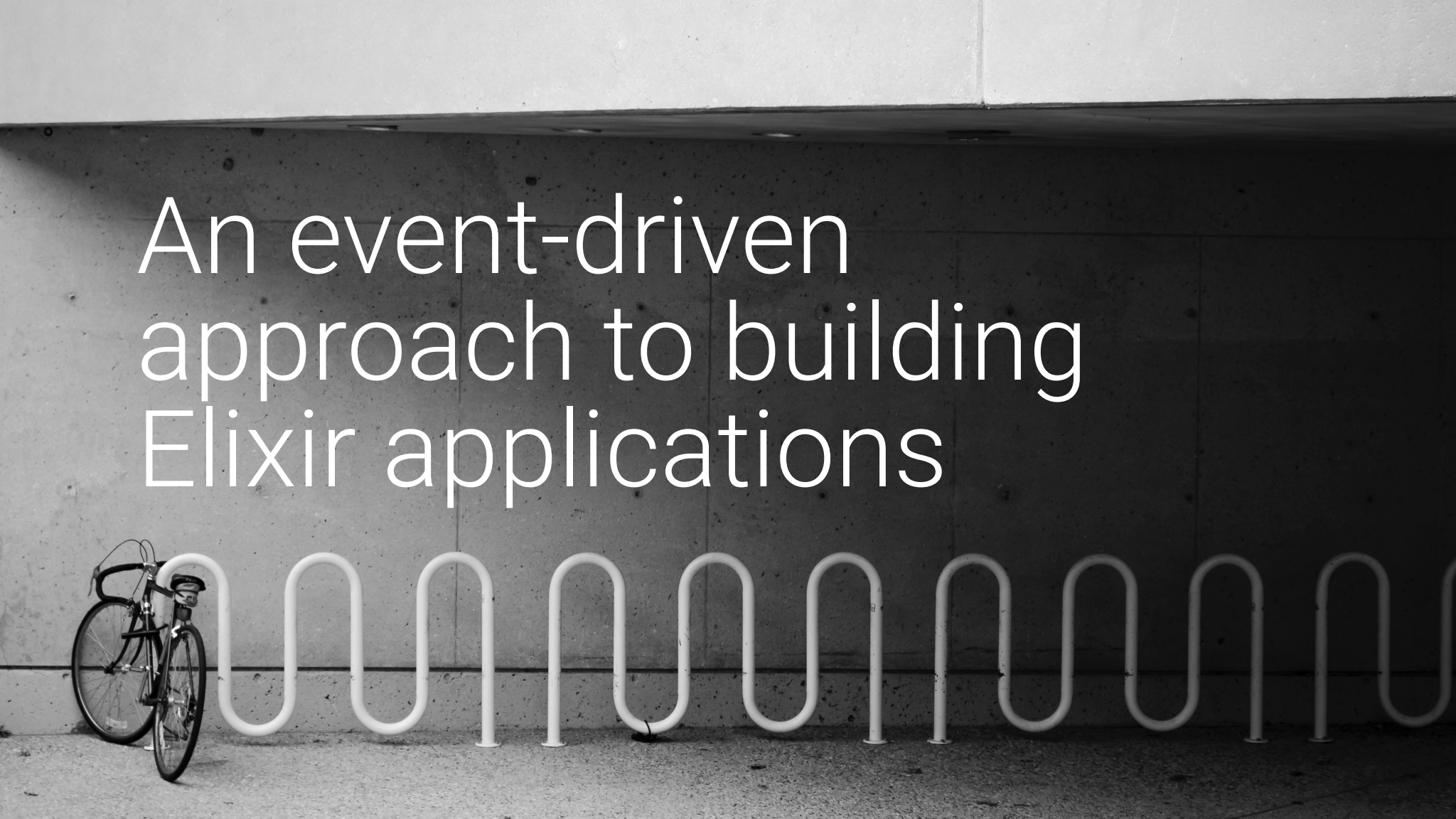
An event-driven approach to building Elixir applications



Let's start by introducing the application

STRAVA

Log In

The #1 app for runners and cyclists

Sign up with Facebook

Sign up with Google

or

Use my email

By signing up for Strava, you agree to the Terms of Service. View our Privacy Policy.

