WELCOME...

THANKS FOR JOINING THE TEMPORAL NYC MEETUP!

MULTI-REGION AVAILABILITY HAS COME TO TEMPORAL CLOUD

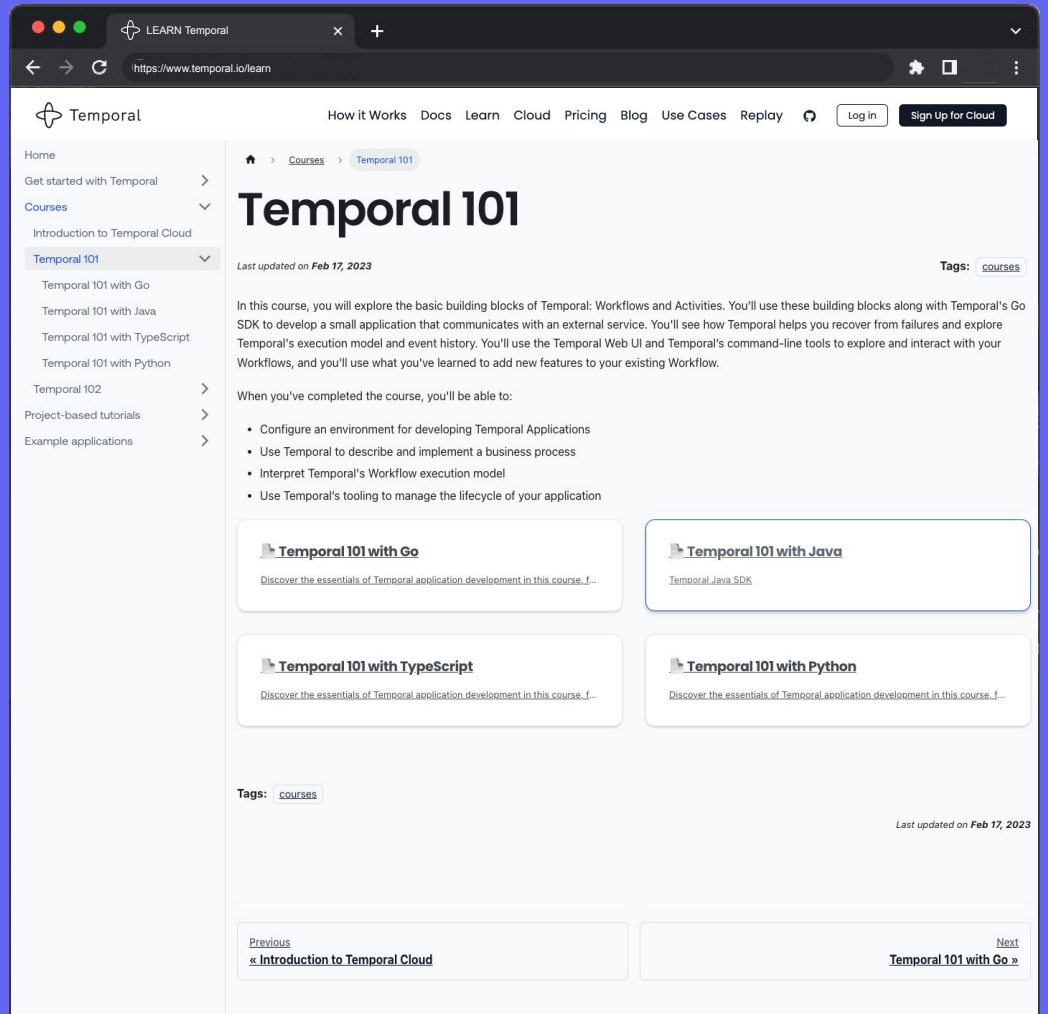
Run thousands of actions per second
across regions without breaking sweat.

LEARN

Self-paced online courses that provide in-depth hands-on learning experiences.

- Temporal 101
- Temporal 102
- Intro to Temporal Cloud

https://learn.temporal.io/courses

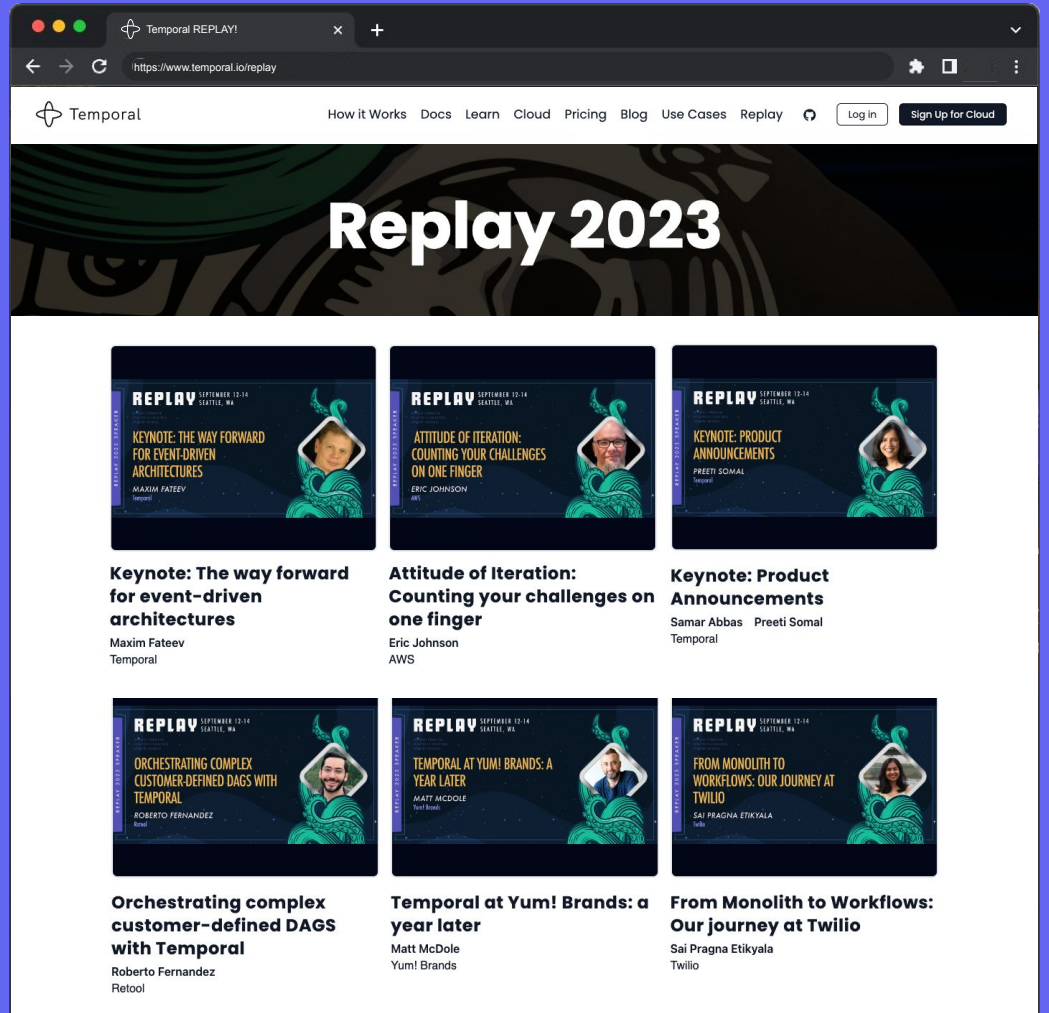


REPLAY

Last month, we gathered Temporal experts from around the world to share best practices and how-to's.

You can check out **ALL** the videos at the Replay site:

https://temporal.io/replay/videos



AGENDA

01: **WELCOME**
LOREN SANDS-RAMSHAW - TEMPORAL

02: **DURABLE EXECUTION FOR EVENT DRIVEN ARCHITECTURES**
MAXIM FATEEV, CEO - TEMPORAL

03: **WORKFLOWS PRODUCT**
ALLEN GEORGE - DATADOG

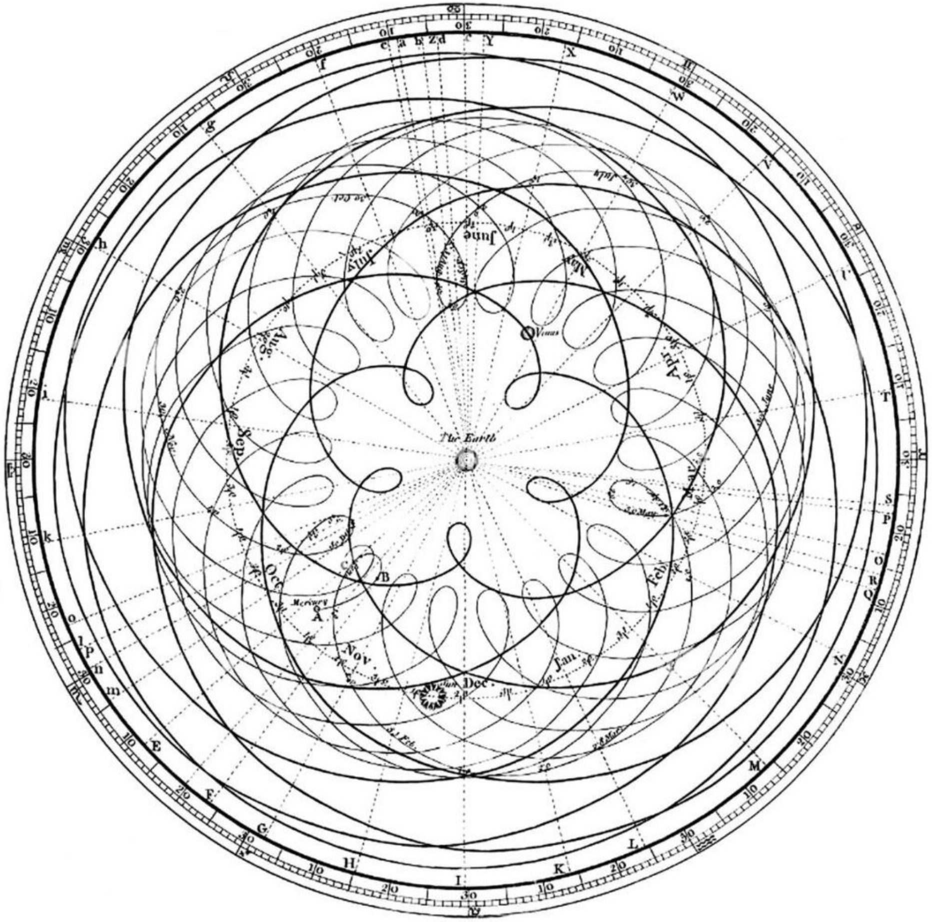
04: **PANEL: WORKFLOWS EVERYWHERE**
MAXIM FATEEV - TEMPORAL, LENNY BLUM - JP MORGAN CHASE, ALLEN GEORGE - DATADOG

