

**GDC**

March 21-25, 2022  
San Francisco, CA



# 10 Ways to Crash Your Server on Launch Day

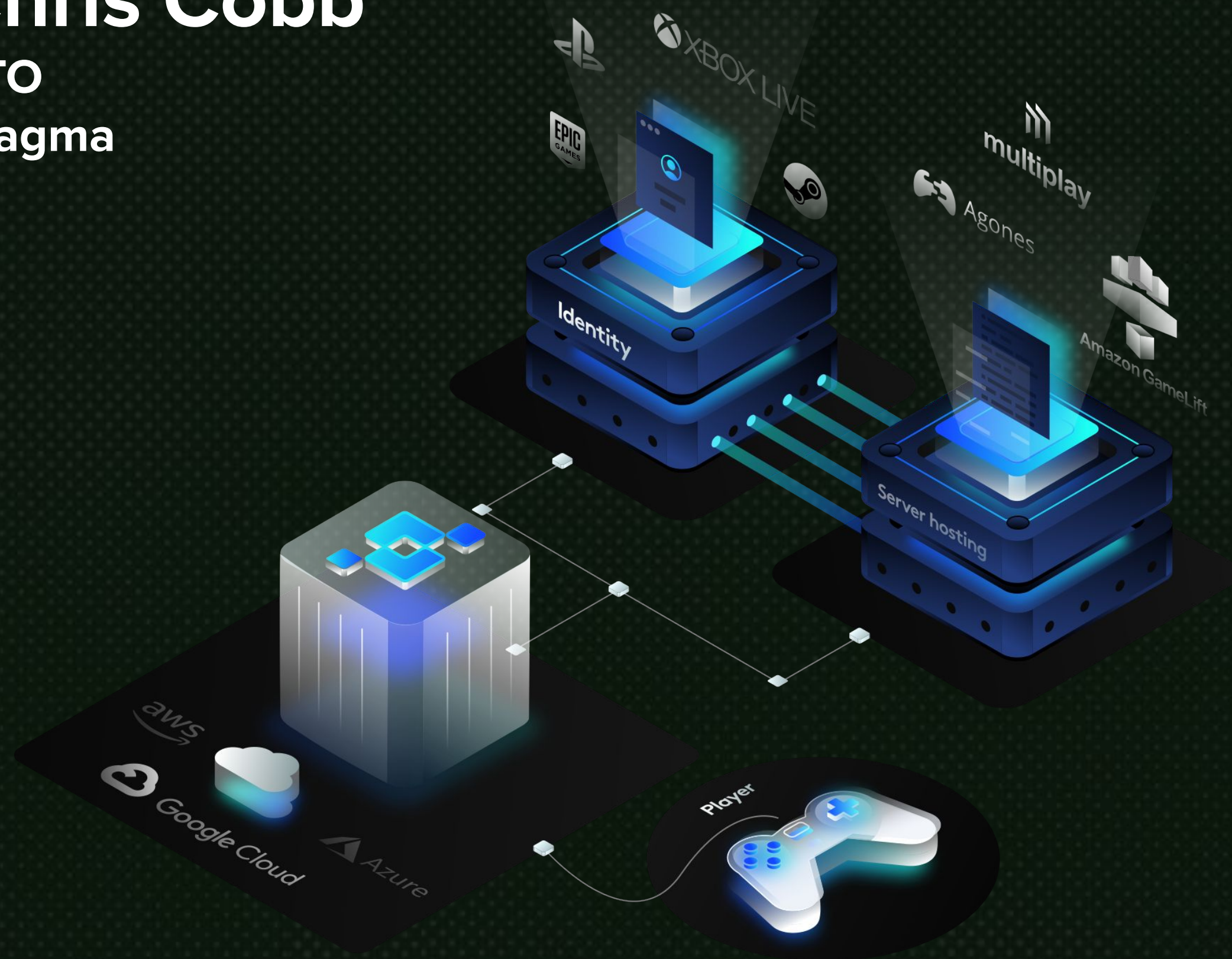
#GDC22







**Chris Cobb**  
CTO  
Pragma





News

## After Troubling Launch Issues, Lost Ark is Finally Live

Lost Ark surpasses server difficulties and goes live.



Amie Gammons

February 8, 2022

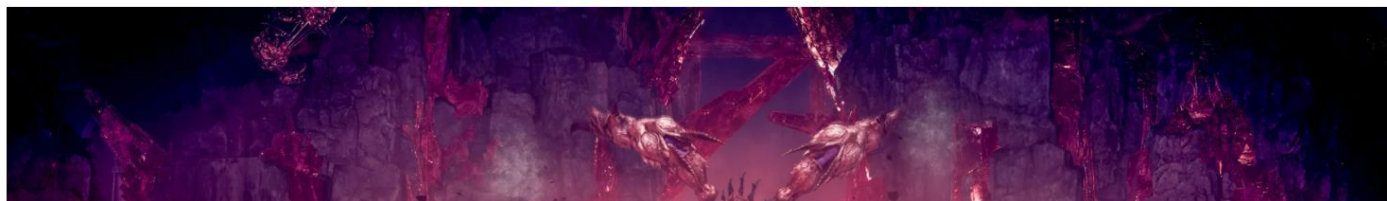
Last Updated: February 8, 2022



0



1 minute read



## Apex Legends still has stability issues after patch that should've fixed them

The game has been wobbly since the Evolution update



News by Imogen Beckhelling

News Writer

Published on 23 Sep, 2021

50 Times in the First Two Weeks of May 2020

News

# Pokemon Go Crashed over 50 Times in the First Two Weeks of May 2020

May 15, 2020 Last Updated: May 15, 2020

## Call of Duty: Warzone Server Crashes as Players Attempt to Stop Tram

A group of dedicated players, with their attempt to stop the tram, caused the server to crash.

BY RICHARD WARREN  
PUBLISHED JAN 08, 2022



## Blizzard Struggling To Fix WoW Server Issues After Shadowlands Launch

World of Warcraft: Shadowlands launched this week after much anticipation, and Blizzard is still working to get servers stable and shorten queues.

BY BRYAN LAWVER  
PUBLISHED NOV 25, 2020



## LoL Clash has crashed... again

Gergana Stamenova

LEAGUE OF LEGENDS - 25-2-2020

Dec 3, 2021 8:55 am

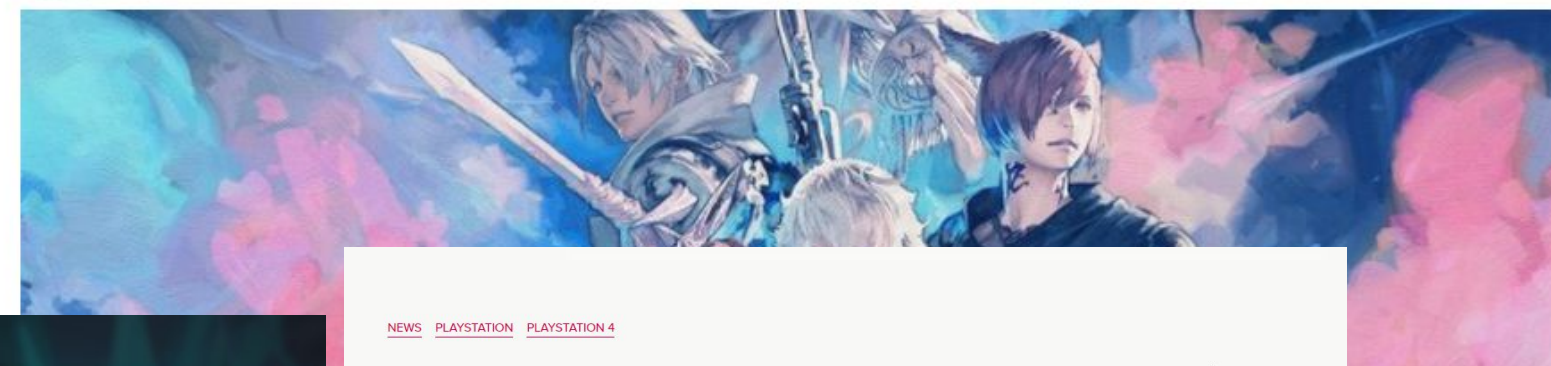
MMO

## Numerous servers encountering technical difficulties during FFXIV's Endwalker launch day

The issues are "being investigated and addressed."