Already a Member? Log In

STRAVA

Ride 2,019 miles in 2019

Hosted by Segment Challenge

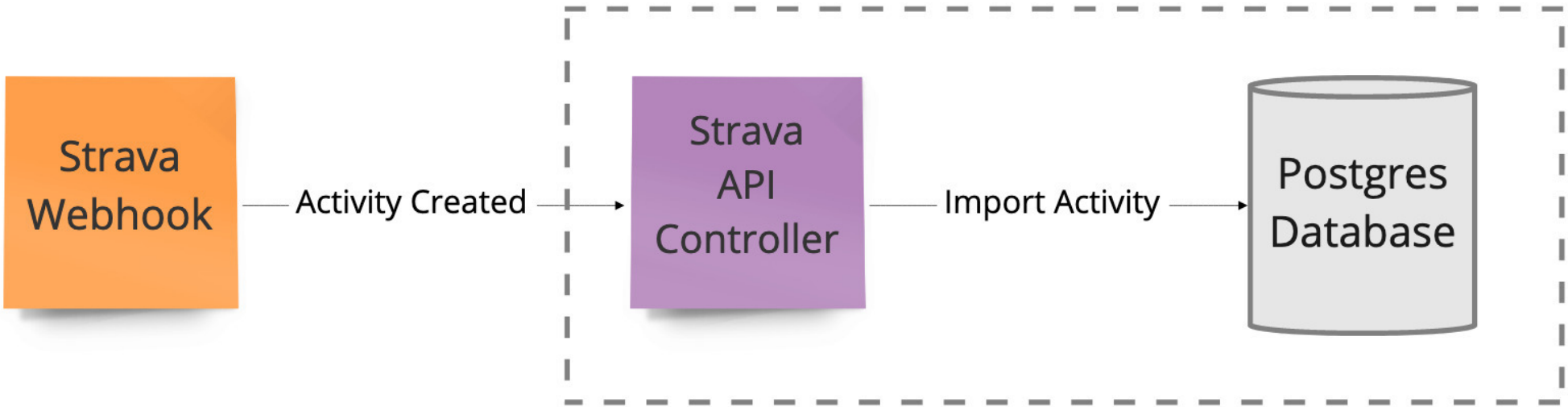
Join challenge

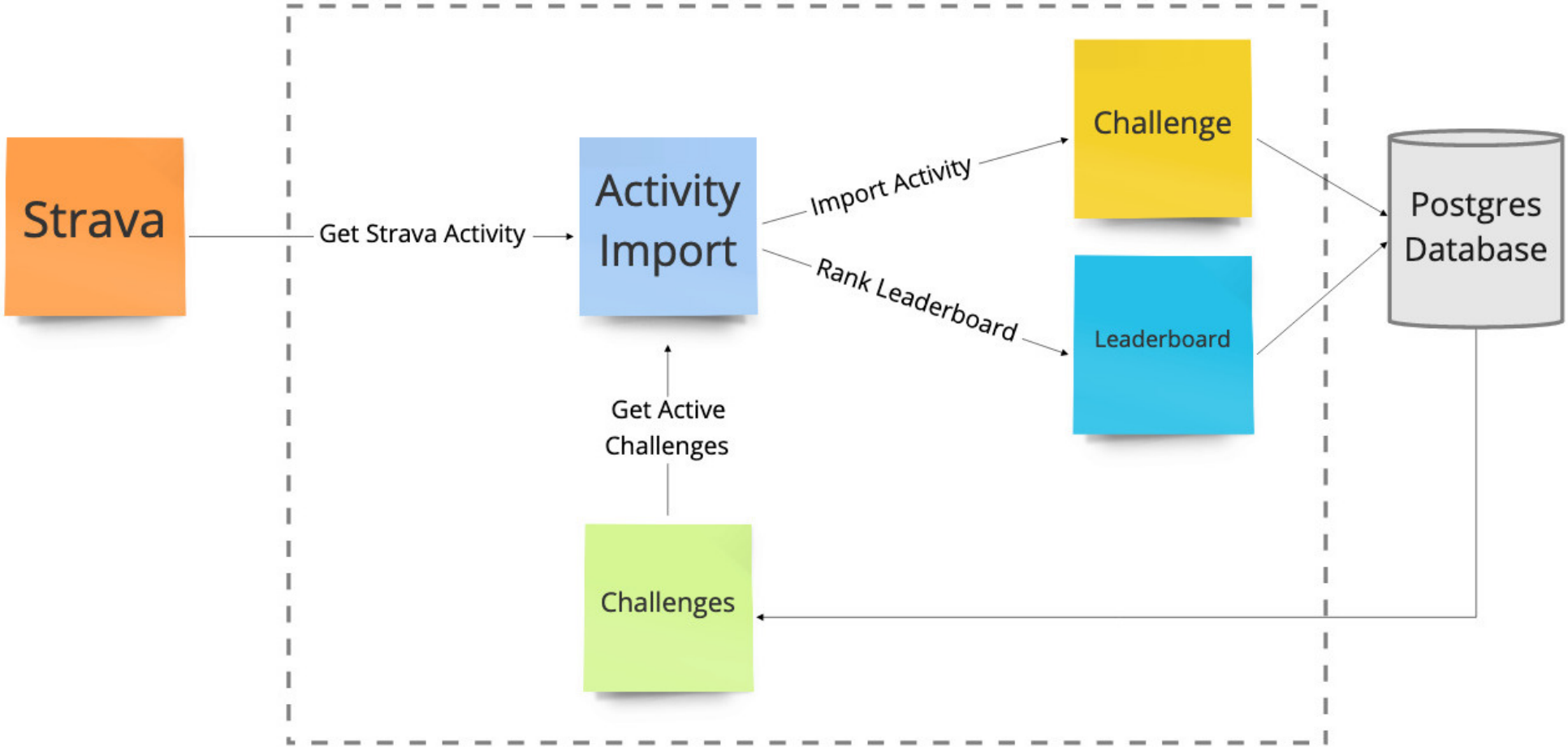
January 1, 2019 — December 31, 2019

About Activity Leaderboards

Overall Men | Overall Women

Rank	Name	Distance	Duration	Elevation	Progress		Activities
1	Tathagat Chatterjee CNG	**2009.6**	6d 4h 37m 28s	68577.6		100%	98
2	Utkarsh Verma	**1787.3**	6d 7h 19m 40s	60196.1		89%	130
3	Aaran Daniells	**431.1**	1d 4h 25m 5s	20676.6		21%	85
4	Robby Norwood	**407.4**	23h 13m 8s	17409.9		20%	12
5	Darran Cowell CCR	**398.8**	1d 4h 50m 51s	16063.1		20%	20
6	Ben Smith (VCV)	**94.4**	6h 13m 18s	6922.5		5%	5
7	Zenek Grychtoł	**72.9**	6h 46m 4s	3004.2		4%	3


Strava
Webhook
Activity Created
Strava
API
Controller
Import Activity
Postgres
Database


Strava
Get Strava Activity
Activity Import
Import Activity
Challenge
Rank Leaderboard
Leaderboard
Postgres Database
Get Active Challenges
Challenges

SEGMENT CHALLENGE

Sorry, you've lost 8th place

You just lost 1 place on Stage 2 VCV Sleepers Hill.

You are now in 9th place.

There are **32 hours left** to attempt the stage before it ends. So get out there, ride hard and try again.

— Segment Challenge

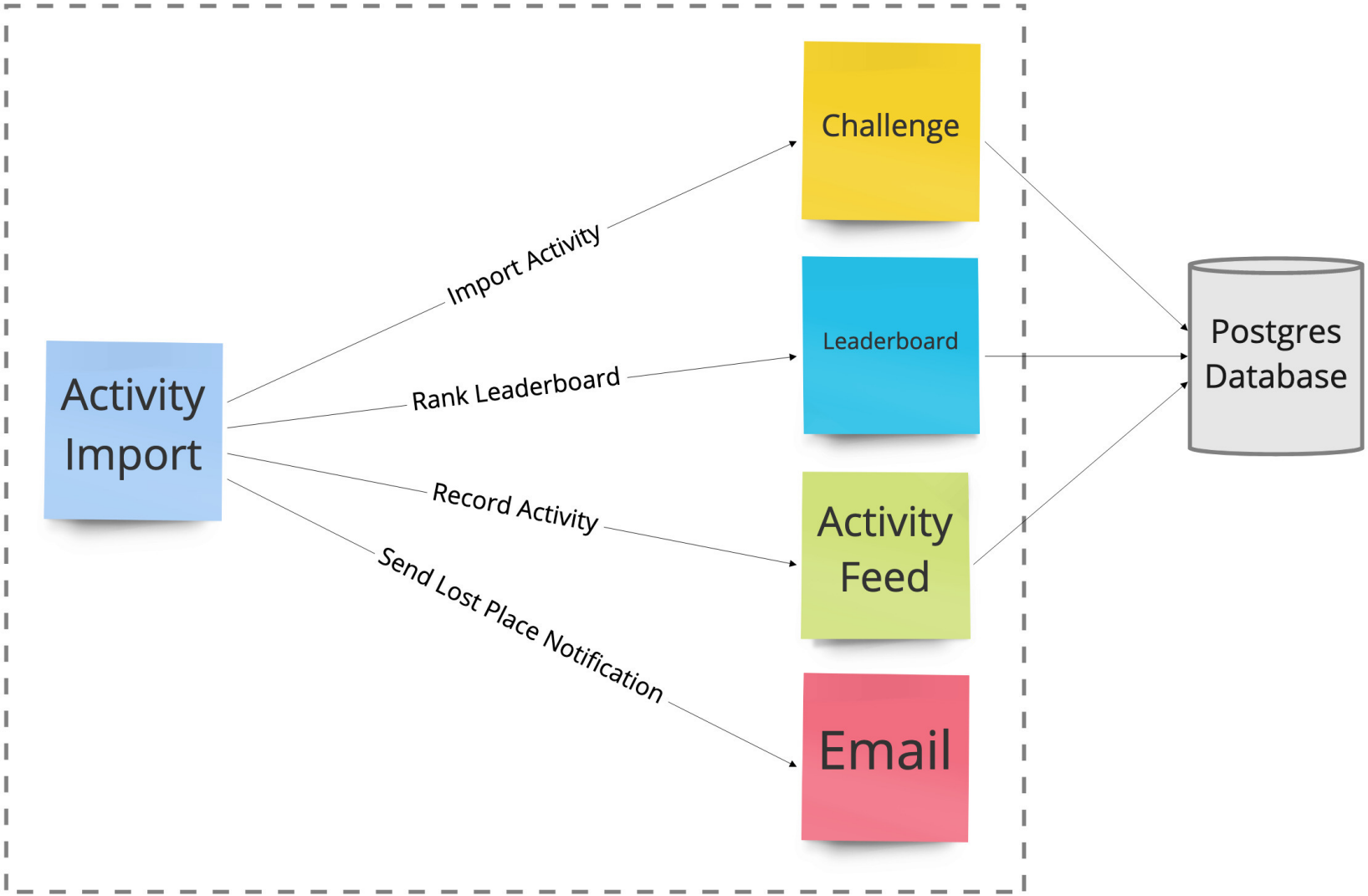
You received this message because you are a

