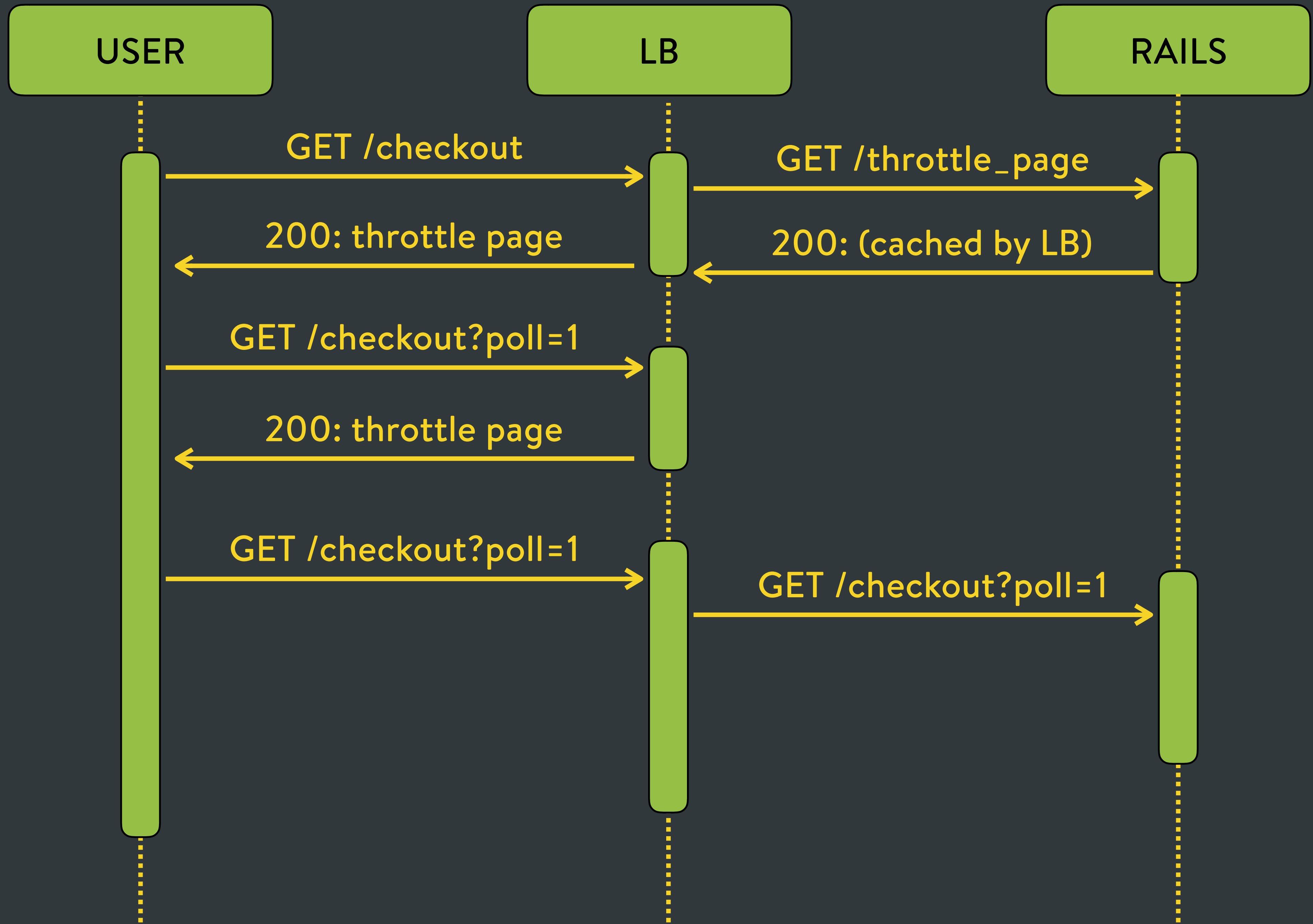


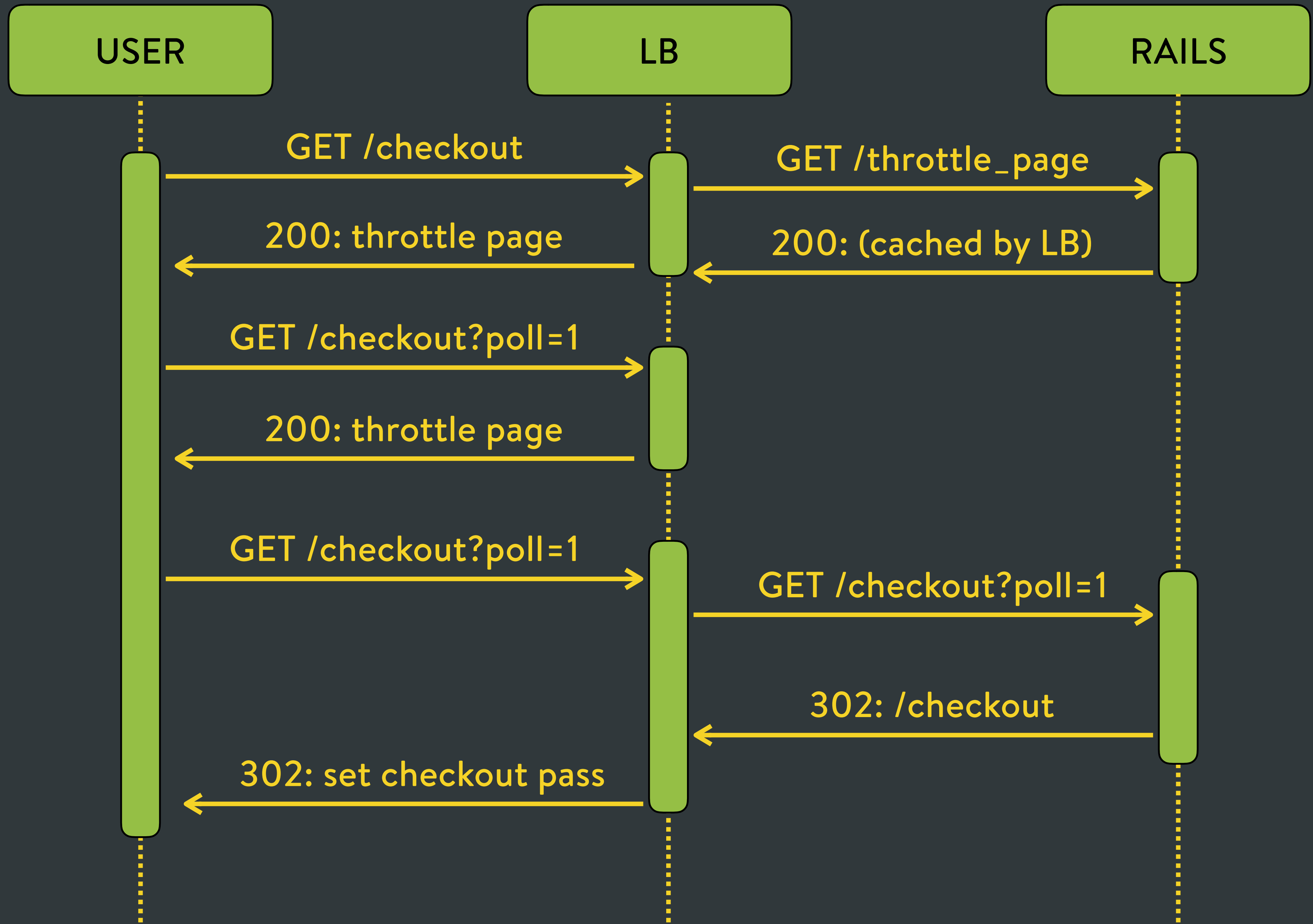












