Welcome to Kafka

We're Glad You're Here

Dave Klein

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@daveklein

The Plan

- Overview of the Apache Kafka Ecosystem
- Strategies to go about learning it
- Resources for every learning style
- Friends to help you on your journey

Event

Notification

Order Placed

Temperature Read

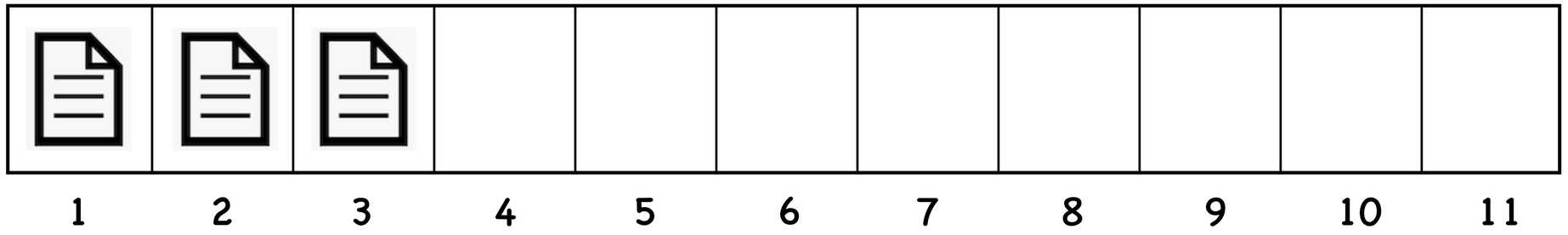
State

{item:123, price: 29.95,
qty: 2}

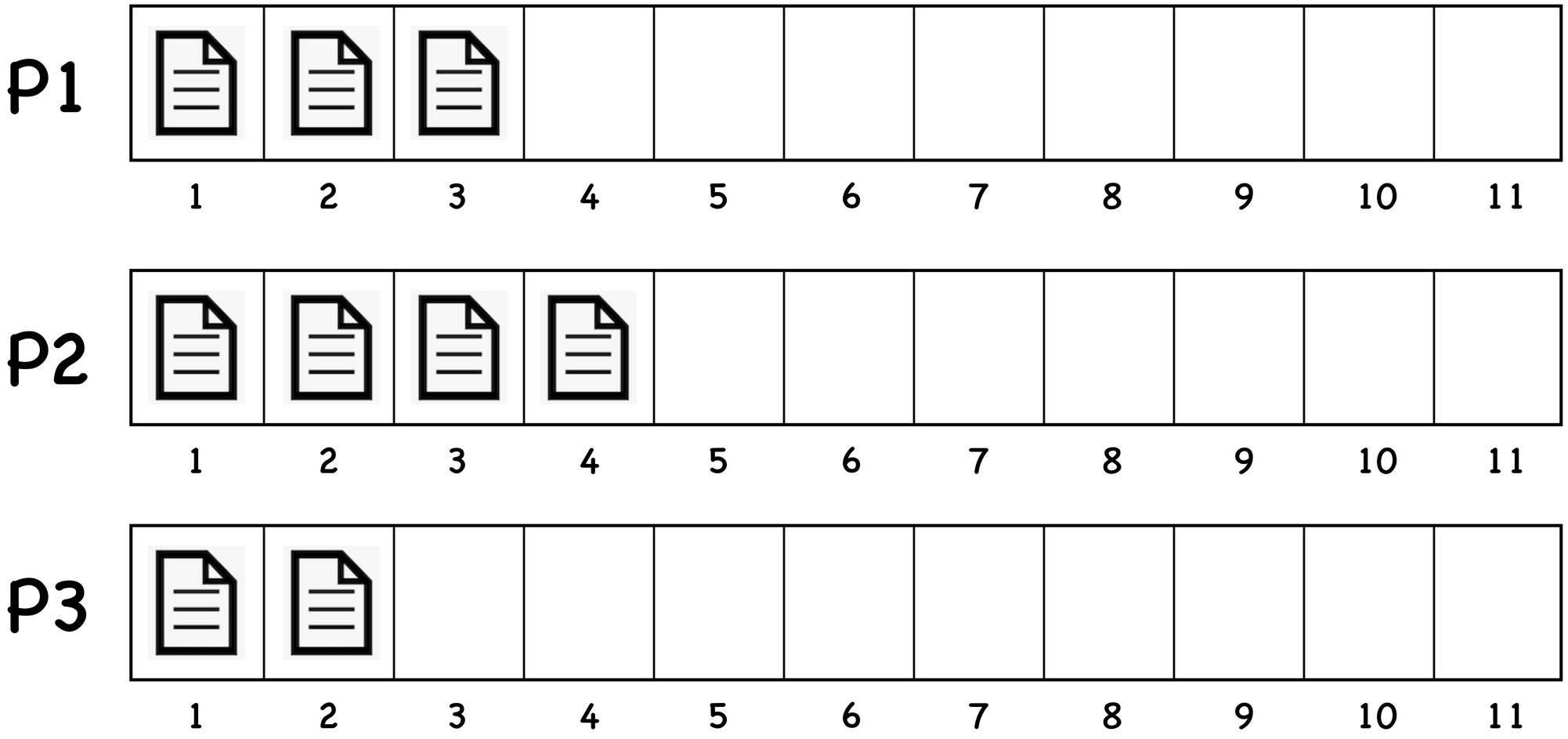
{temp:29, unit: F,
time: 1606949836369}

```
"key": "a1",
"value": {
    "eventType": “added-to-cart",
    "title": "Kafka Streams in Action”,
    "author": "Bill Bejeck",
    "price": 44.99
}
```