Unsubscribe from notification emails when some

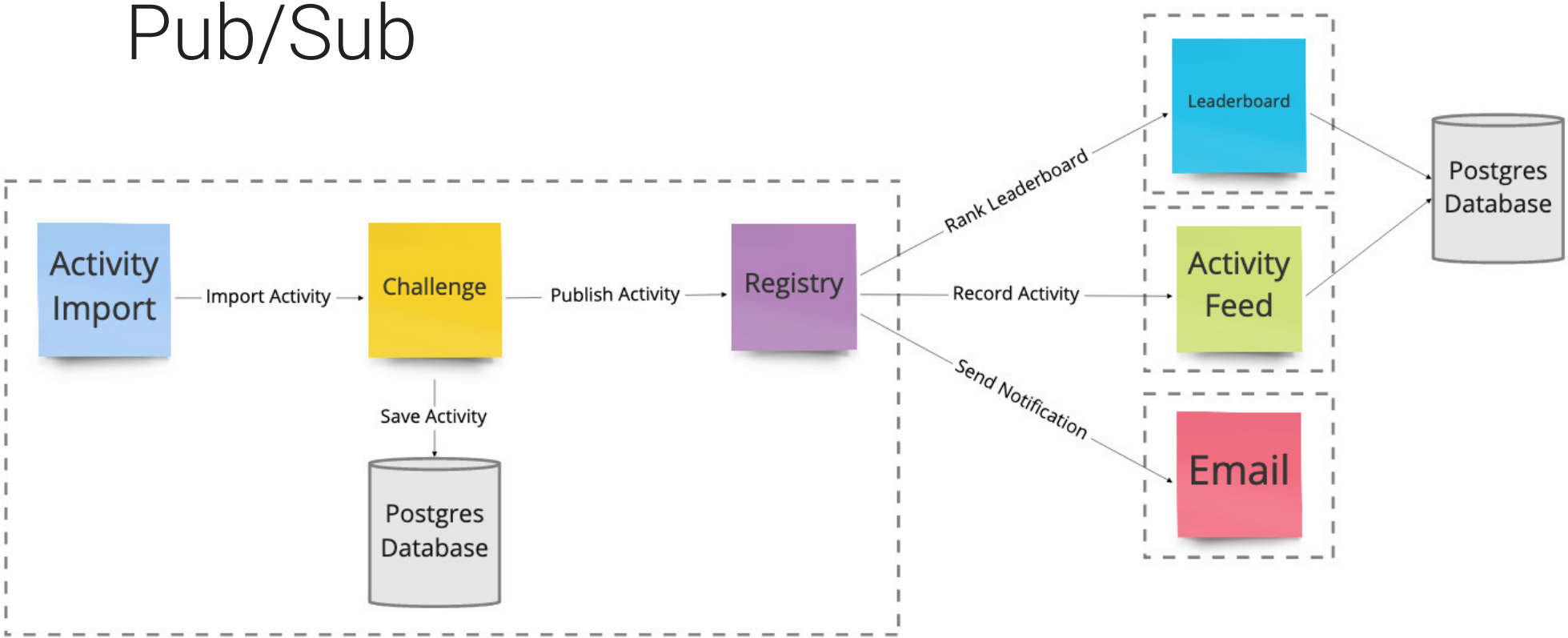
Ben Smith (VCV)

Recorded an attempt at stage VCV Sleepers Hill of **3:19**

February 28, 2019 at 9:53am


Activity Import
Import Activity
Rank Leaderboard
Record Activity
Send Lost Place Notification
Challenge
Leaderboard
Activity Feed
Email
Postgres Database

Pub/Sub


Activity Import
Import Activity
Challenge
Save Activity
Postgres Database
Publish Activity
Registry
Rank Leaderboard
Record Activity
Send Notification
Leaderboard
Activity Feed
Email
Postgres Database

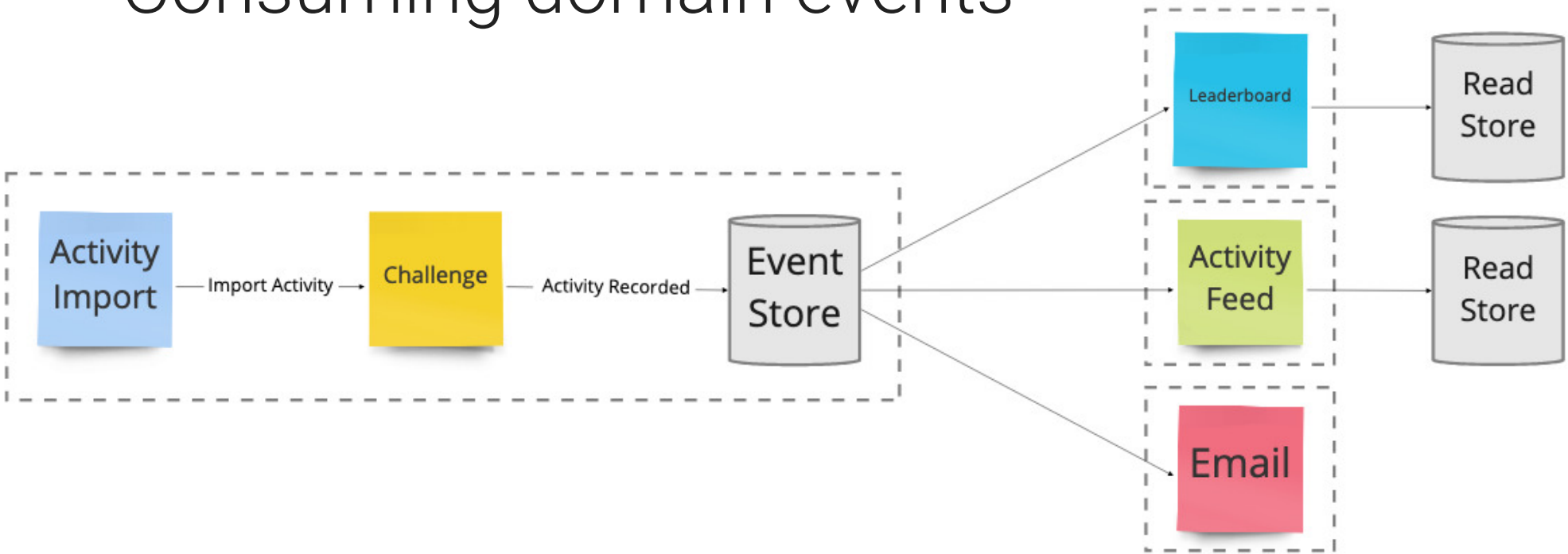
Using domain events as the source of truth