Eva Martinello



NEWS PLAYSTATION PLAYSTATION 4

## Anthem players say the game is crashing their PS4s

Some players report getting refunds from Sony over Anthem crashes

By Michael McWhertor | @MikeMcWhertor | Mar 4, 2019, 5:59pm EST

f t SHARE

# Agenda

⇒ Top themes



# Agenda

- ⇒ Top themes
- ⇒ 10 Ways to Crash Your Server

# Agenda

- ⇒ Top themes
- ⇒ ~~10 Ways to Crash Your Server~~
- ⇒ 10 Ways *Not* to Crash Your Server

# Agenda

- ⇒ Top themes
- ⇒ ~~10 Ways to Crash Your Server~~
- ⇒ 10 Ways *Not* to Crash Your Server
- ⇒ Questions

# Top Themes



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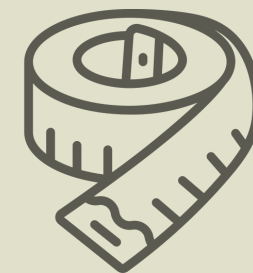


# Top Themes

(to prevent disaster)



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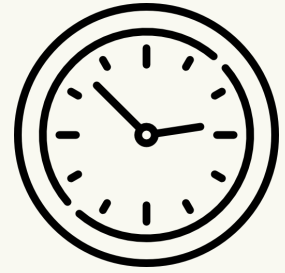


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# Top Themes

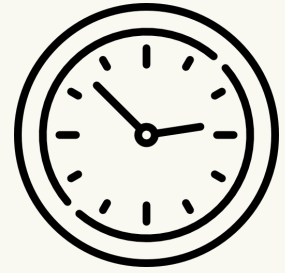
**Start early**



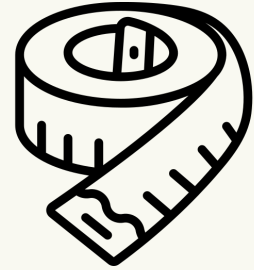


# Top Themes


**Start early**



**Measure**



# Top Themes

Start early 

Measure 

Don't go it alone 



# Top Themes

Start early 

Measure 

Don't go it alone 

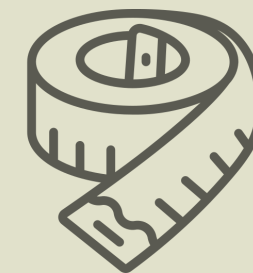




# 10 Ways to Crash Your Server on Launch Day



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# You didn't build a login queue