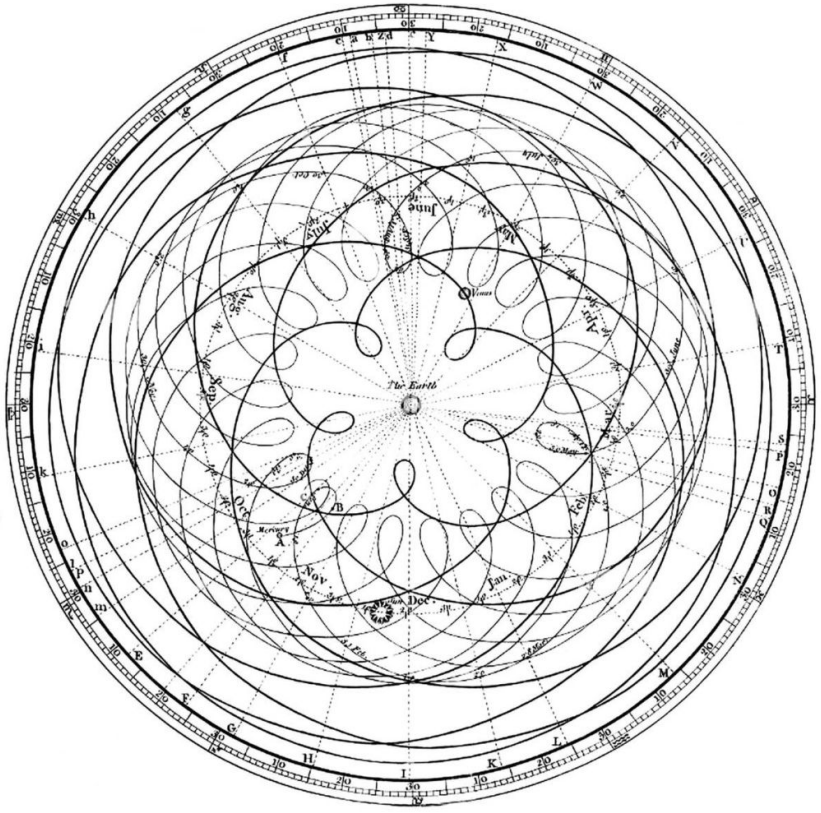
DURABLE EXECUTION

The way forward for event-driven architecture

MAXIM FATEEV
CEO, TEMPORAL

Temporal


The Earth
Venus
Mercury
June
July
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May