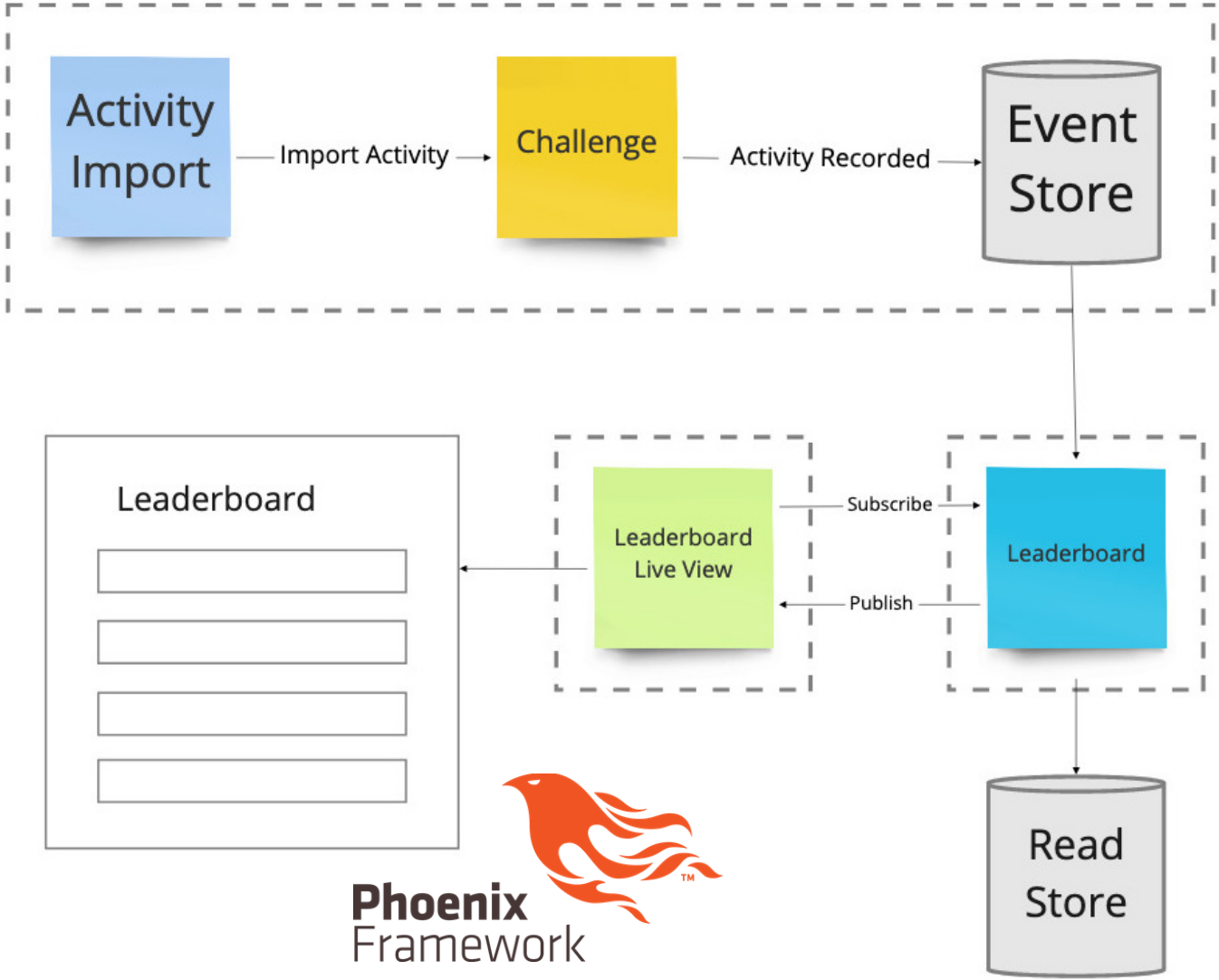
Domain event

- Record of something that took place in the domain
- An immutable, historical *fact*
- Named in the past tense using the language of the business
- Examples:
  - Challenge Started
  - Competitor Joined
  - Activity Recorded
  - Leaderboard Ranked