# You didn't build a login queue



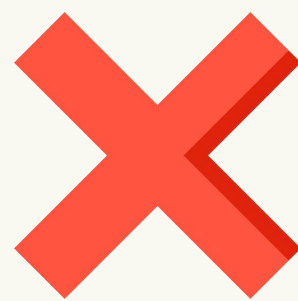








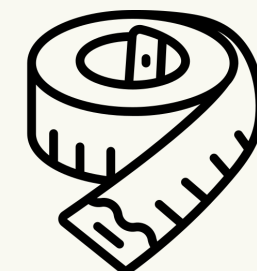




~~You didn't build a login queue~~



**Protect launch day**







# You built the login queue wrong



# You built the login queue wrong

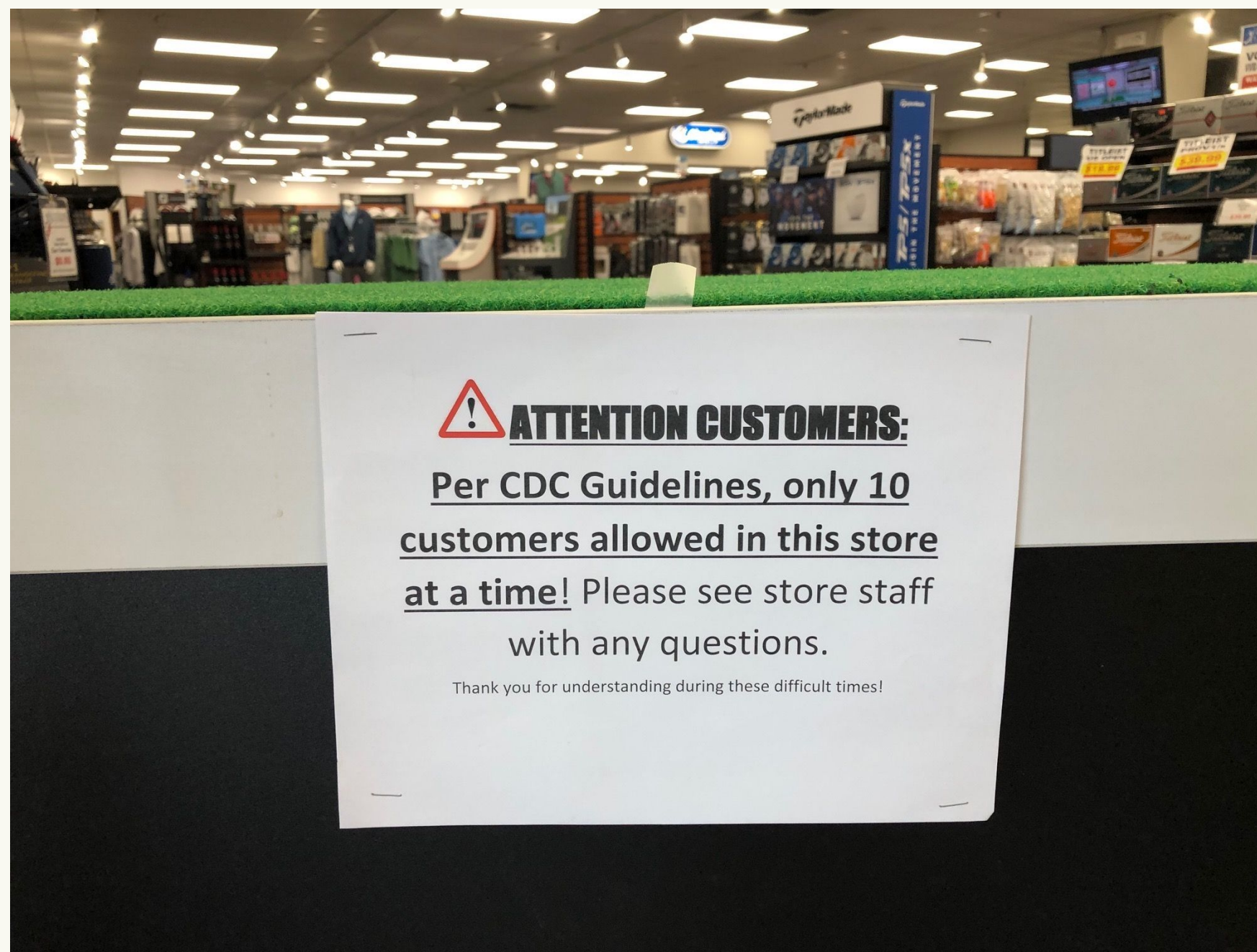




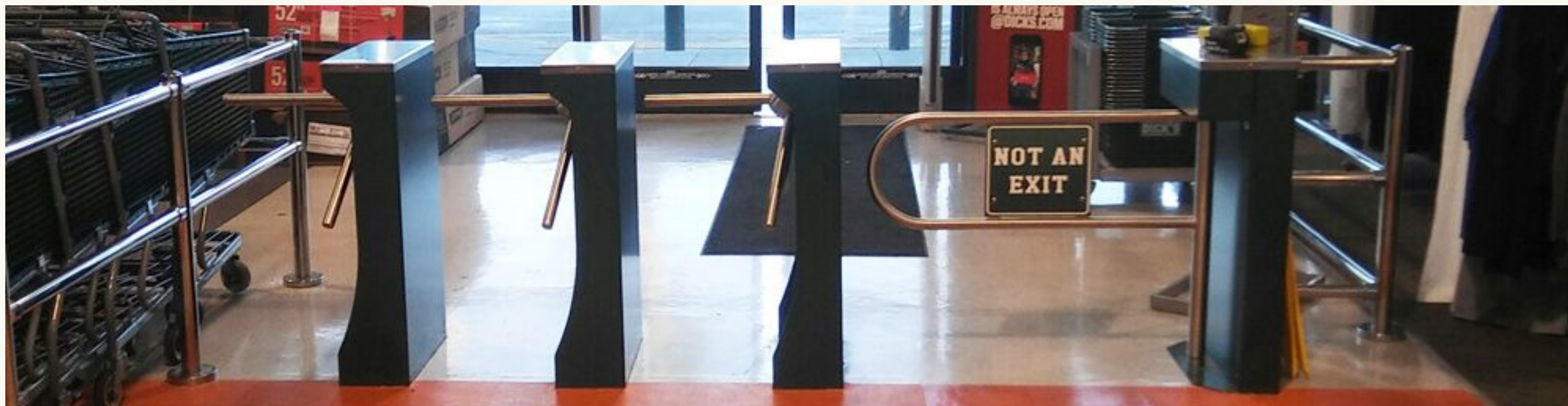
# STORY TIME











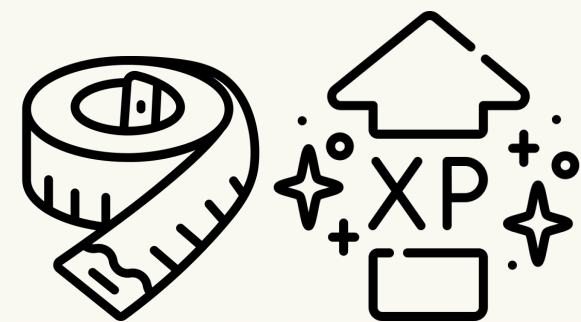