The Earth
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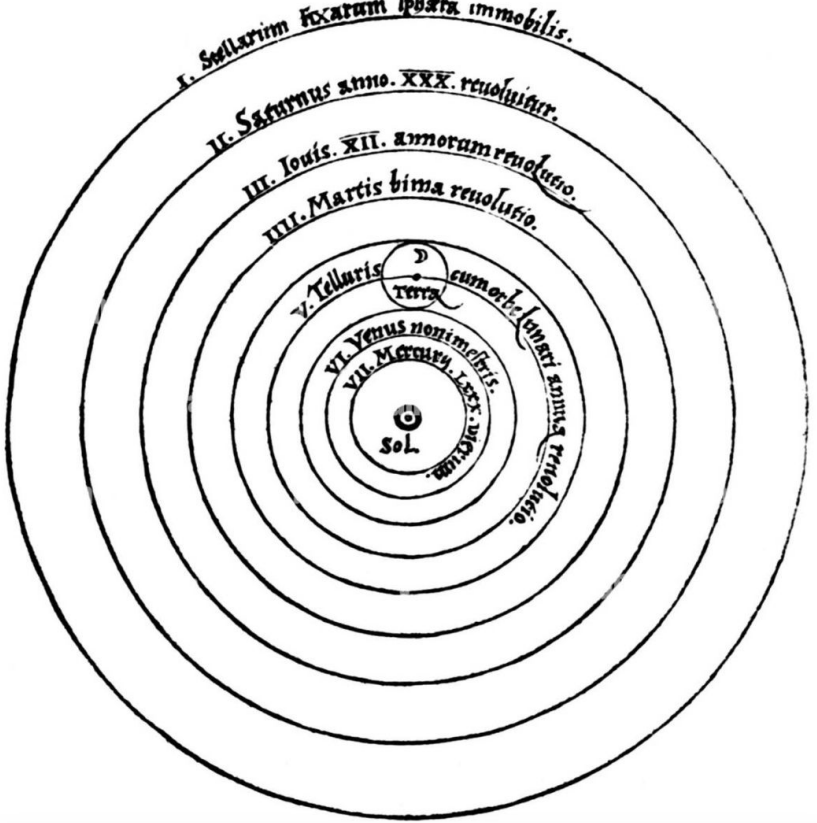
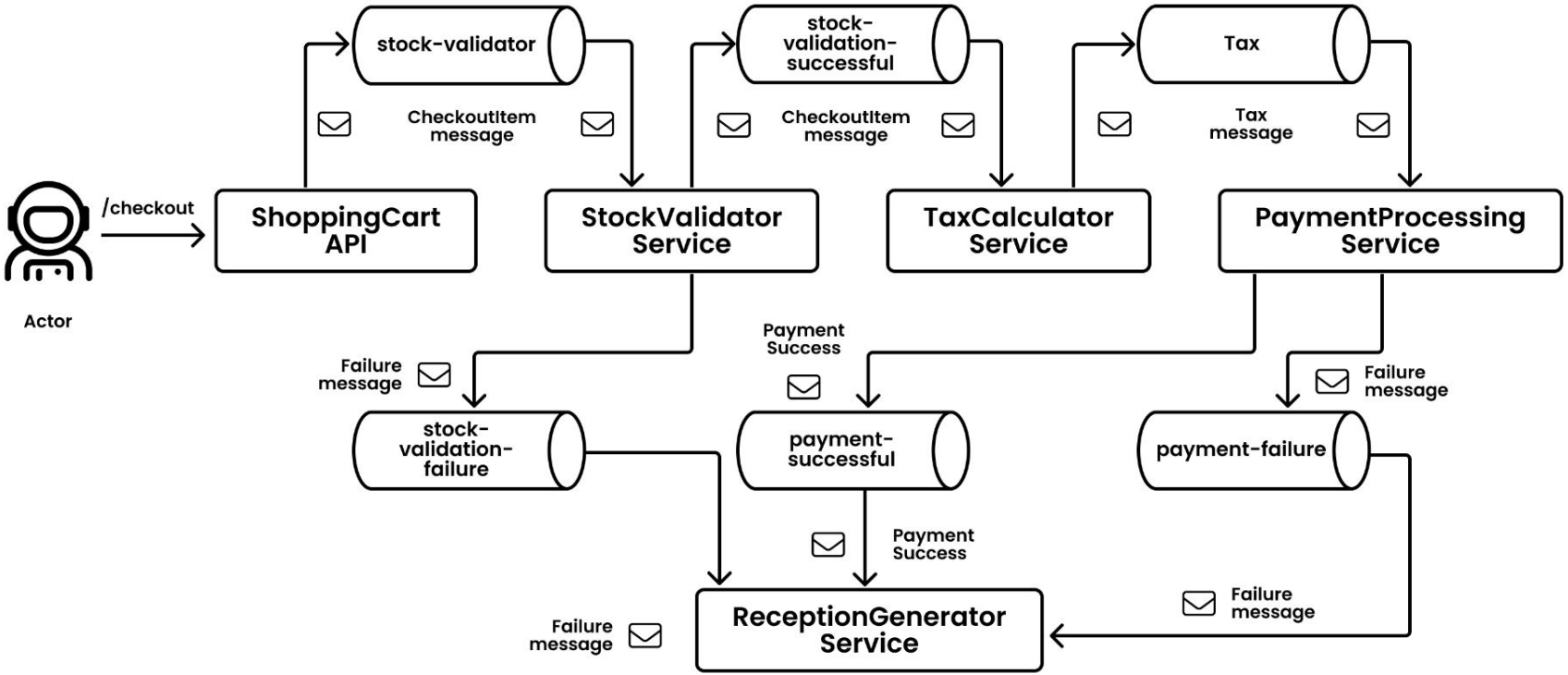
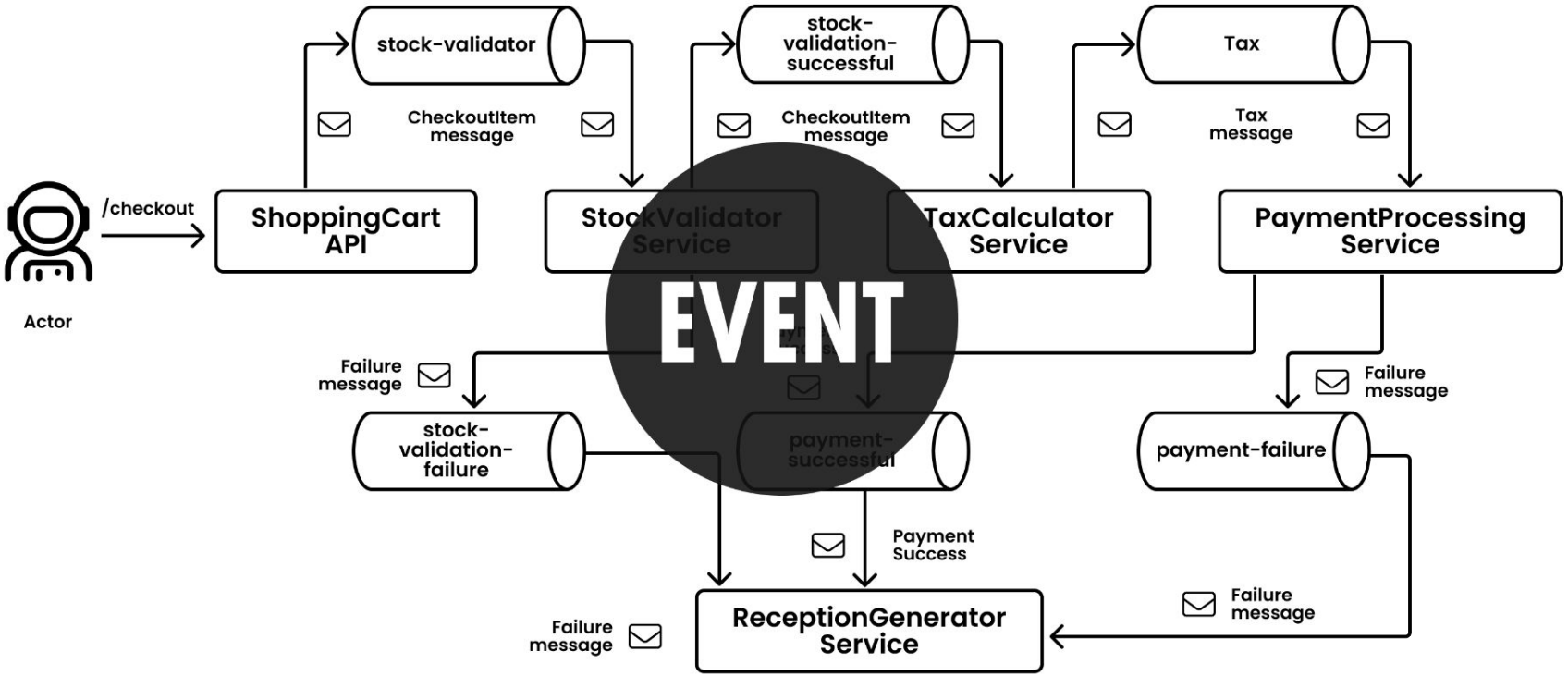
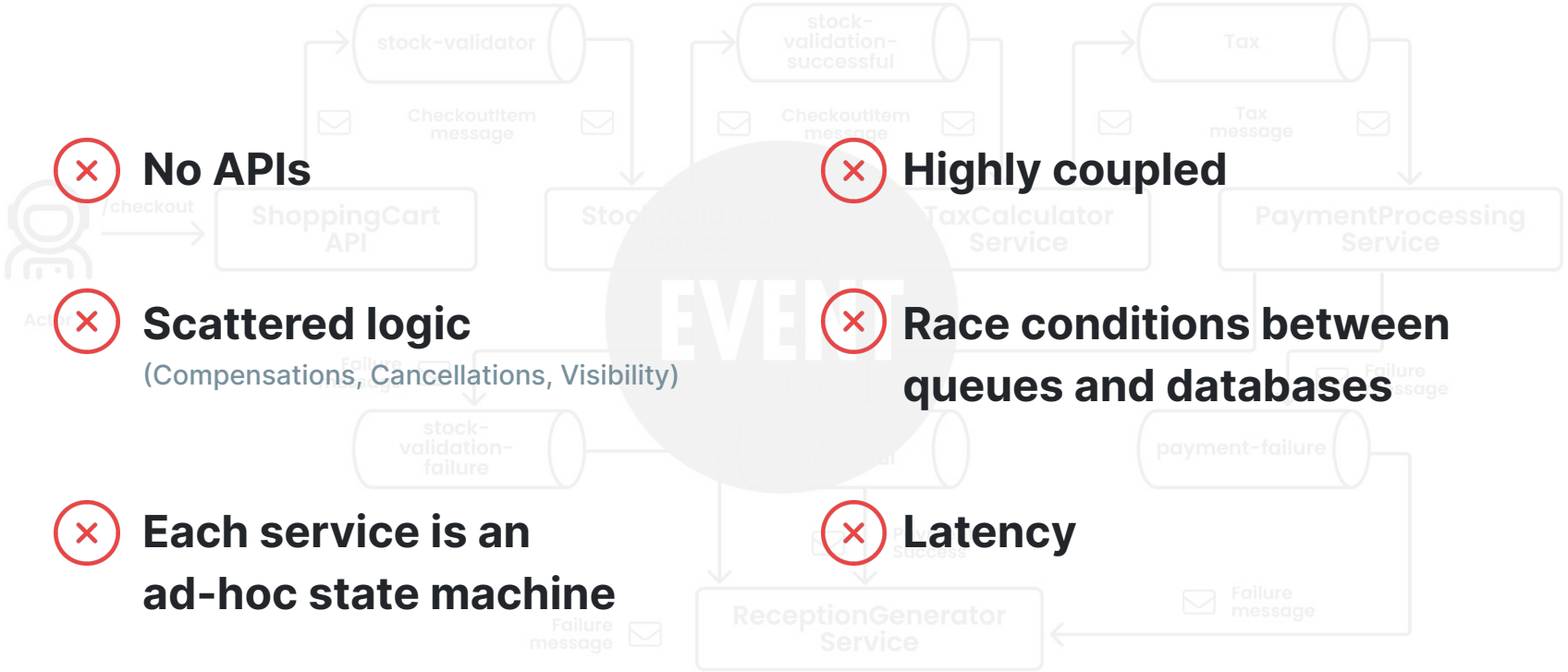
Mercury


I. Stellarum fixarum sphæra immobilis.
II. Saturnus anno. XXX. revolvitur.
III. Iouis. XII. annorum revolutio.
IIII. Martis bima revolutio.
V. Telluris
Terra
cum orbe Lunari annua revolutio.
VI. Venus nonimestris.
VII. Mercurius. LXX. dierum.
Sol.


stock-validator
stock-validation-successful
Tax
CheckoutItem message
CheckoutItem message
Tax message
/checkout
Actor
ShoppingCart API
StockValidator Service
TaxCalculator Service
PaymentProcessing Service
Failure message
Payment Success
Failure message
stock-validation-failure
payment-successful
payment-failure
Payment Success
Failure message
Failure message
ReceptionGenerator Service

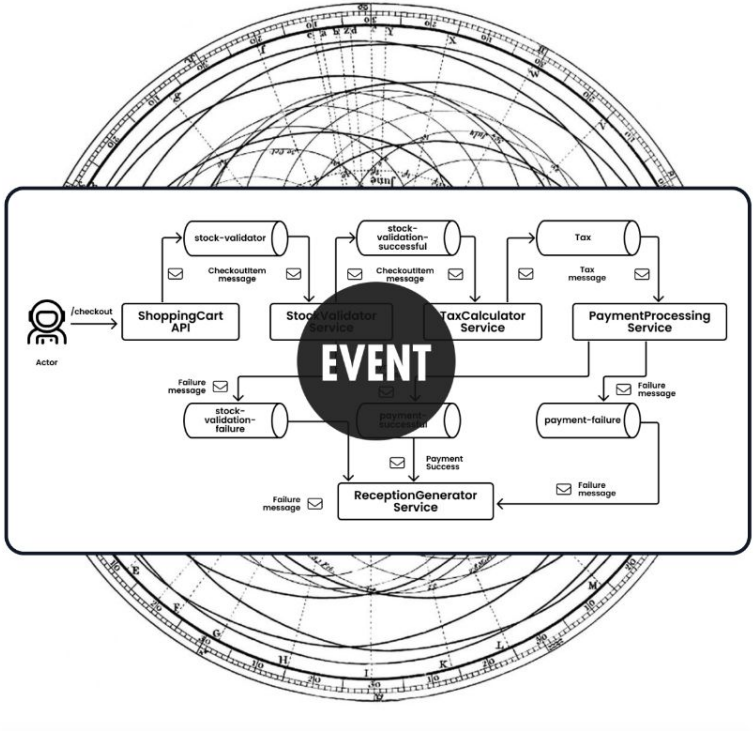

stock-validator
stock-validation-successful
Tax
CheckoutItem message
CheckoutItem message
Tax message
/checkout
Actor
ShoppingCart API
StockValidator Service
TaxCalculator Service
PaymentProcessing Service
EVENT
Failure message
Failure message
stock-validation-failure
payment-successful
payment-failure
Payment Success
Failure message
Failure message
ReceptionGenerator Service