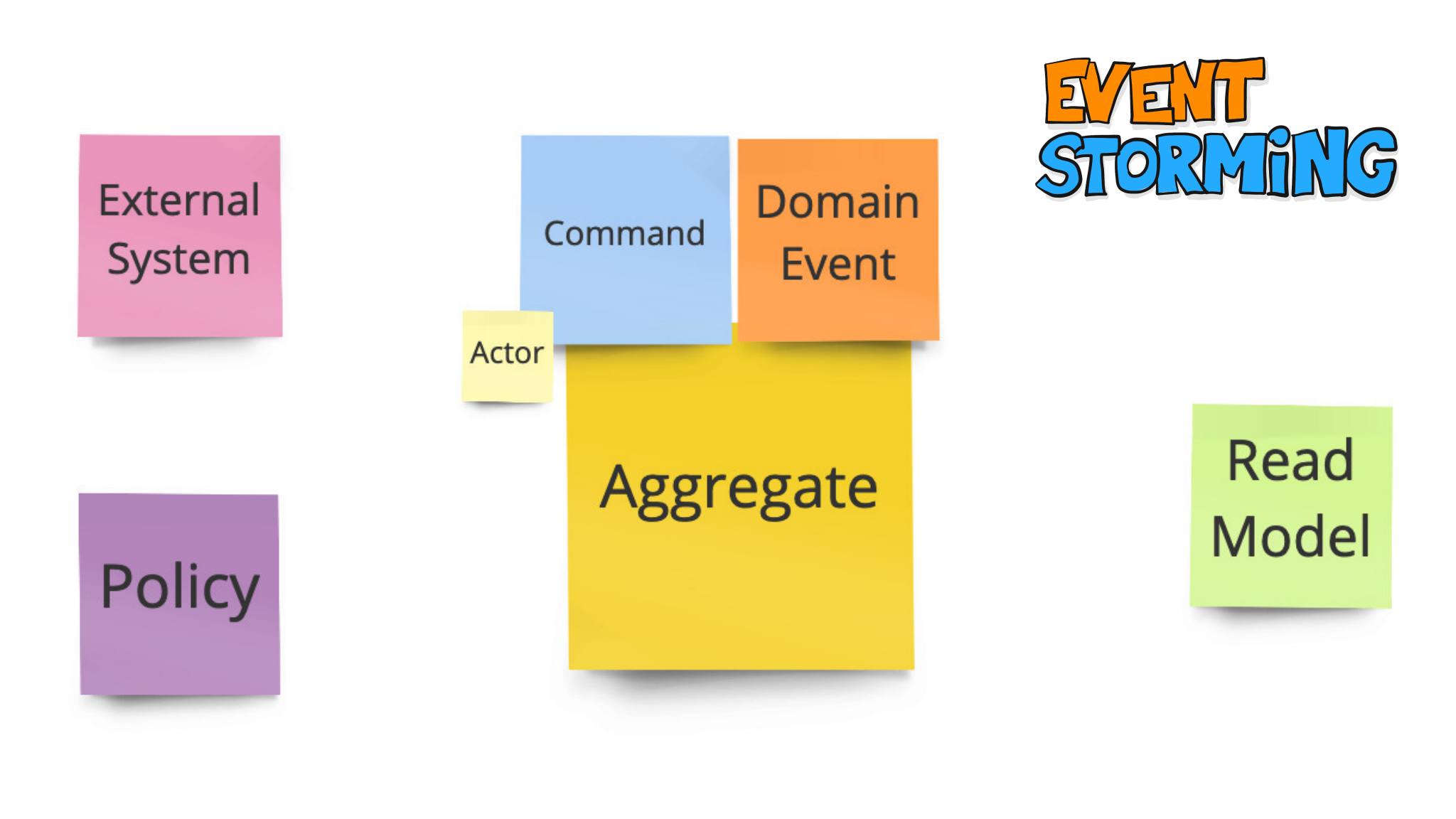
Recording domain events

Consuming domain events

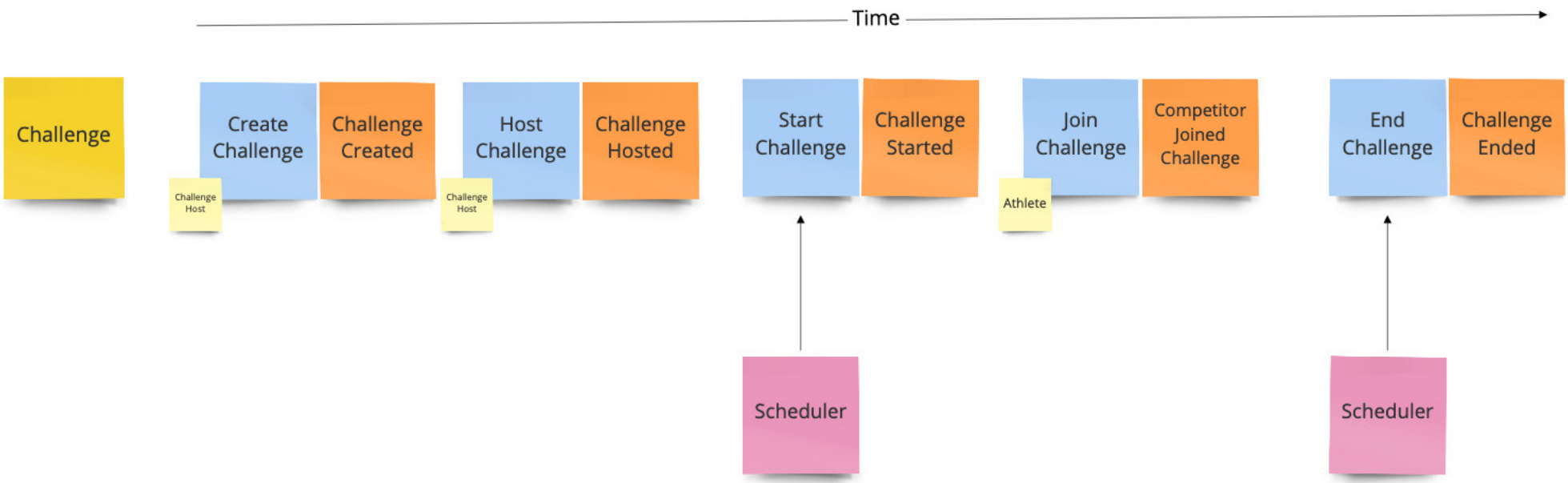


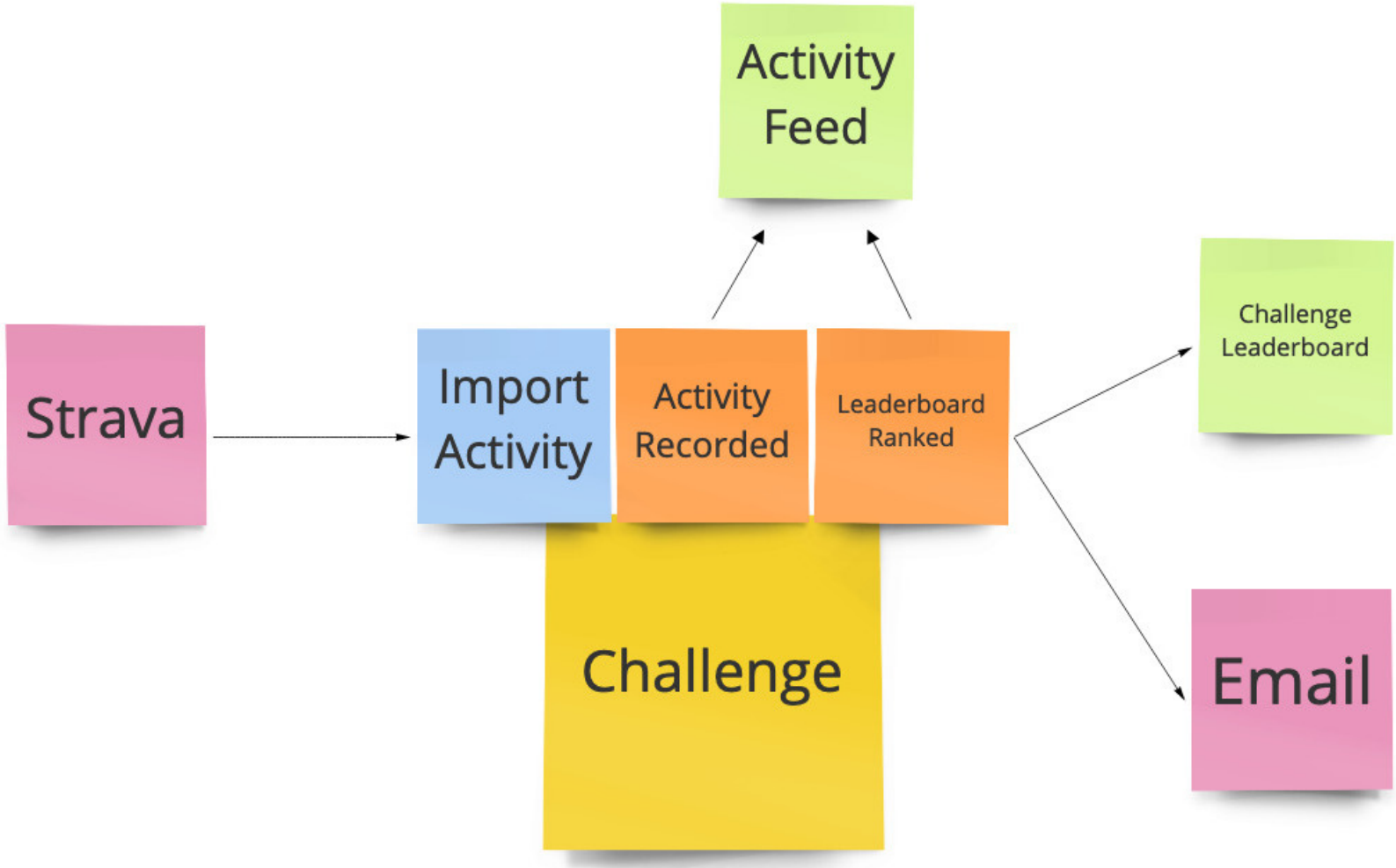

Activity Import
Import Activity
Challenge
Activity Recorded
Event Store
Leaderboard
Leaderboard Live View
Subscribe
Publish
Leaderboard
Read Store
Phoenix Framework

How do I design using events?

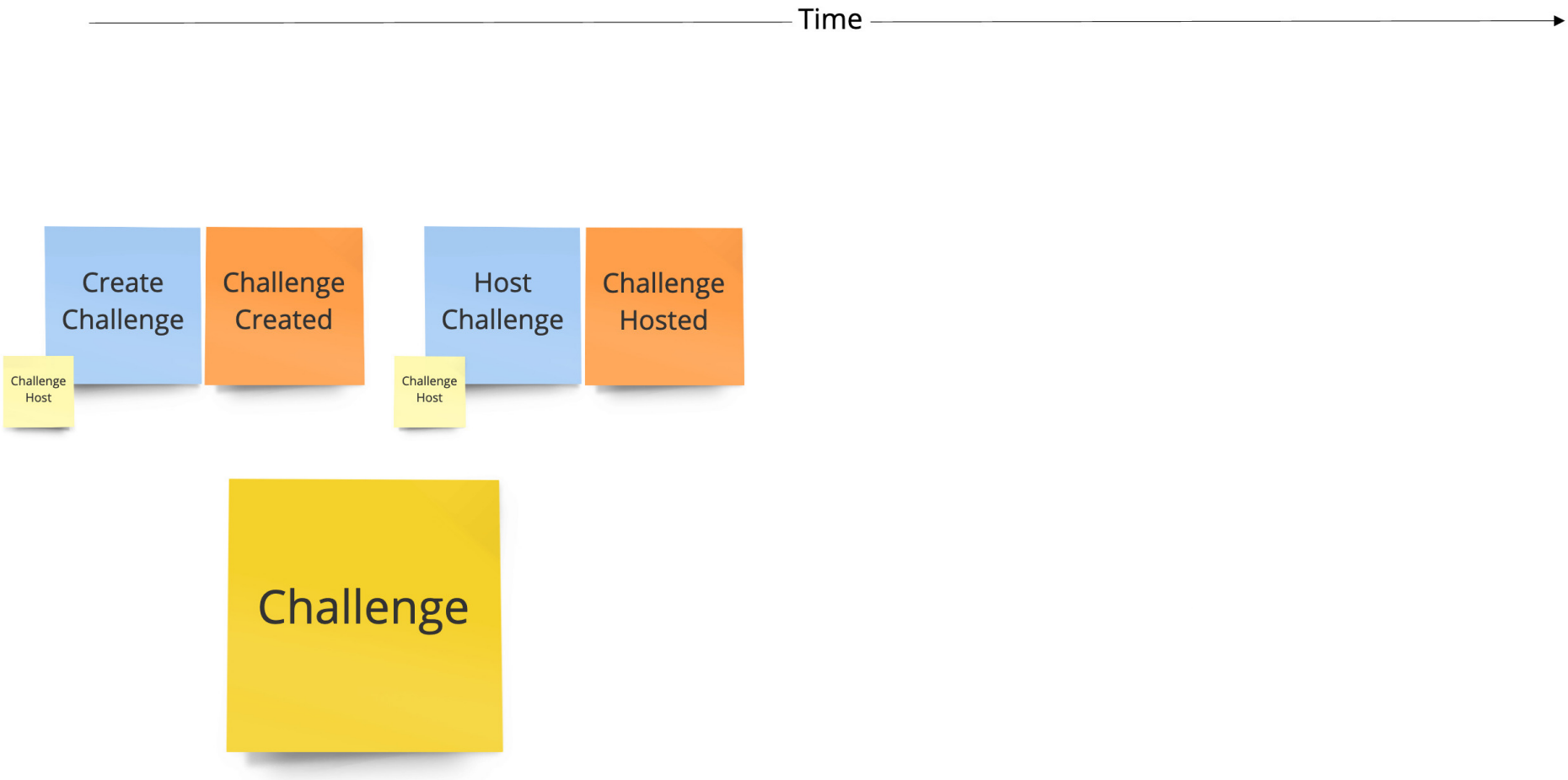

EVENT STORMING
External System
Command
Domain Event
Actor
Aggregate
Read Model
Policy