 ~~You built the login queue incorrectly~~



**Keep logins smooth**  
**Limit total number of players**

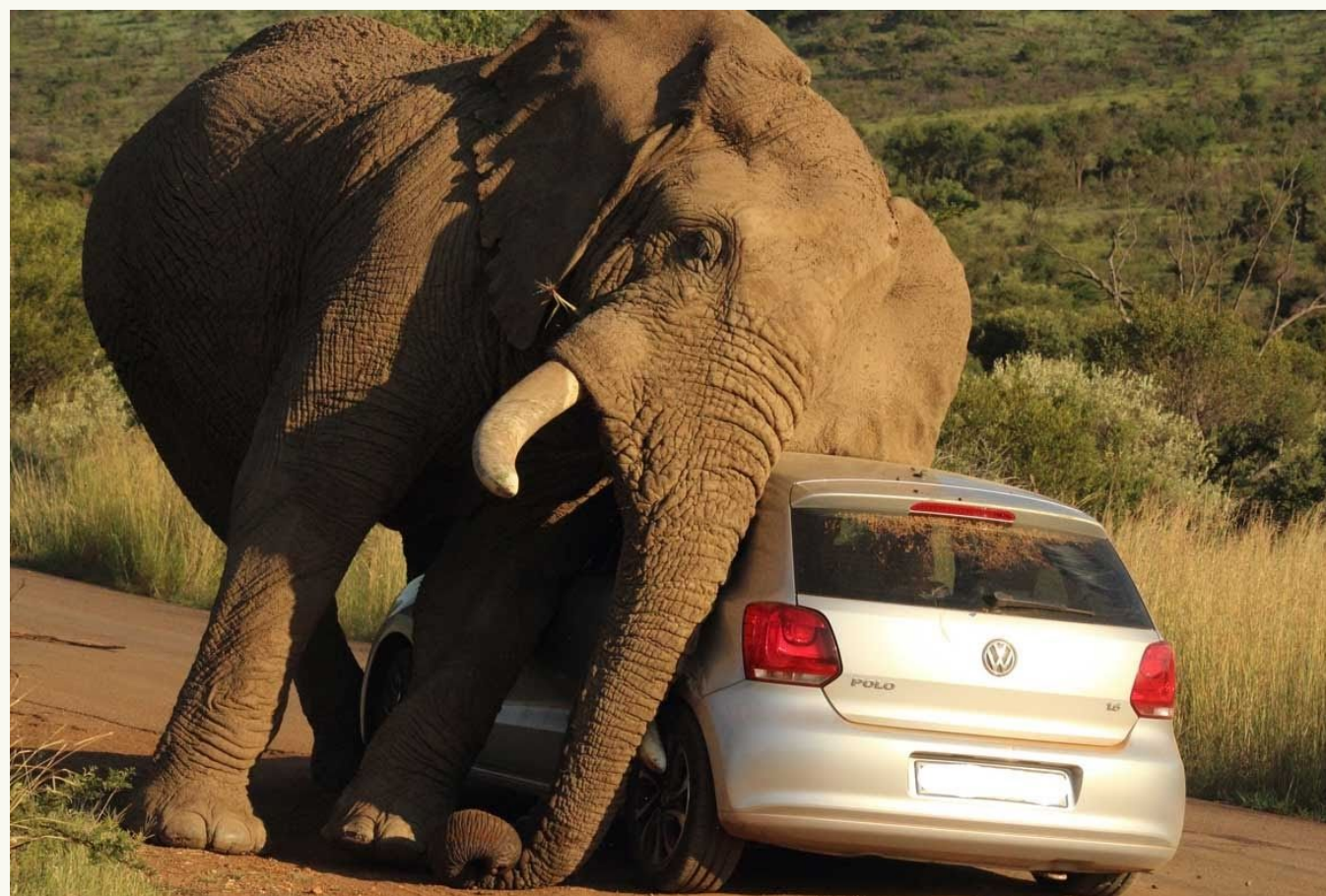




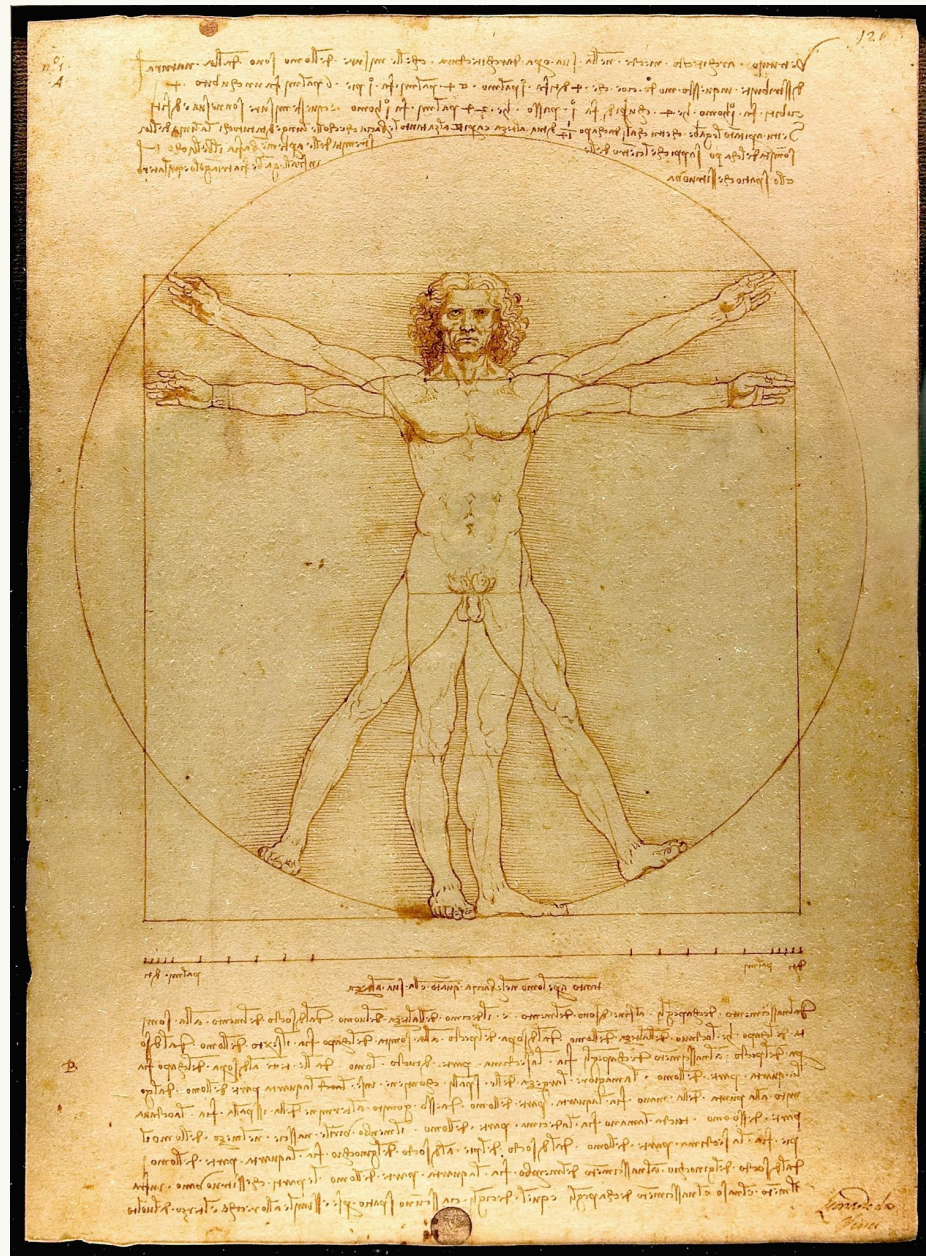
# You didn't load-test the platform



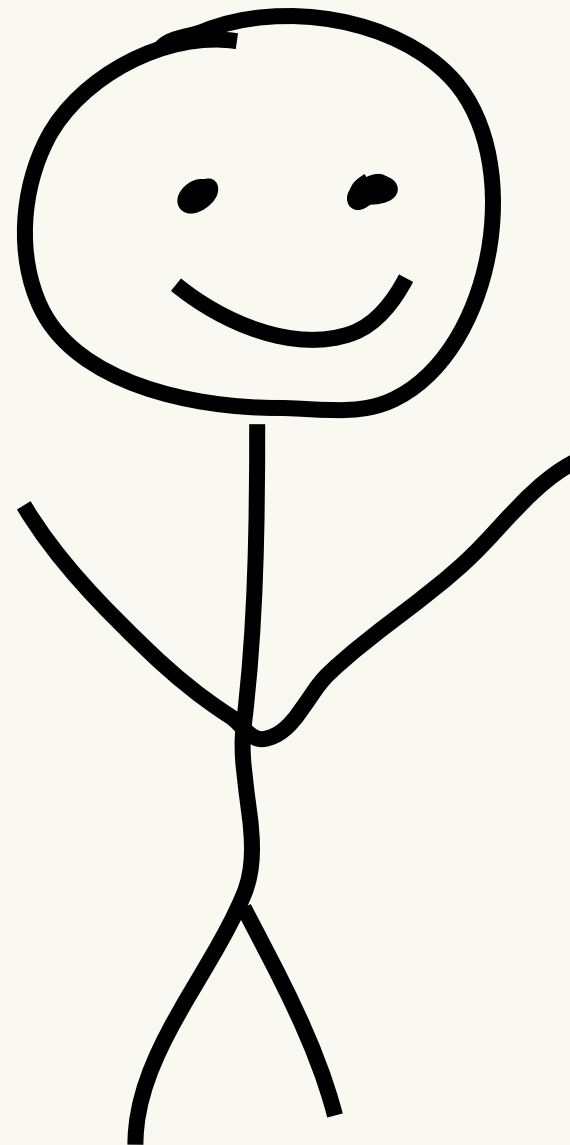
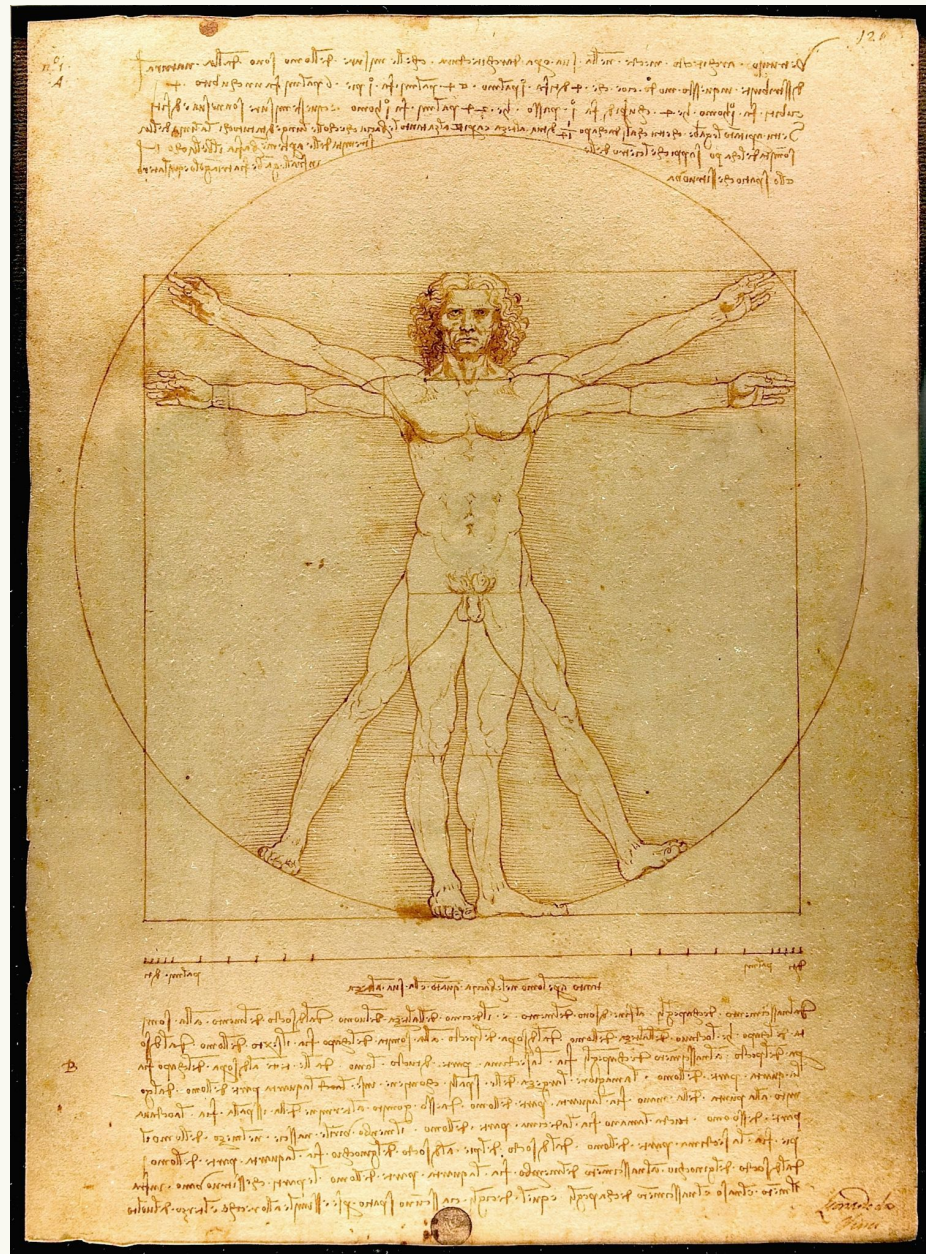
# You didn't load-test the platform