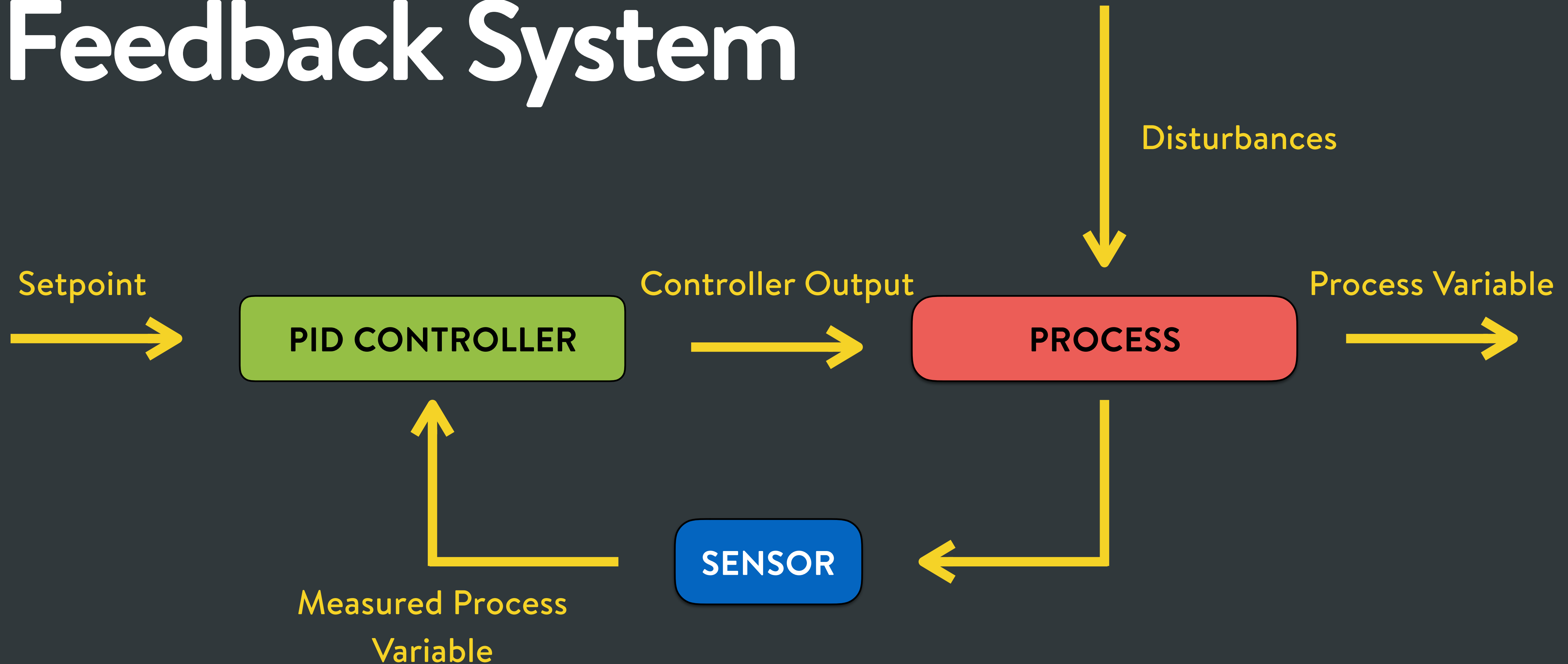
1. Right Tool
2. Heat Shield
3. Order out of Chaos