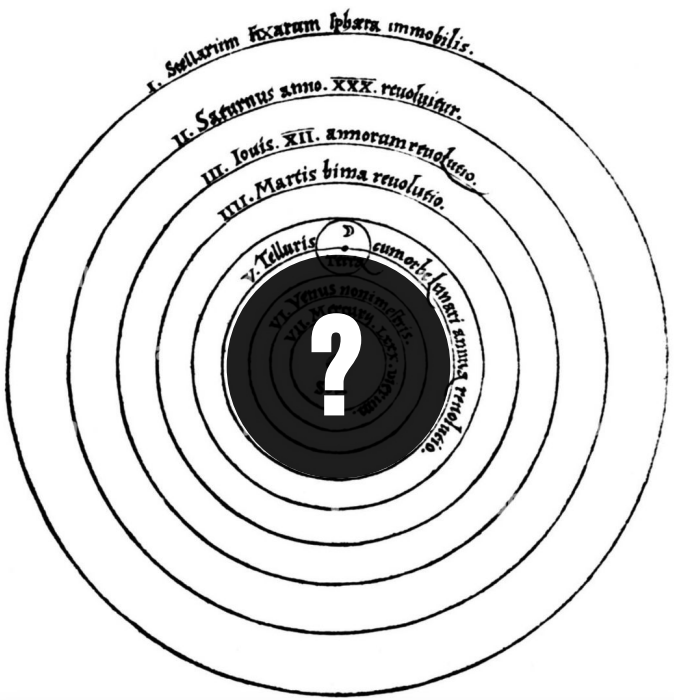
EVENT-DRIVEN ARCHITECTURE



- ✕ **No APIs**
- ✕ **Highly coupled**
- ✕ **Scattered logic**
  (Compensations, Cancellations, Visibility)
- ✕ **Race conditions between queues and databases**
- ✕ **Each service is an ad-hoc state machine**
- ✕ **Latency**

EVOLVE YOUR WAY OF THINKING





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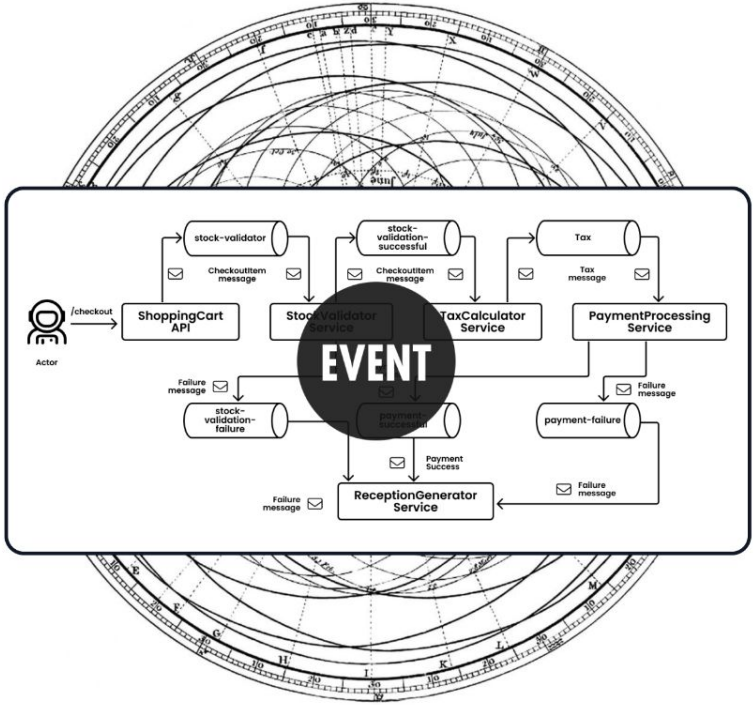
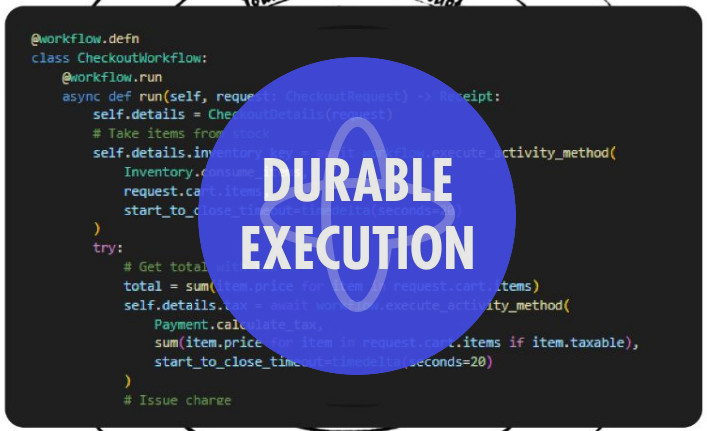
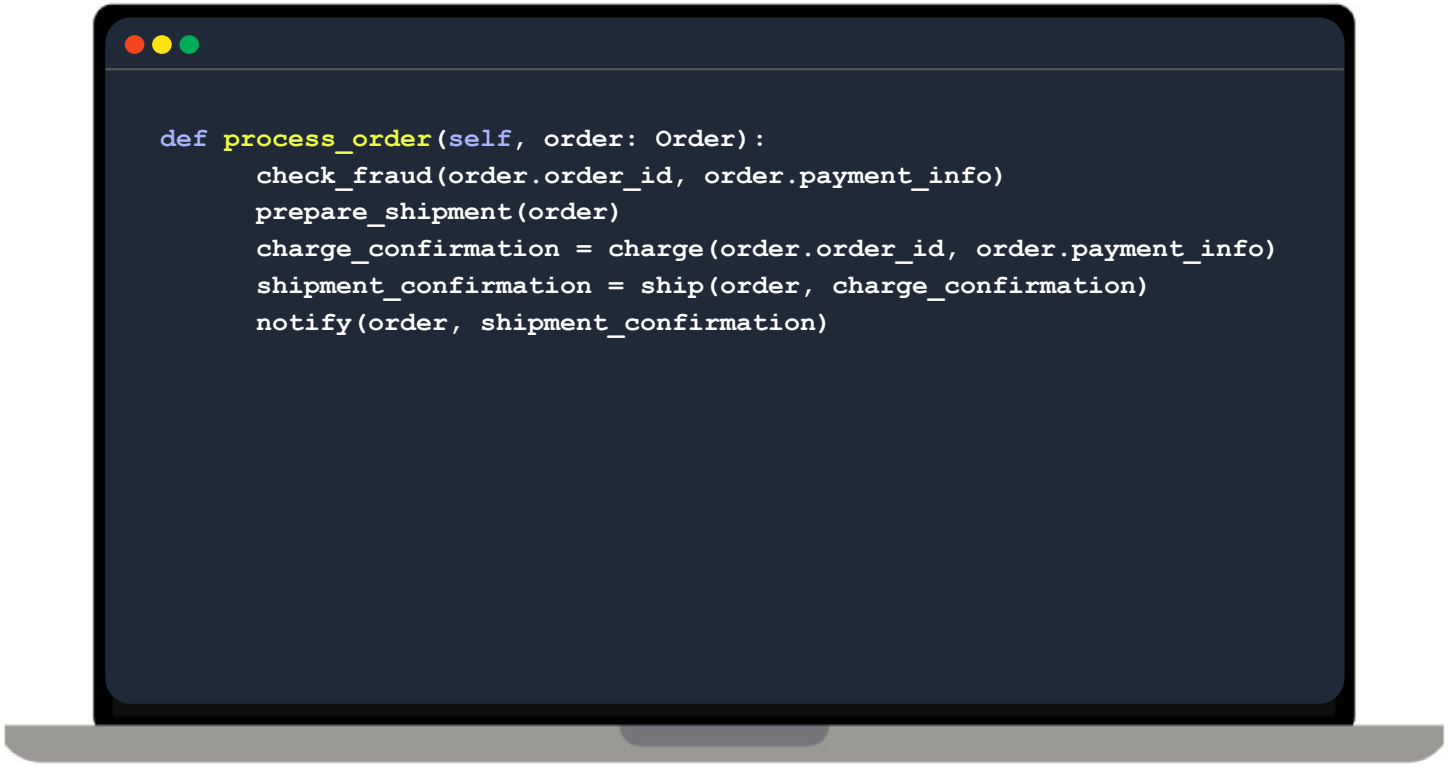
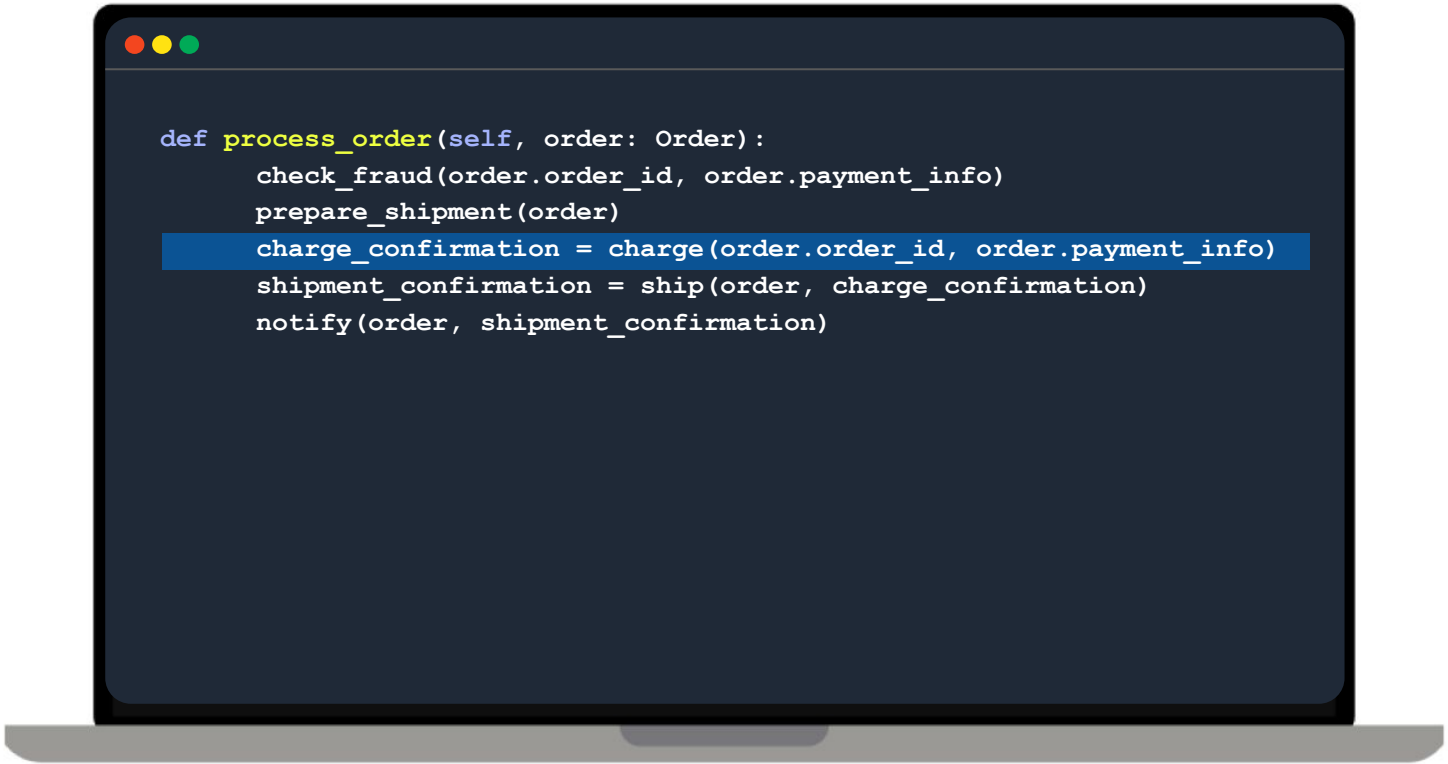