# STORY TIME



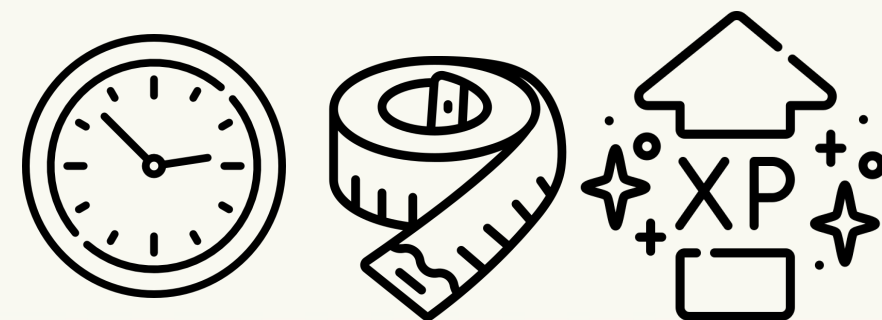




 ~~You didn't load-test the platform~~



**Stress test a production-ready environment.**





# You used too much polling





# You used too much polling



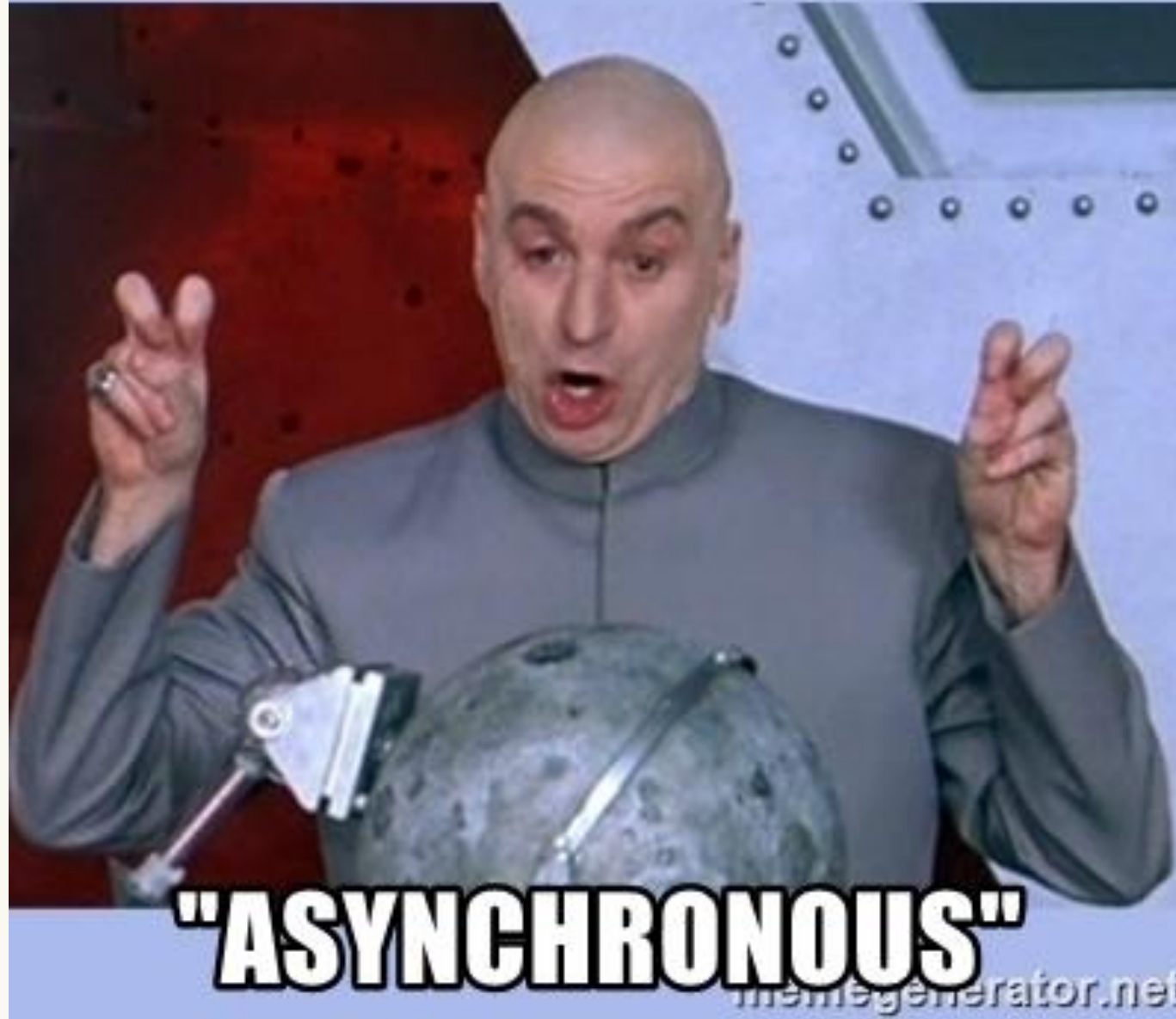
# STORY TIME



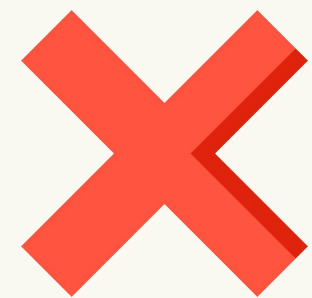




**OUR I/O SHALL BE**



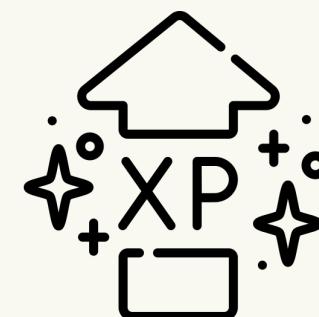
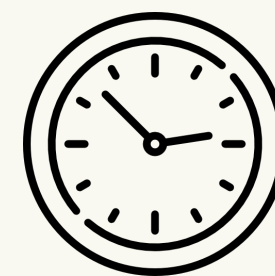