Stateless* fair queueing

*** - Almost Stateless**

Feedback System

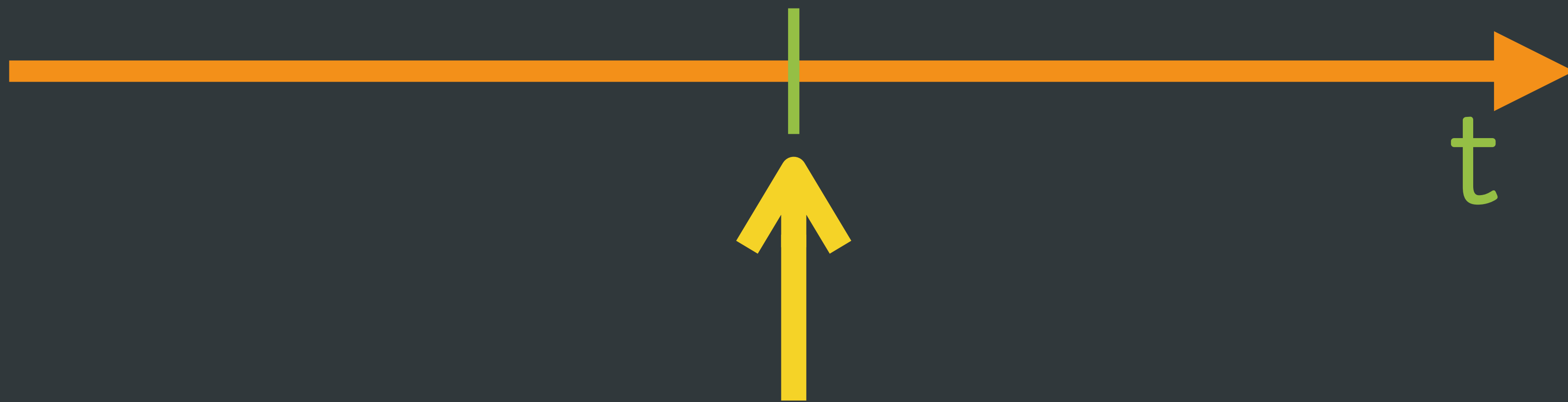


Stateless fair queueing



Timeline of timestamp in cookie

Stateless fair queueing



Lag delimiter