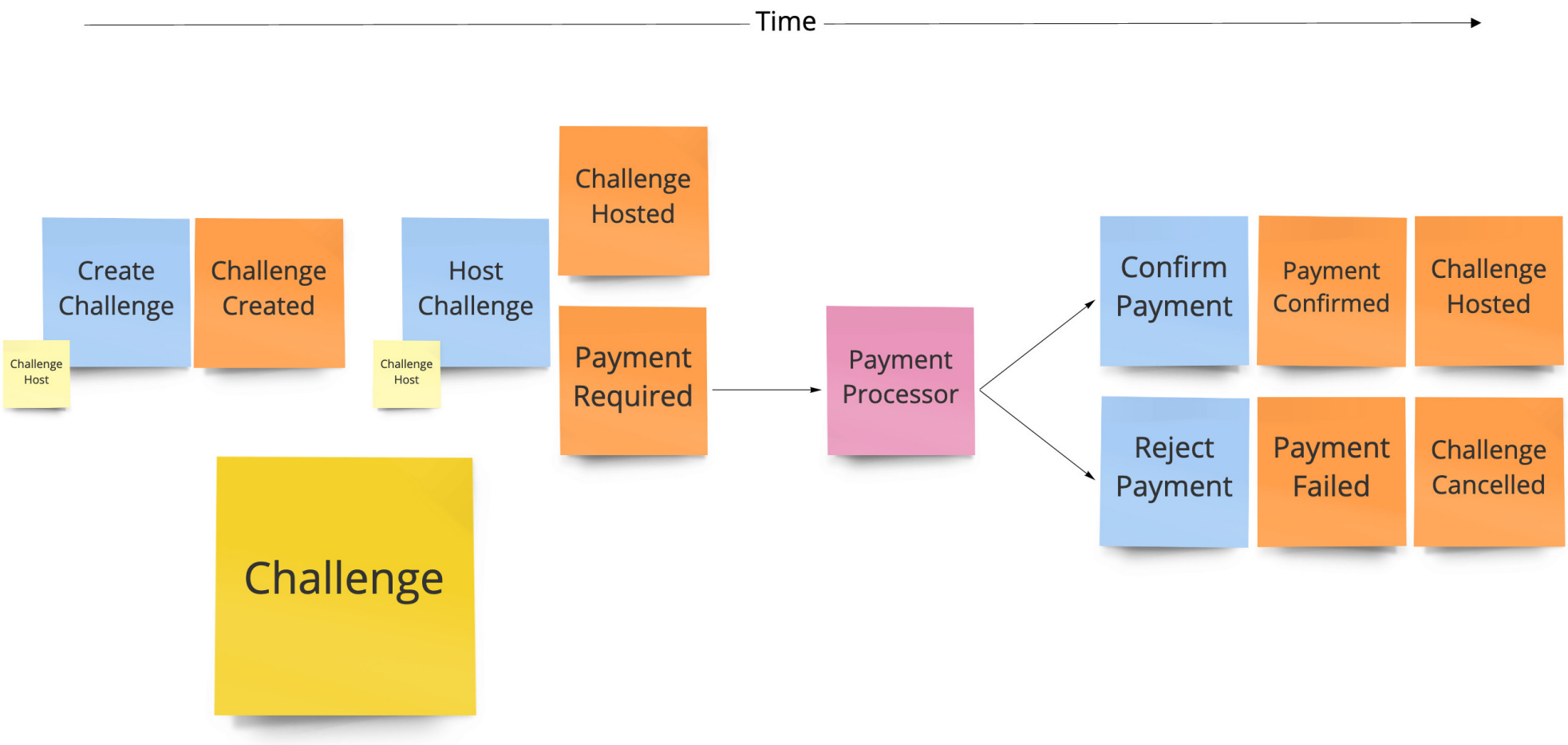
Challenge lifecycle



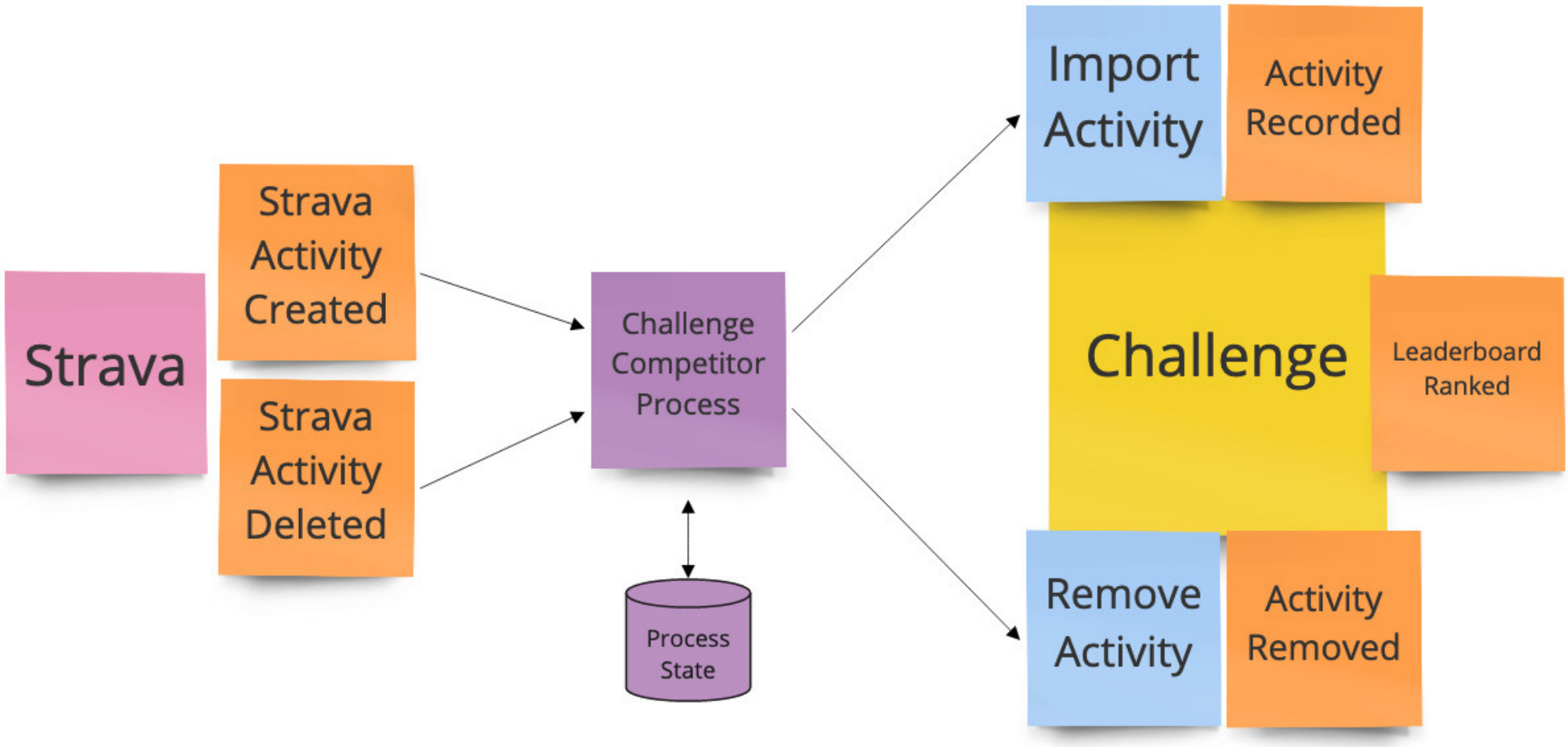

Activity Feed
Strava
Import Activity
Activity Recorded
Leaderboard Ranked
Challenge Leaderboard
Challenge
Email