~~You used too much polling~~



**Prefer events and use a  
long-lived socket**





# You didn't shard the database



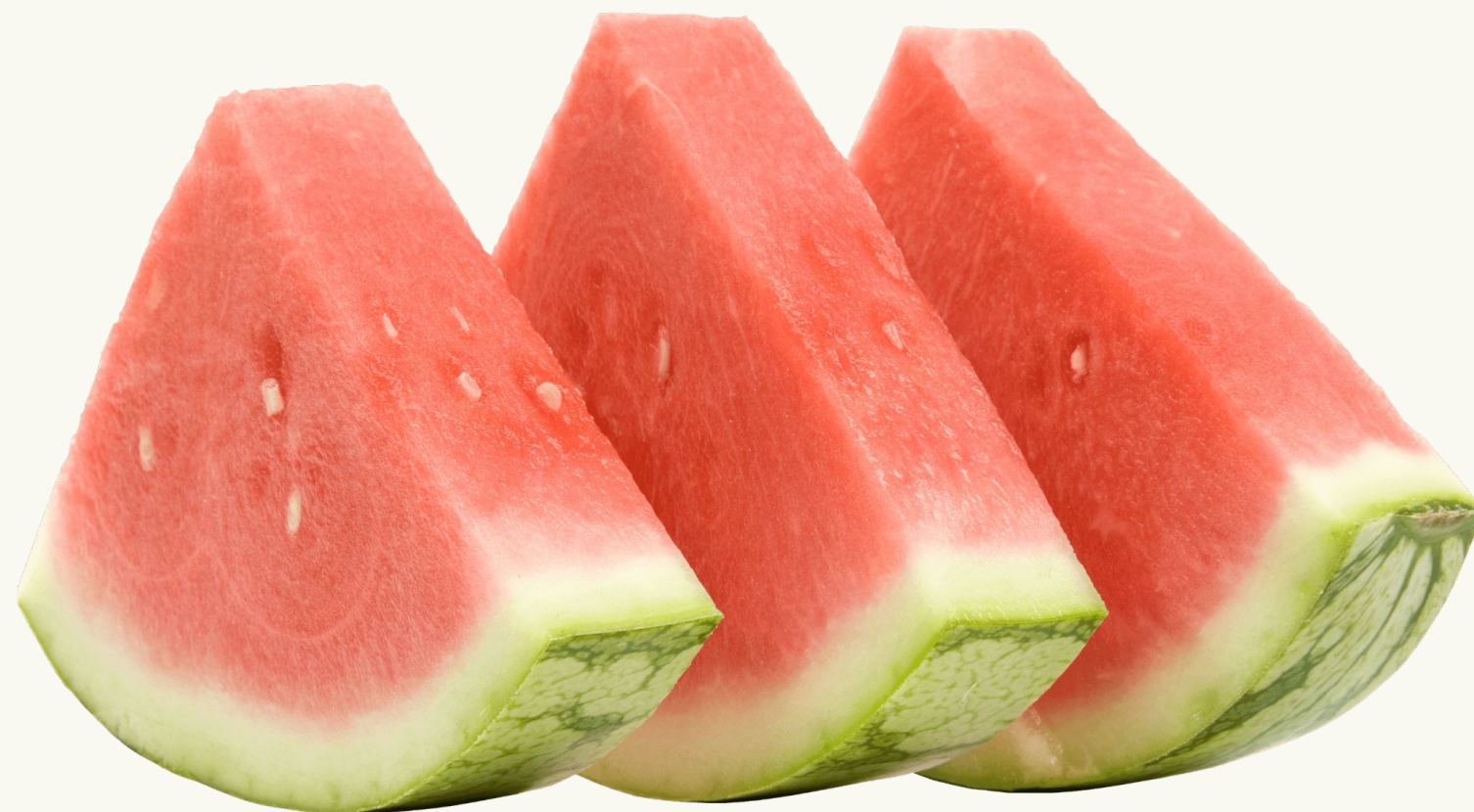


# You didn't shard the database







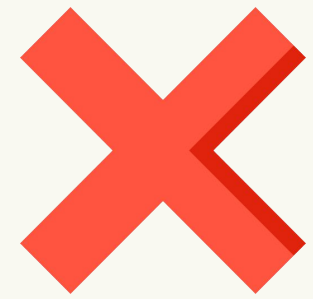




# STORY TIME



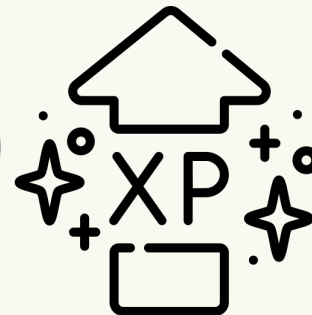
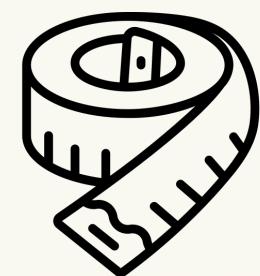
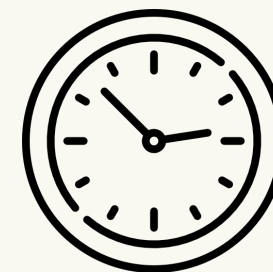