Stateless fair queueing

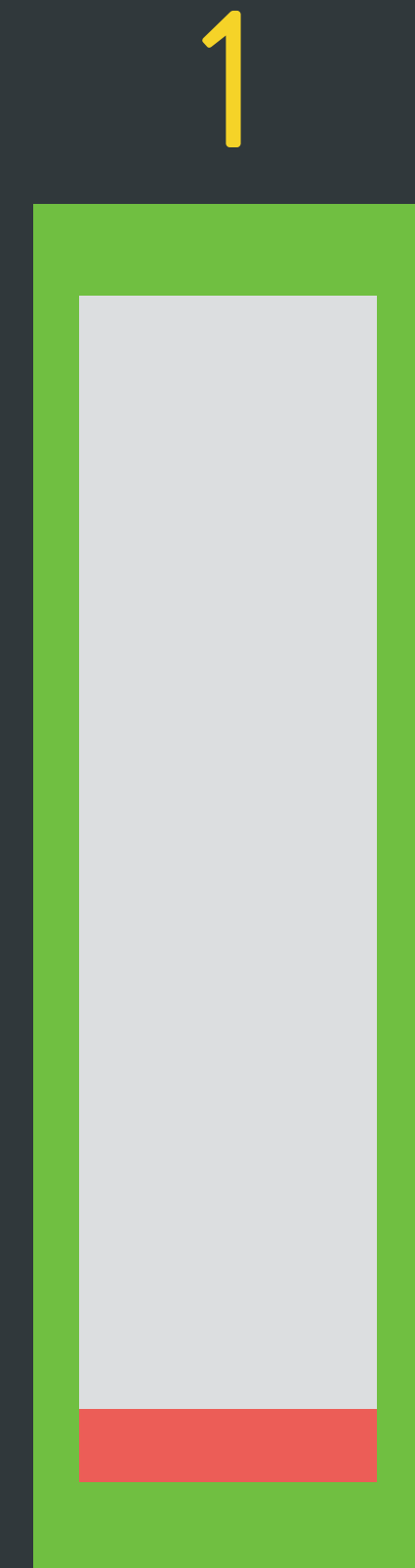
high priority

low priority



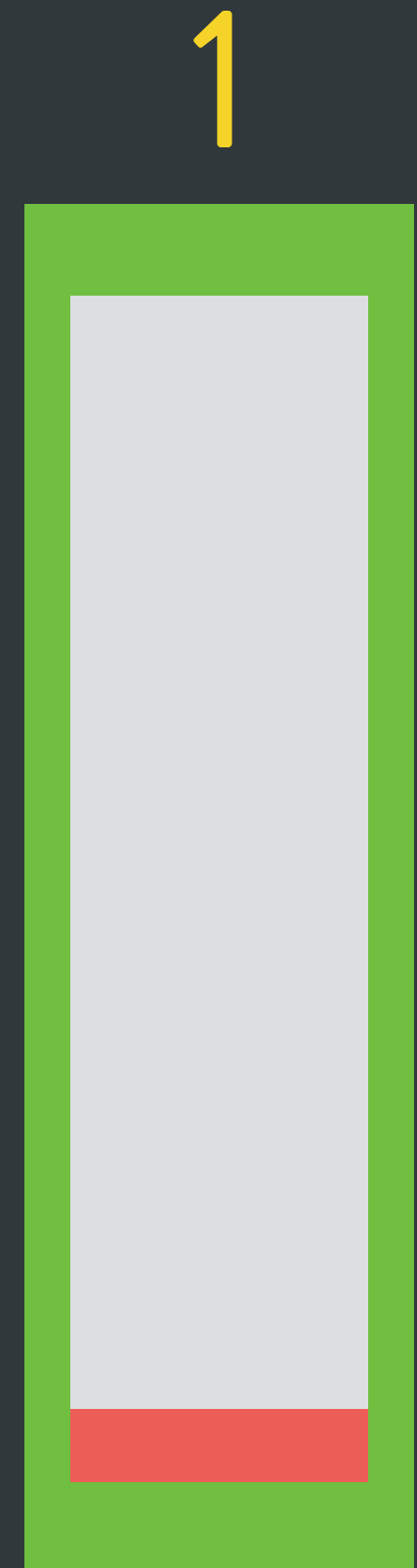
Stateless fair queueing

Bucket of high priority requests (max 16)