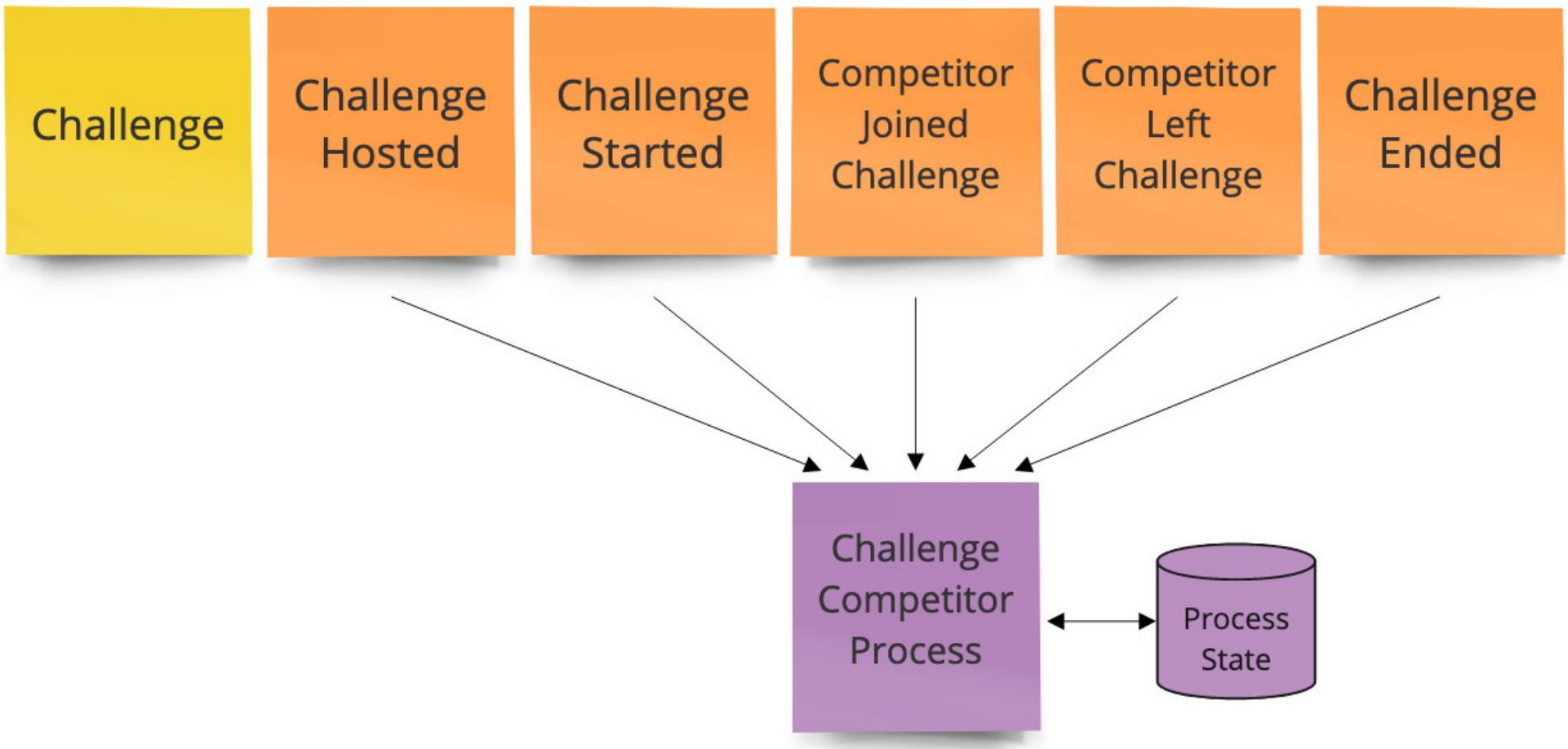
What about changing requirements?

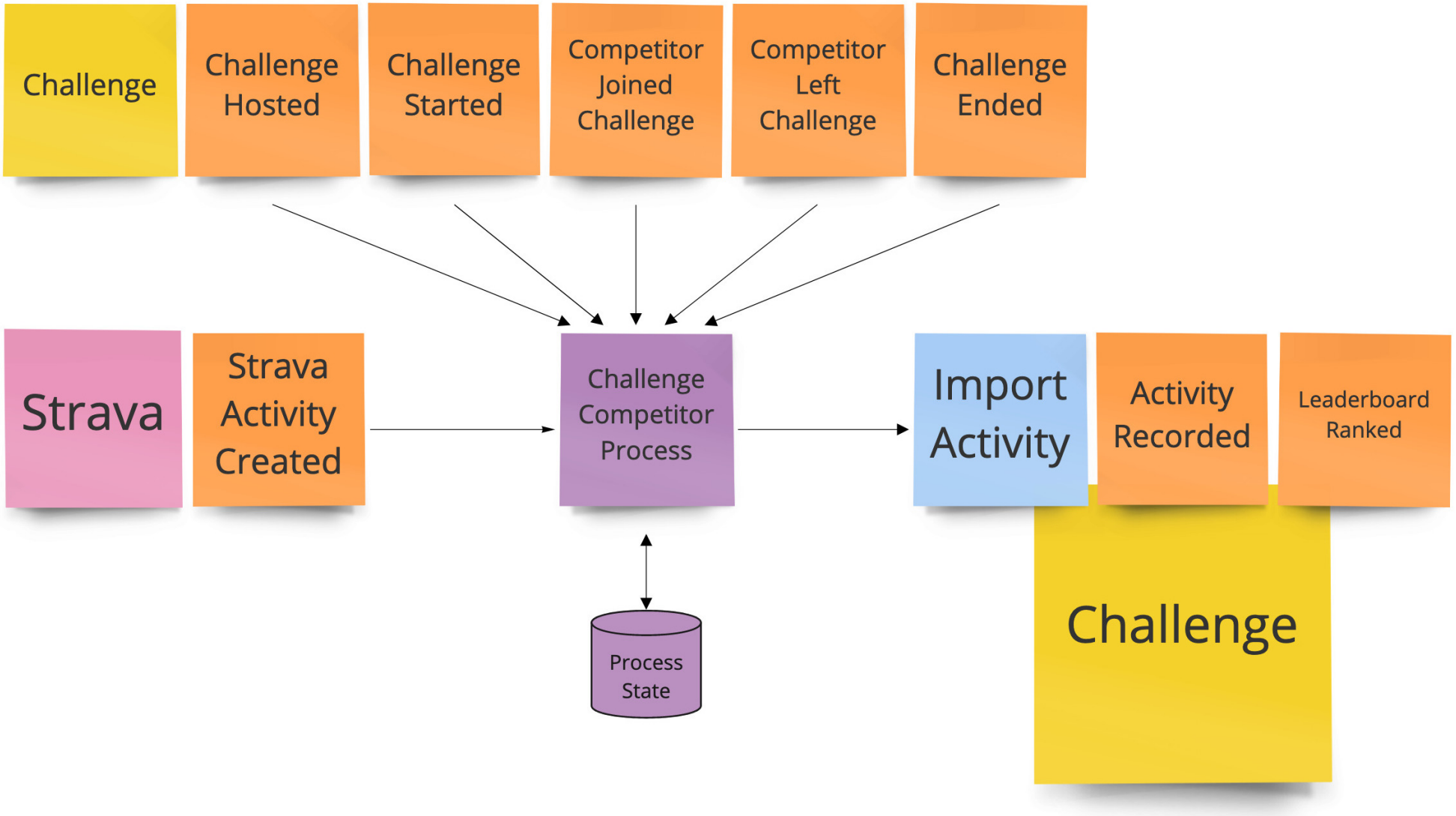

Time
Create Challenge
Challenge Created
Challenge Host
Host Challenge
Challenge Hosted
Challenge Host
Challenge