~~You didn't shard the database~~



**Unlock your scale by splitting  
up your data**





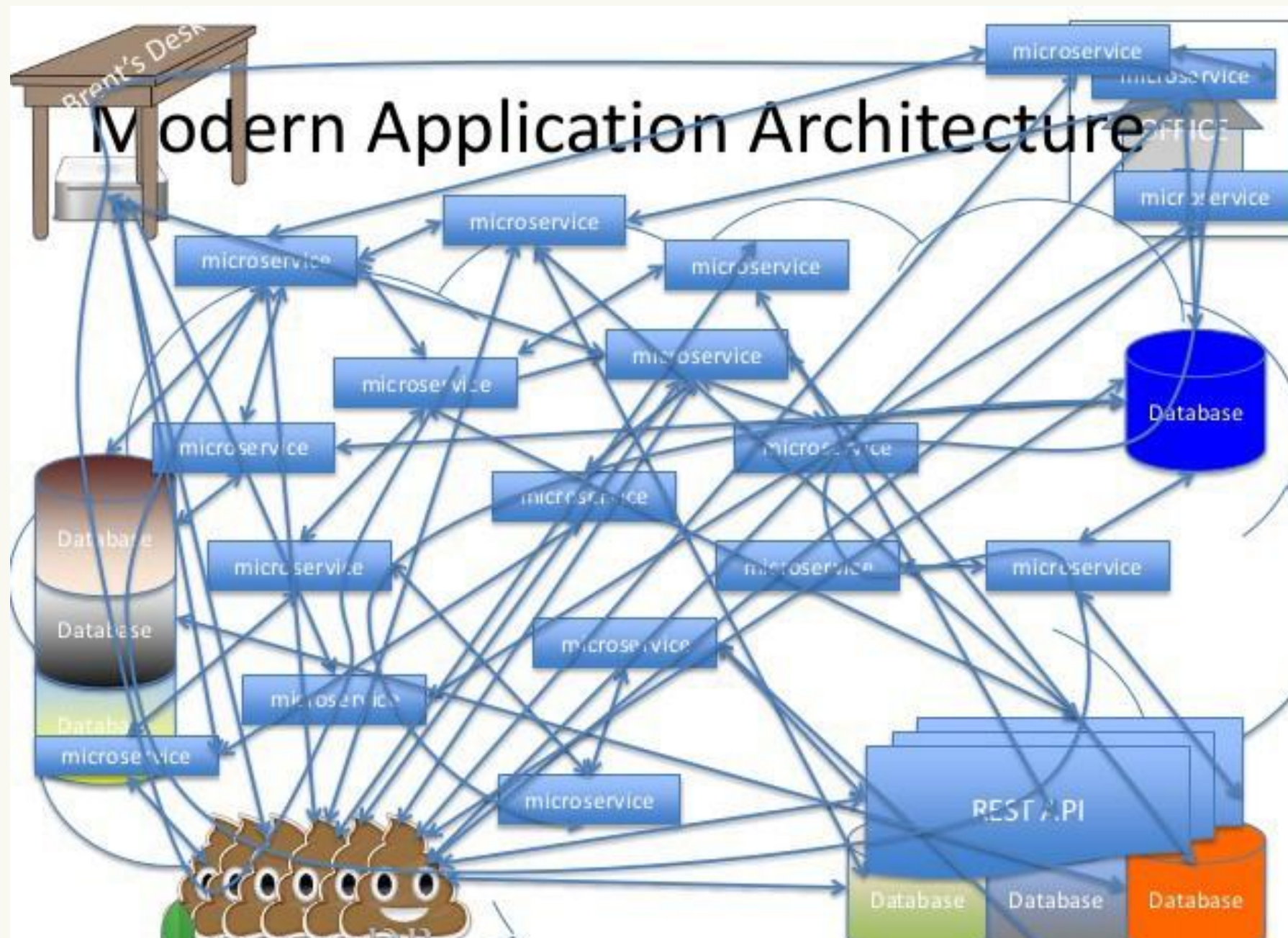
# You have too many microservices





# You have too many microservices









**Honest Update**  
@honest\_update



We replaced our monolith with micro services so that every outage could be more like a murder mystery.

4:10 PM · Oct 7, 2015 · Buffer

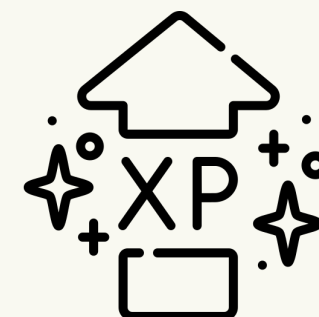
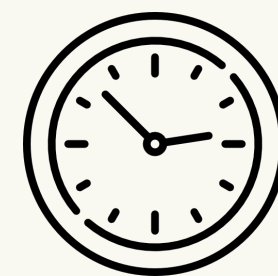
**2,906** Retweets   **73** Quote Tweets   **2,725** Likes