Stateless fair queueing

high priority



Stateless Fair queueing



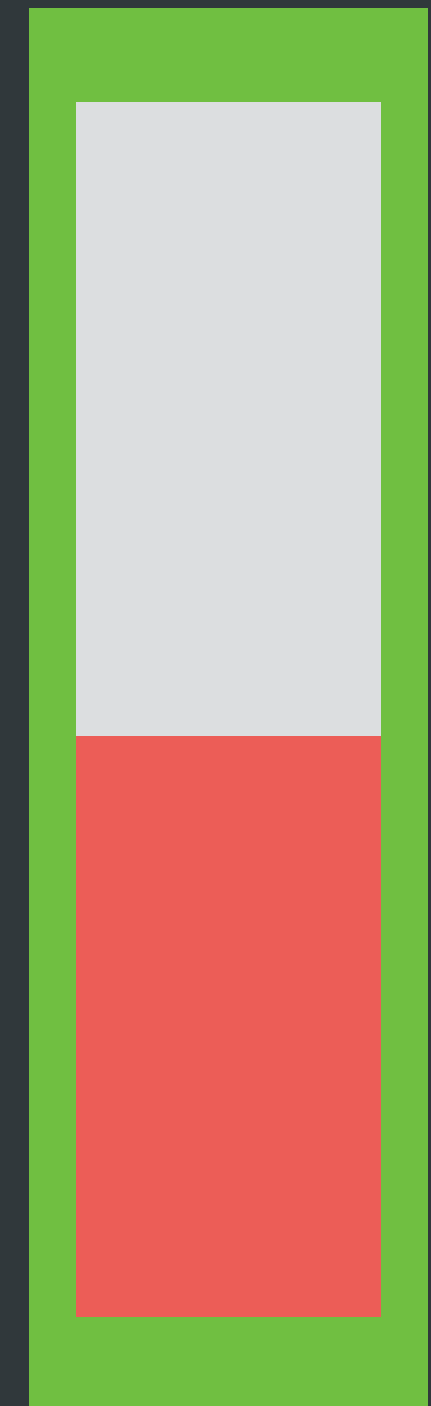
Stateless Fair queueing

high priority

low priority



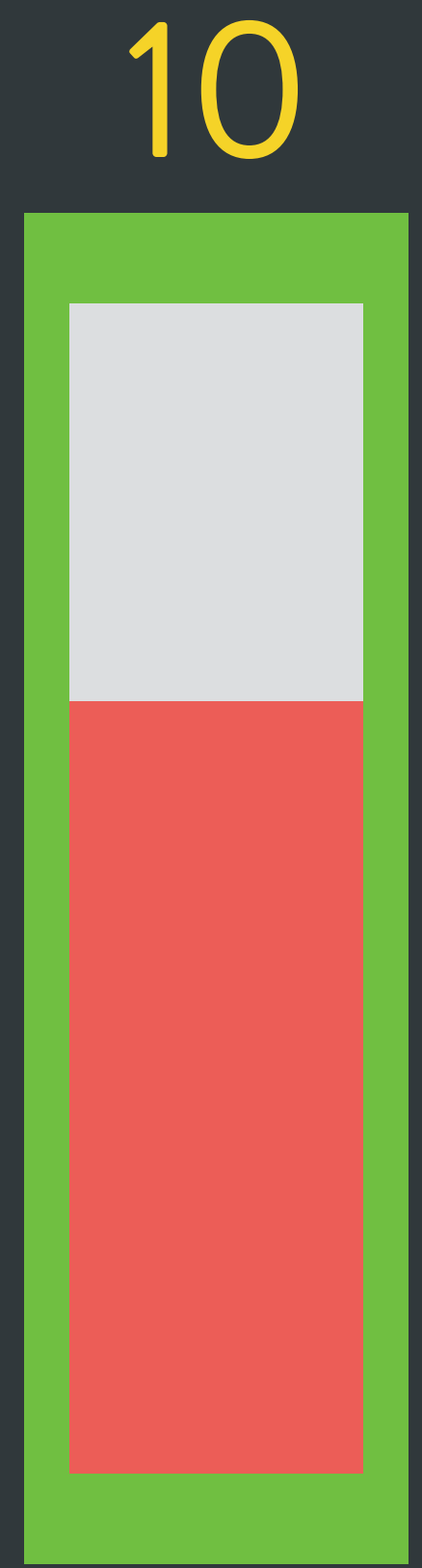
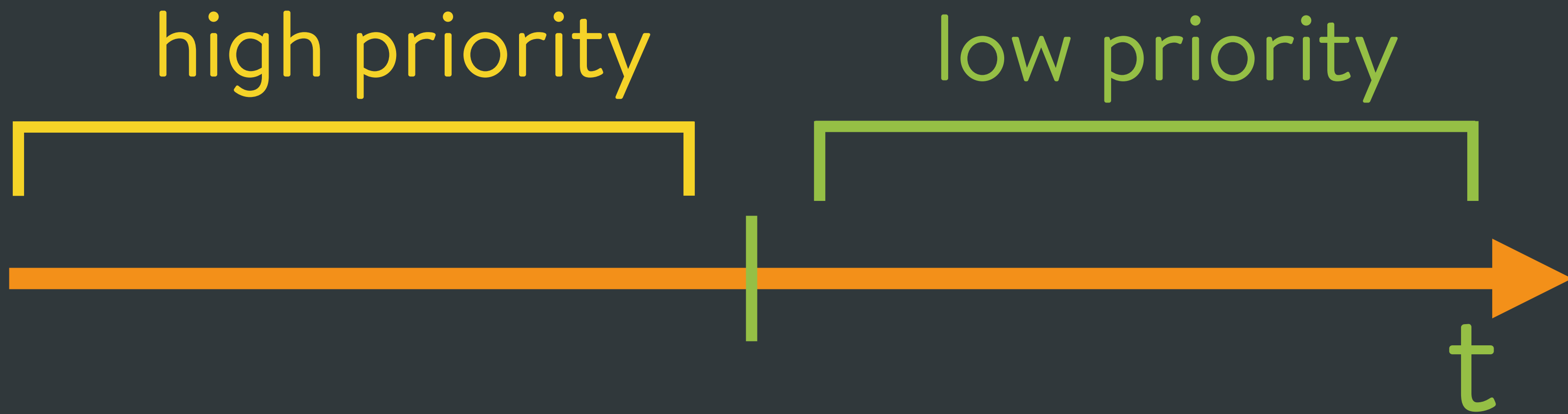
8