DURABLE EXECUTION



DURABLE EXECUTION



DURABLE EXECUTION

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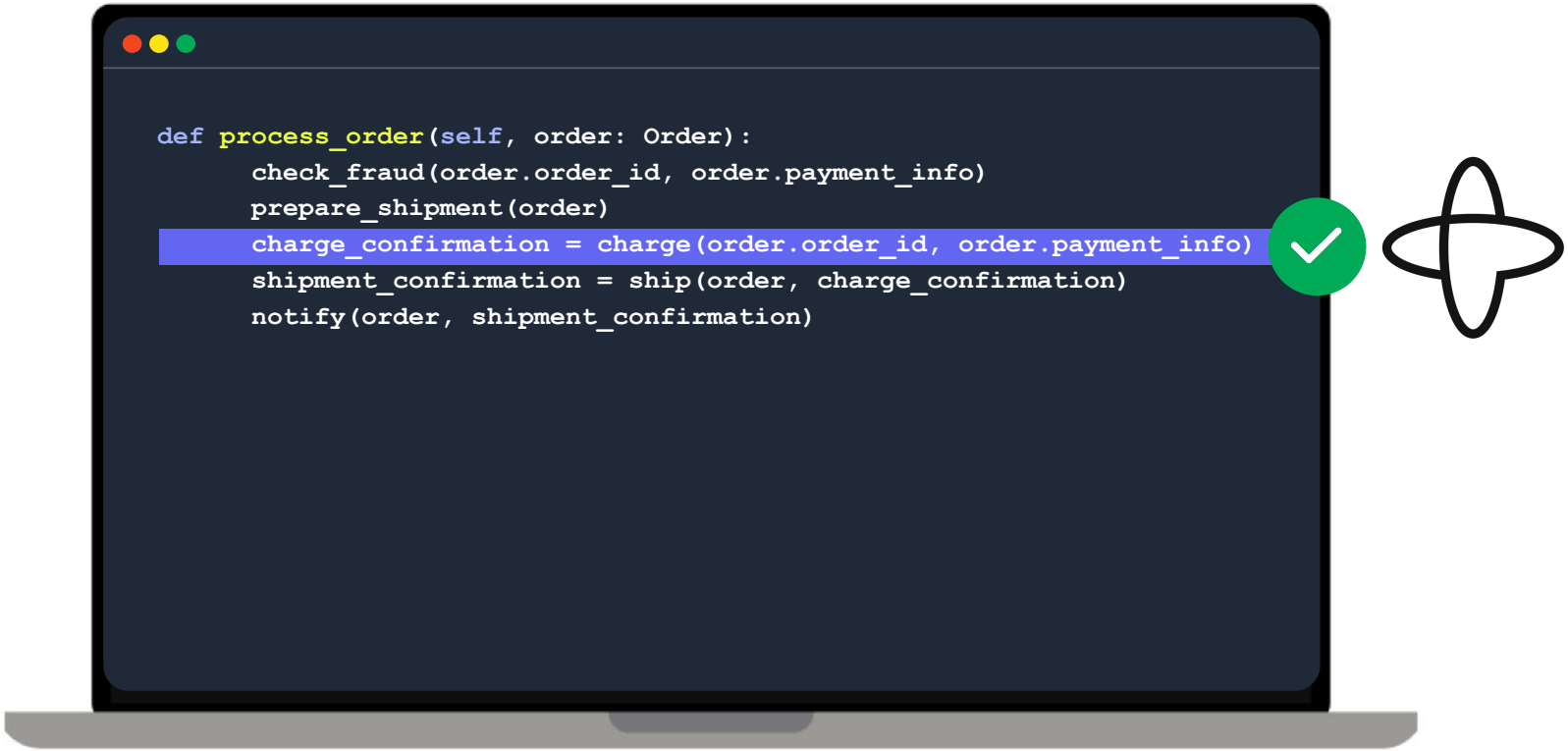
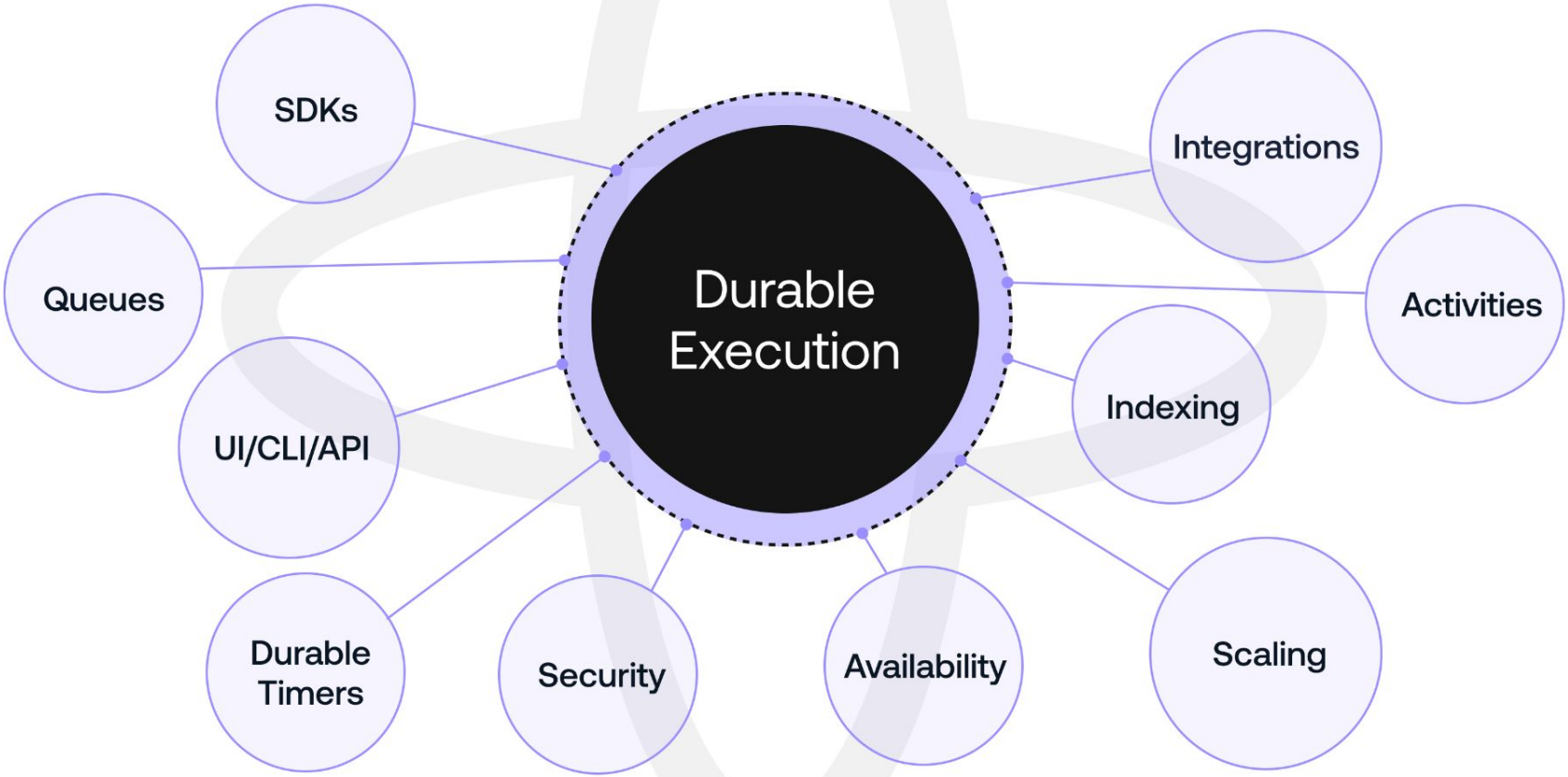
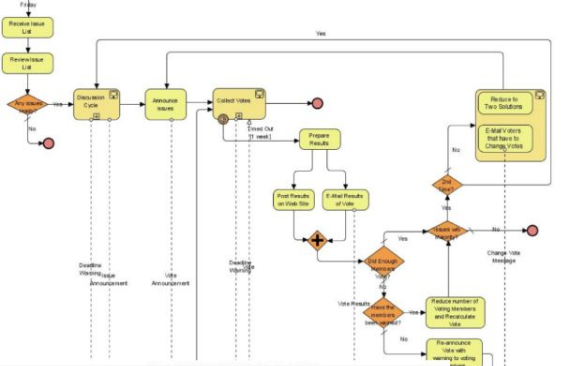