 ~~You have too many microservices~~

 Break up services by modeling dependencies







# You didn't cache your data



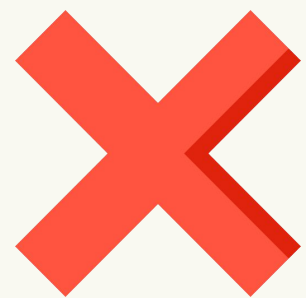
# You didn't cache your data





# STORY TIME

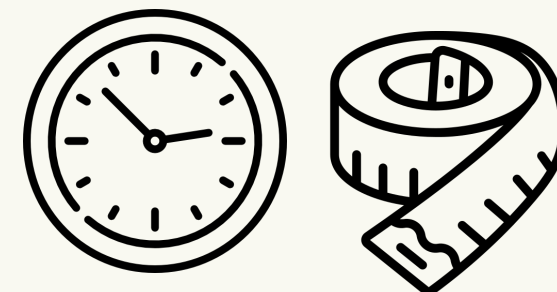




~~You didn't cache your data~~



**Protect the database**





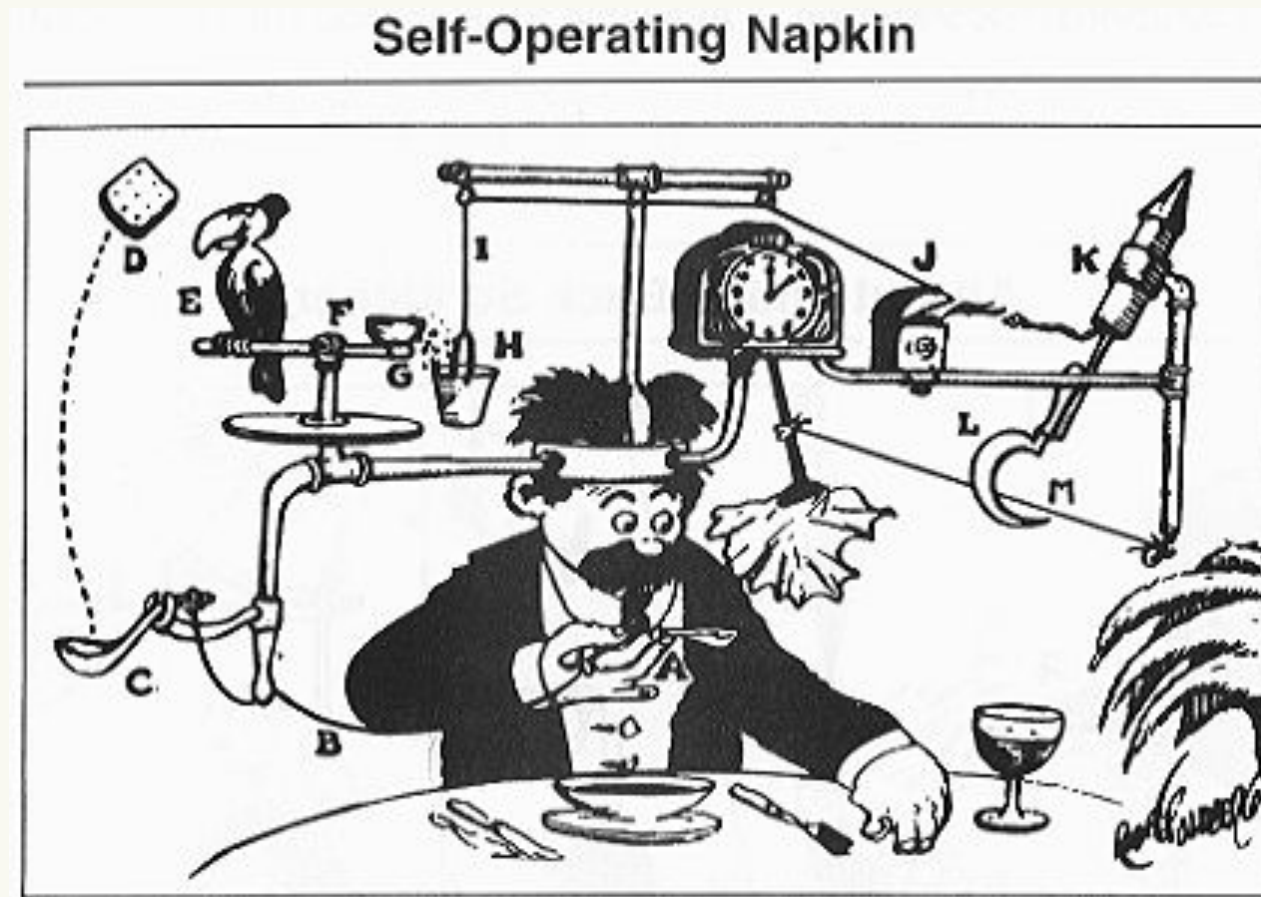


# You used too much caching

8



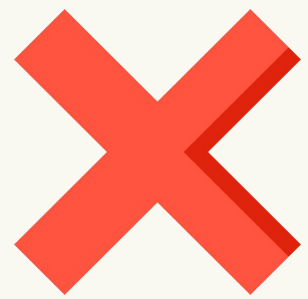
# You used too much caching





# STORY TIME

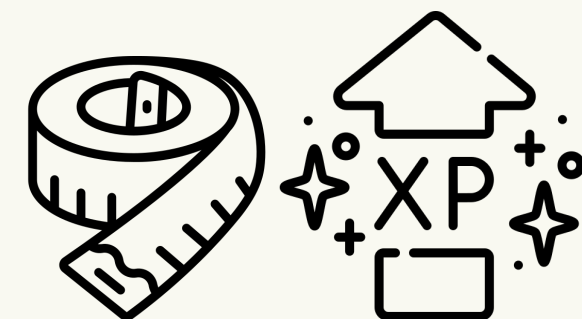




~~You used too much caching~~



**Measure and assess  
optimizations**







**You used the shiniest  
new technology**



**You used the shiniest  
new technology**







**Allen Holub**  
@allenholub



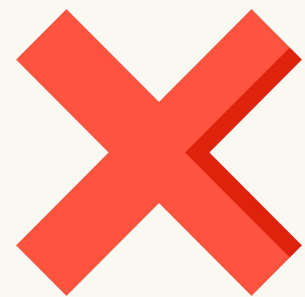
I've seen products delayed by months (or years) because somebody, early on, decided to jump on some tech bandwagon and the entire engineering org became diverted into wrestling with that tech instead of doing actual work. 1/3

2:08 PM · Nov 2, 2021 · chirr.app

# STORY TIME



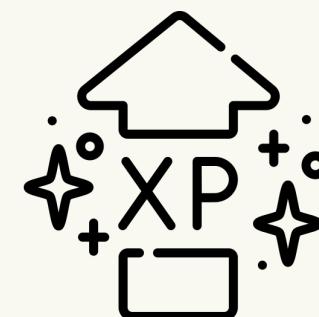
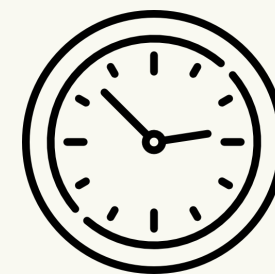




~~You used the shiniest  
new technology~~



Use something that  
has been proven at scale





**You implemented every  
feature twice**





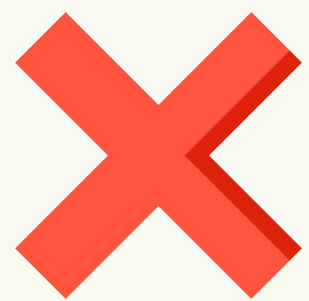
# You implemented every feature twice



# STORY TIME



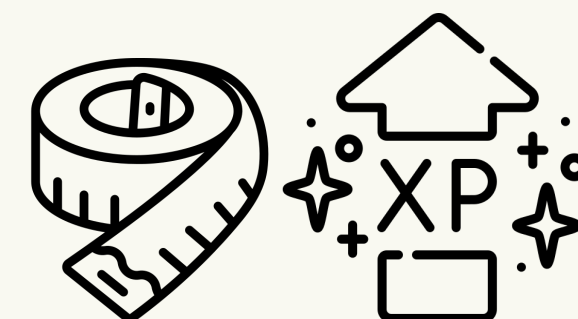




~~You implemented every  
feature twice~~



**Don't repeat yourself**







# 10 Ways to *not* Crash Your Server on Launch Day



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# 10 Ways *Not* to Crash Your Server

**1** Build a login queue...



# 10 Ways *Not* to Crash Your Server



- 1 Build a login queue...
- 2 ...the right way.

# 10 Ways *Not* to Crash Your Server

- 1 Build a login queue...
- 2 ...the right way.
- 3 **Prove your scale with load tests.**



# 10 Ways *Not* to Crash Your Server

- 1 Build a login queue...
- 2 ...the right way.
- 3 Prove your scale with load tests.
- 4 Use long-lived sockets & async patterns.**

# 10 Ways *Not* to Crash Your Server

- 1 Build login queues...
- 2 ...the right way.
- 3 Prove your scale with load tests.
- 4 Use long-lived sockets & async patterns.
- 5 Shard your database.**

# 10 Ways *Not* to Crash Your Server

- 1 Build a login queue...
- 2 ...the right way.
- 3 Prove your scale with load tests.
- 4 Use long-lived sockets & async patterns.
- 5 Shard your database.
- 6 Break your platform up into services (just the regular kind).**



# 10 Ways *Not* to Crash Your Server

- 1 Build a login queue...
- 2 ...the right way.
- 3 Prove your scale with load tests.
- 4 Use long-lived sockets & async patterns.
- 5 Shard your database.
- 6 Break your platform up into services (just the regular kind).
- 7 Use caching...**

# 10 Ways *Not* to Crash Your Server

- 1 Build a login queue...
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- 3 Prove your scale with load tests.
- 4 Use long-lived sockets & async patterns.
- 5 Shard your database.
- 6 Break your platform up into services (just the regular kind).
- 7 Use caching...
- 8 **wisely.**

# 10 Ways *Not* to Crash Your Server

- 1 Build a login queue...
- 2 ...the right way.
- 3 Prove your scale with load tests.
- 4 Use long-lived sockets & async patterns.
- 5 Shard your database.
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- 7 Use caching...
- 8 wisely.
- 9 Use proven, reliable tools.**



# 10 Ways *Not* to Crash Your Server

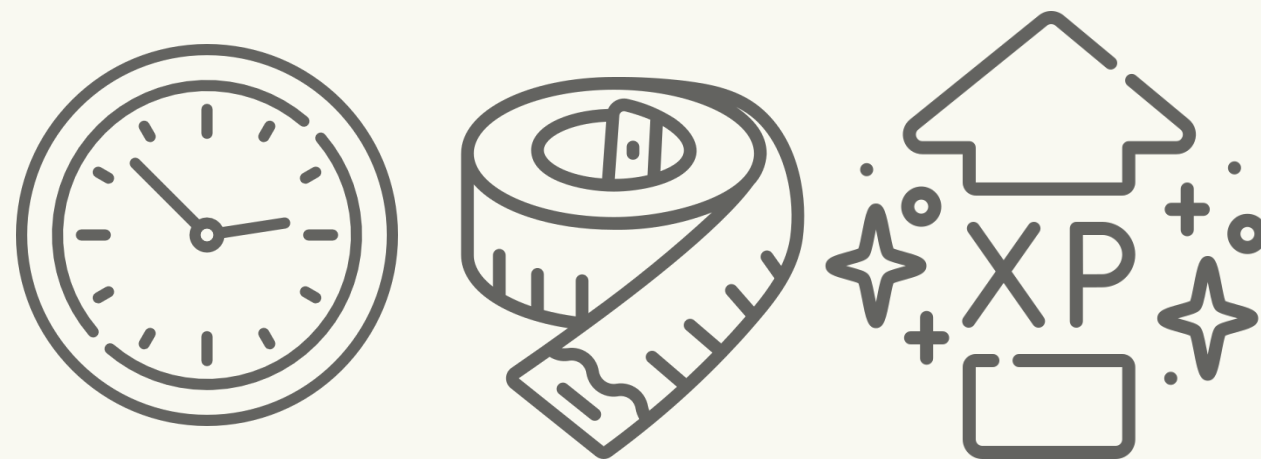
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- 9 Use proven, reliable tools.
- 10 Don't repeat yourself.**

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- 6 Break your platform up into services (just the regular kind).
- 7 Use caching...
- 8 wisely.
- 9 Use proven, reliable tools.
- 10 Don't repeat yourself.
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# Questions?



info@pragma.gg  
<https://pragma.gg>