Stateless Fair queueing

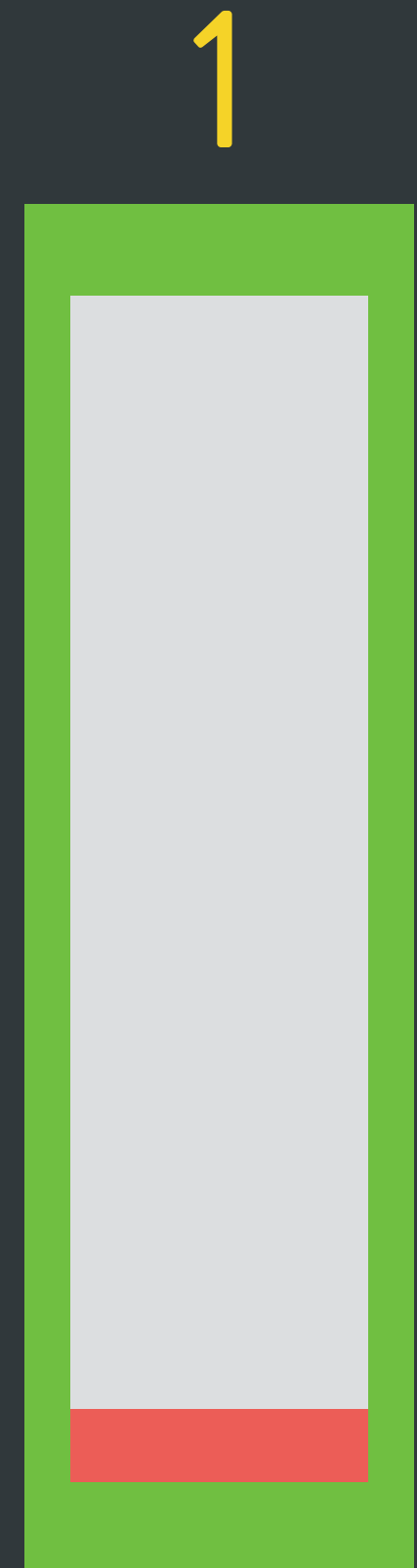


Stateless Fair queueing



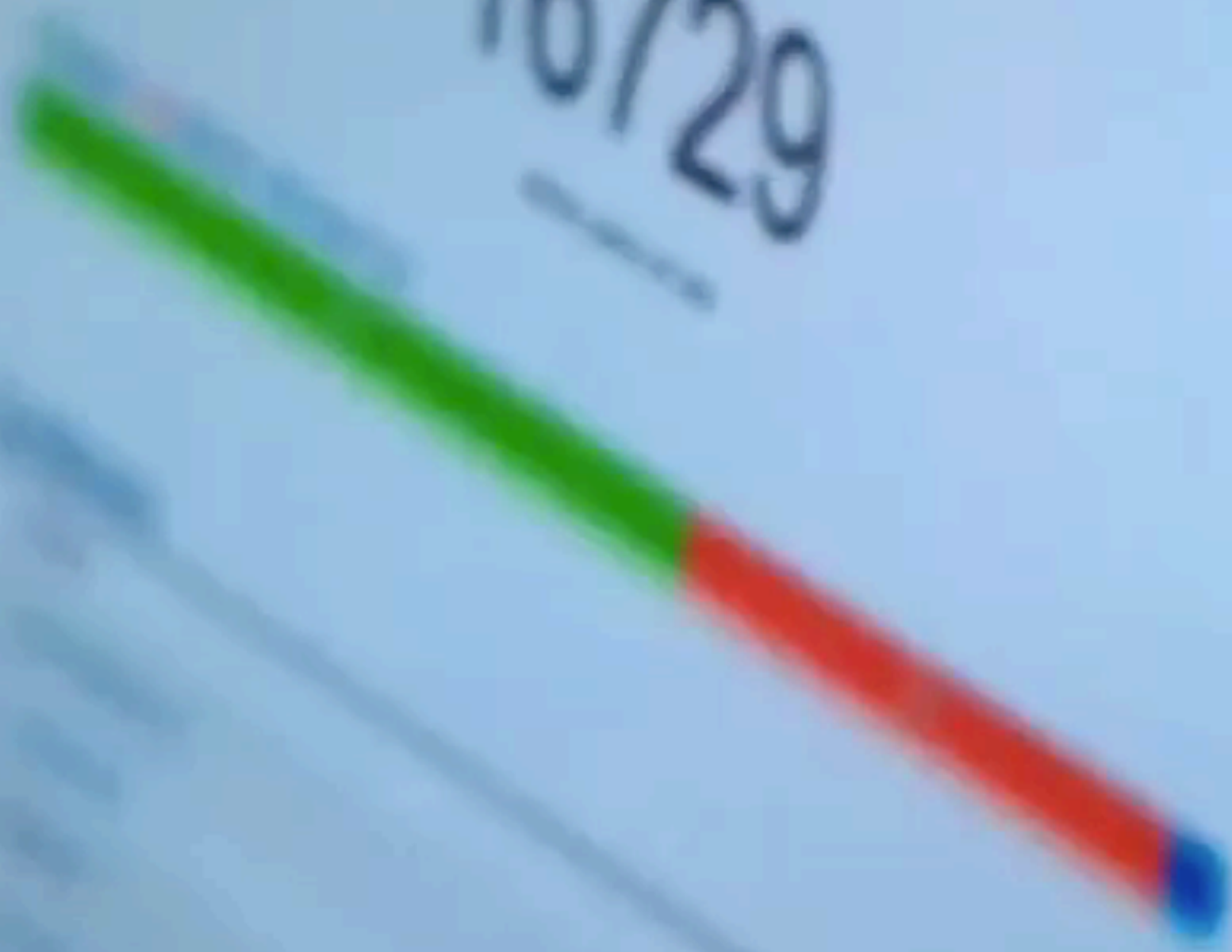
Stateless fair queueing

high priority



But... Why?

16729



Reputation

~~Flash Sales~~ Payments

Payments Gaming

Gaming Tweets

Nginx

Throttling Queueing

We're hiring!



Thanks!

Follow me on Twitter @EmilStolarsky