Time
Create Challenge
Challenge Created
Challenge Host
Host Challenge
Challenge Host
Challenge Hosted
Payment Required
Payment Processor
Confirm Payment
Payment Confirmed
Challenge Hosted
Reject Payment
Payment Failed
Challenge Cancelled
Challenge

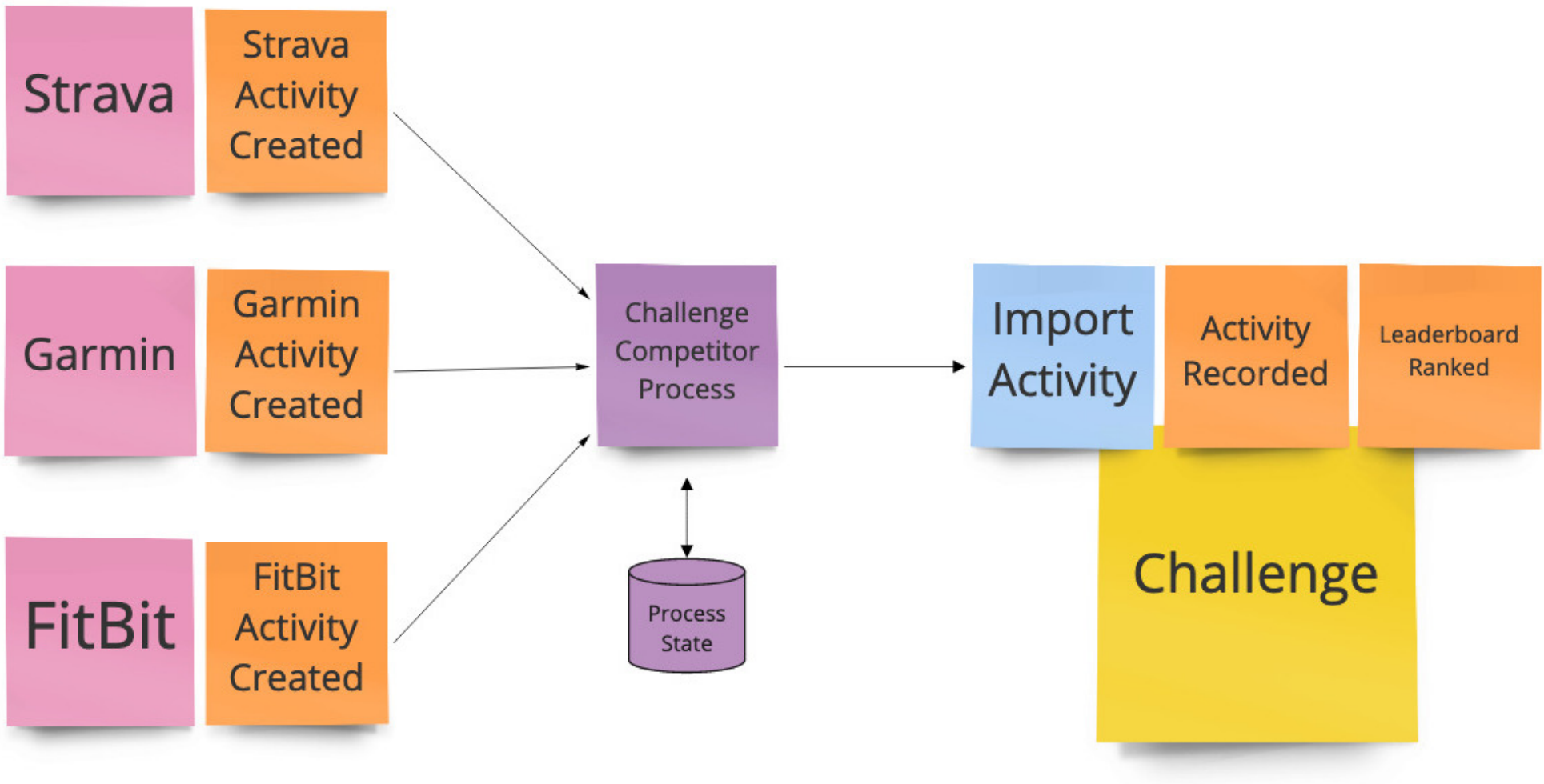
Dealing with external events


Strava
Strava Activity Created
Strava Activity Deleted
Challenge Competitor Process
Process State
Import Activity
Activity Recorded
Challenge
Leaderboard Ranked
Remove Activity
Activity Removed


Challenge
Challenge Hosted
Challenge Started
Competitor Joined Challenge
Competitor Left Challenge
Challenge Ended
Challenge Competitor Process
Process State


Challenge
Challenge Hosted
Challenge Started
Competitor Joined Challenge
Competitor Left Challenge
Challenge Ended
Strava
Strava Activity Created
Challenge Competitor Process
Import Activity
Activity Recorded
Leaderboard Ranked
Process State
Challenge

Extending third party providers


Strava
Strava Activity Created
Garmin
Garmin Activity Created
FitBit
FitBit Activity Created
Challenge Competitor Process
Process State
Import Activity
Activity Recorded
Leaderboard Ranked
Challenge

What Elixir tooling is available?

Awesome Elixir and CQRS

A curated list of awesome Elixir, Command Query Responsibility Segregation (CQRS), and event sourcing resources.

Contents

- Libraries
- Community resources
- Books
- Articles
- Presentations
- Screencasts
- Example applications

github.com/slashdotdash/awesome-elixir-cqrs

Commanded

Commanded

Use Commanded to build Elixir CQRS/ES applications

UK http://commanded.io/

Repositories 9 | Packages | People 1 | Teams 1 | Projects | Settings

commanded

Use Commanded to build Elixir CQRS/ES applications

Elixir ★ 852 ⑂ 109

eventstore

Event store using PostgreSQL for persistence

Elixir ★ 519 ⑂ 71

commanded-ecto-projections

Read model projections for Commanded using Ecto

Elixir ★ 36 ⑂ 18

commanded-audit-middleware

Command auditing middleware for Commanded CQRS/ES applications

Elixir ★ 16 ⑂ 7

commanded-swarm-registry

Distributed process registry using Swarm for Commanded

Elixir ★ 8 ⑂ 3

commanded-scheduler

Schedule one-off and recurring commands for Commanded CQRS/ES applications

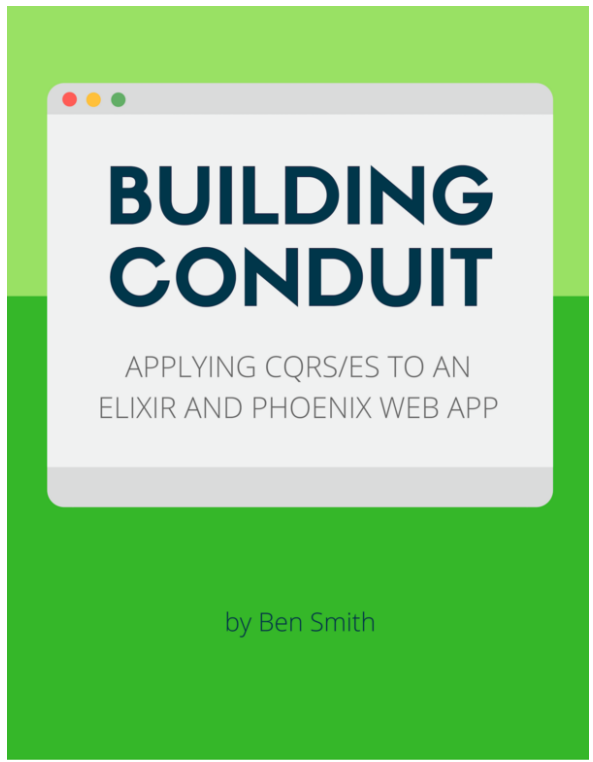
Elixir ★ 19 ⑂ 5

github.com/commanded

Want to learn more?

- **Building Conduit**

  — *Applying CQRS/ES to an Elixir and Phoenix web app*

  http://bit.ly/buildingconduitldn2019

- **Get in touch**
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