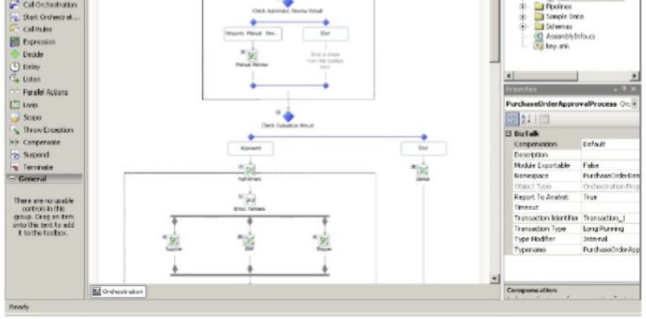
Temporal delivers event-driven architecture
with **Durable Execution**, making it a

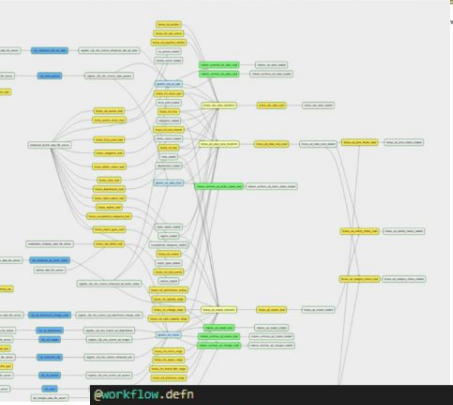
FUNDAMENTALLY BETTER DEVELOPER EXPERIENCE.

TEMPORAL

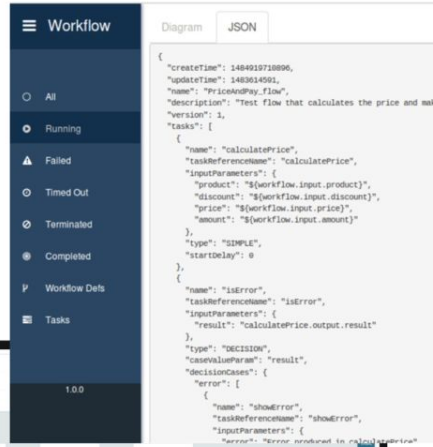

SDKs
Queues
UI/CLI/API
Durable Timers
Security
Availability
Scaling
Indexing
Activities
Integrations
Durable Execution



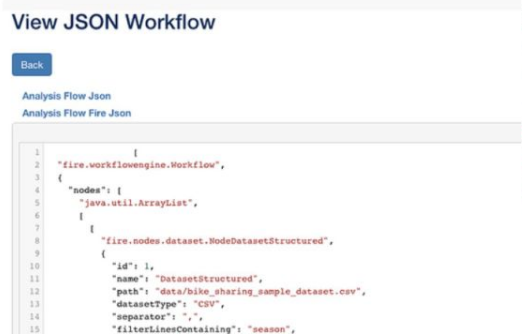


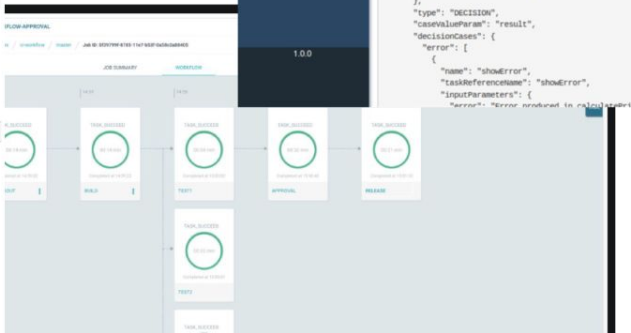


A WORD ABOUT WORKFLOWS

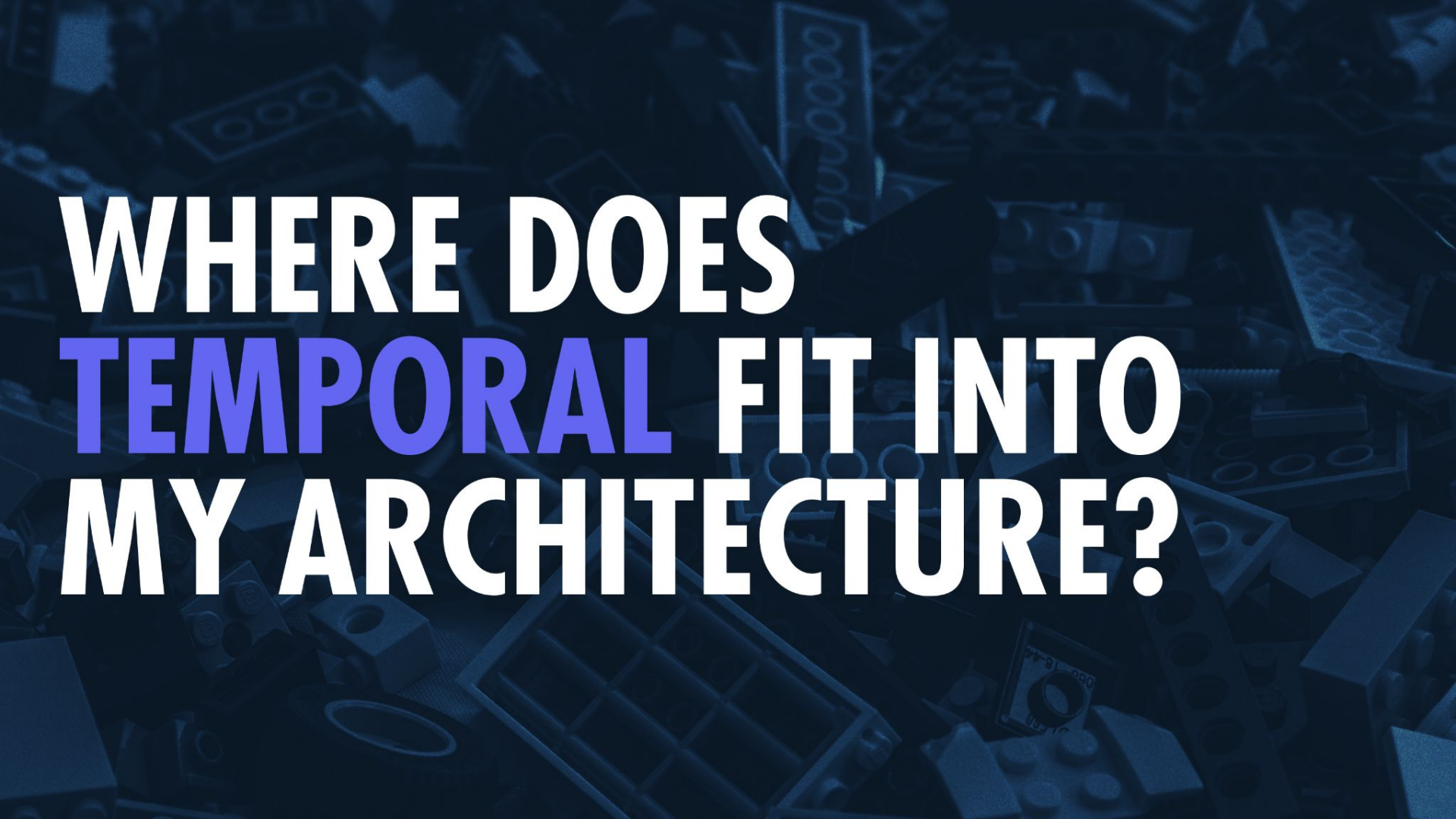


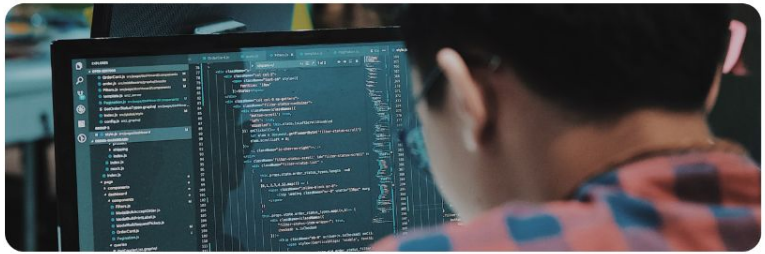

```python
@workflow.defn
class CheckoutWorkflow:
    @workflow.run
    async def run(self, request: CheckoutRequest) -> Receipt:
        self.details = CheckoutDetails(request)
        # Take items from stock
        self.details.inventory_key = await workflow.execute_activity_method(
            Inventory.consume_items,
            request.cart.items,
            start_to_close_timeout=timedelta(seconds=20)
        )
        try:
            # Get total with tax
            total = sum(item.price for item in request.cart.items)
            self.details.tax = await workflow.execute_activity_method(
                Payment.calculate_tax,
                sum(item.price for item in request.cart.items if item.taxable),
                start_to_close_timeout=timedelta(seconds=20)
            )
```






WORKFLOWS
WORKFLOWS EVERYWHERE
imgflip.com


WHERE DOES
TEMPORAL FIT INTO
MY ARCHITECTURE?



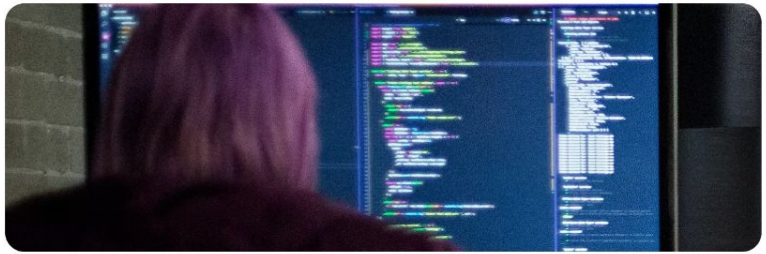
NOT A MATCH

Hobbies Inconsistency

Falling requests to the caller

Likes Losing data

Not completing tasks



NOT A MATCH

Hobbies Log/event shipping

Likes Stream analytics

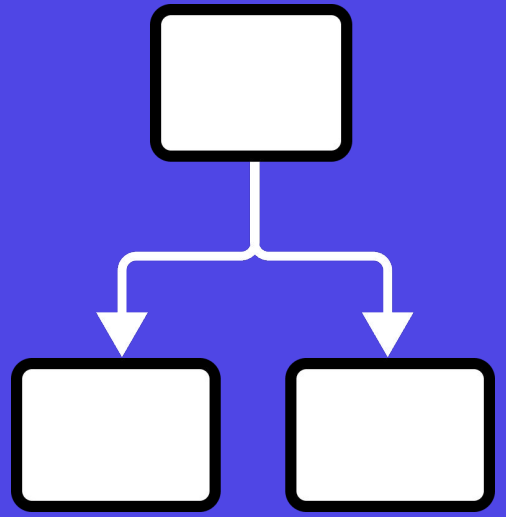
LOVE CONNECTION!

Hobbies	State management
	Guaranteed completion, compensations AND uniqueness!
Likes	Long running operations Humans in the loop!! Lifecycle <3


HOW DO I
DESIGN MY APP?

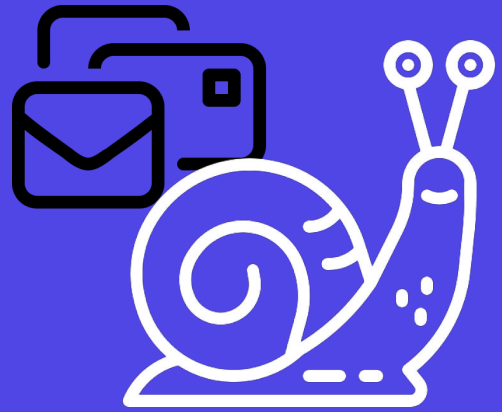

LOGICAL
DESIGN

SEQUENCING ACTIVITIES



UPDATES SIGNALS

STATIC VS DYNAMIC



PERIODIC

ENTITY

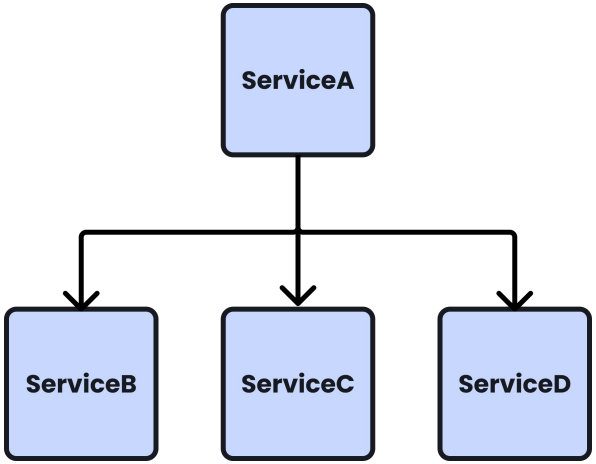

PHYSICAL
DESIGN

APPLICATION PATTERN

MONOLITH

APPLICATION PATTERN

SYNCHRONOUS SERVICE ORCHESTRATION



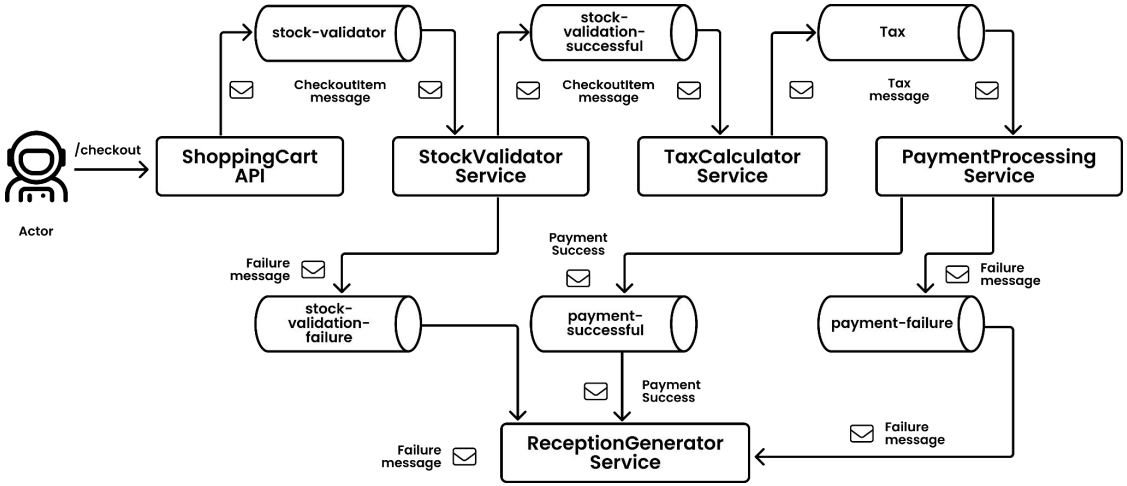
REPLAY TALK REC

Payments Talks!

SOFI
JP MORGAN CHASE
WILL BANK
AFTER PAY
STRIPE

APPLICATION PATTERN

EVENT-DRIVEN ARCHITECTURE



REPLAY TALK REC

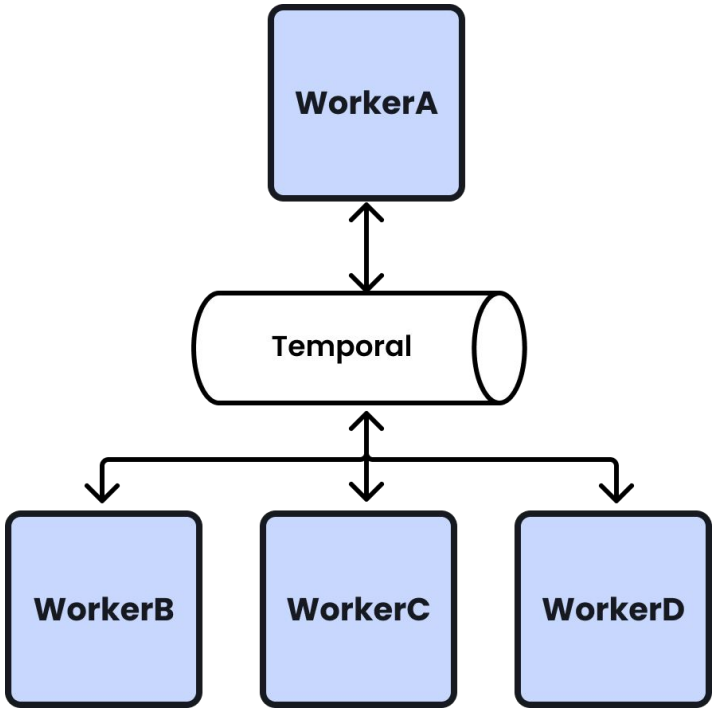
Temporal at Yum! Brands: A Year Later.

MATT MCDOLE, YUM! BRANDS

DAY 1 - EXECUTION STAGE

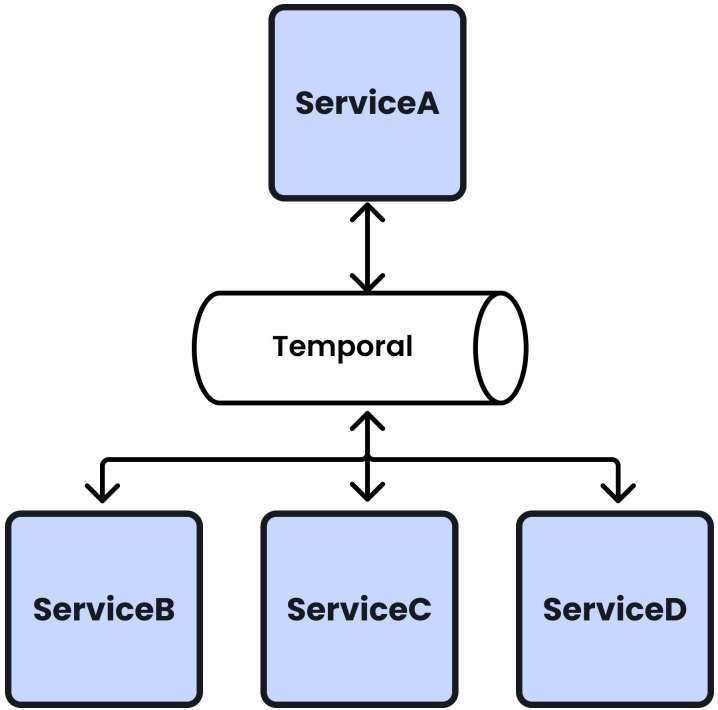
APPLICATION PATTERN

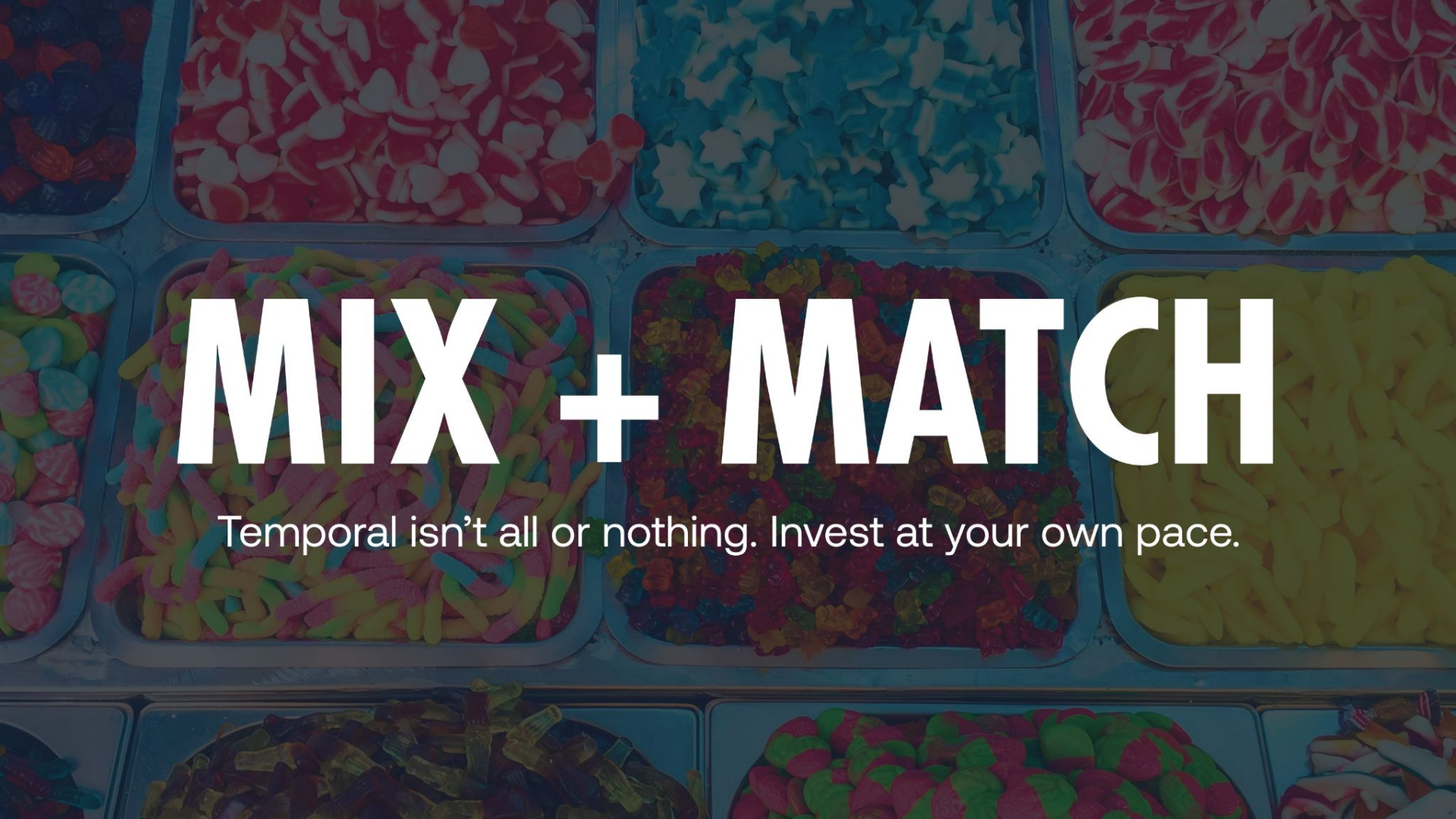
ASYNC ORCHESTRATOR



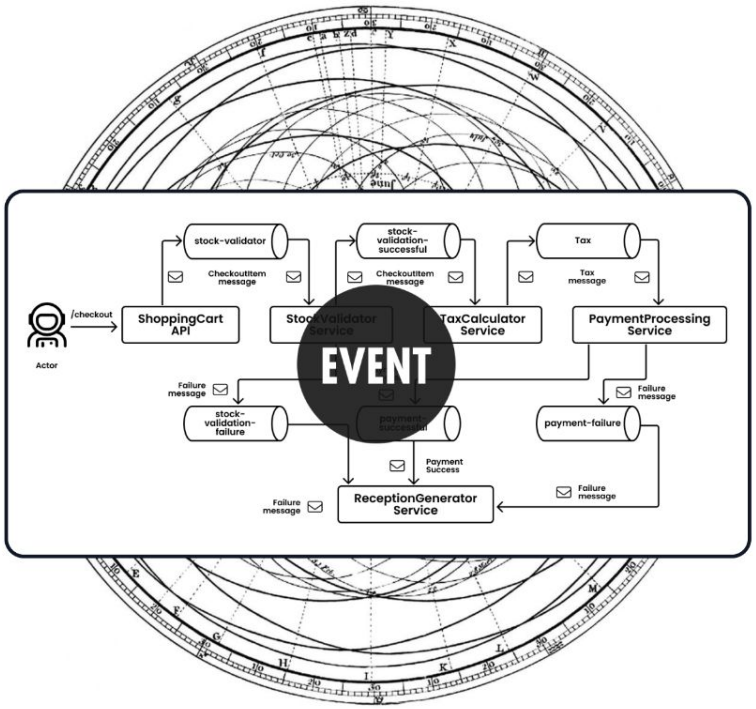
APPLICATION PATTERN

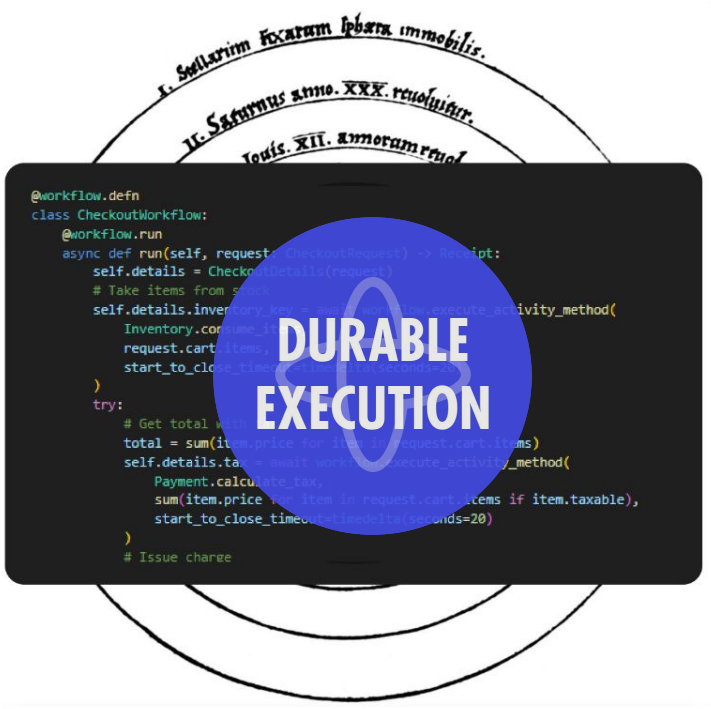
NEXUS




MIX + MATCH
Temporal isn’t all or nothing. Invest at your own pace.

EVOLVE YOUR WAY OF THINKING





Temporal

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THANK YOU...

QUESTIONS?