Topic (log)



Topic Partitions



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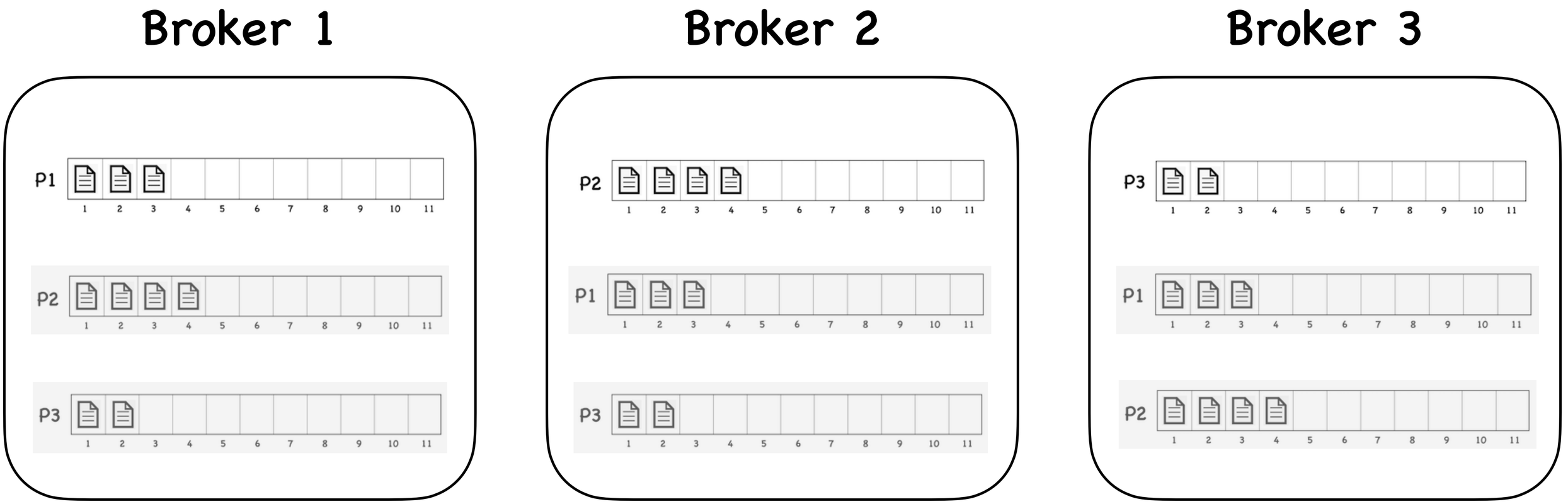
Brokers and Replication



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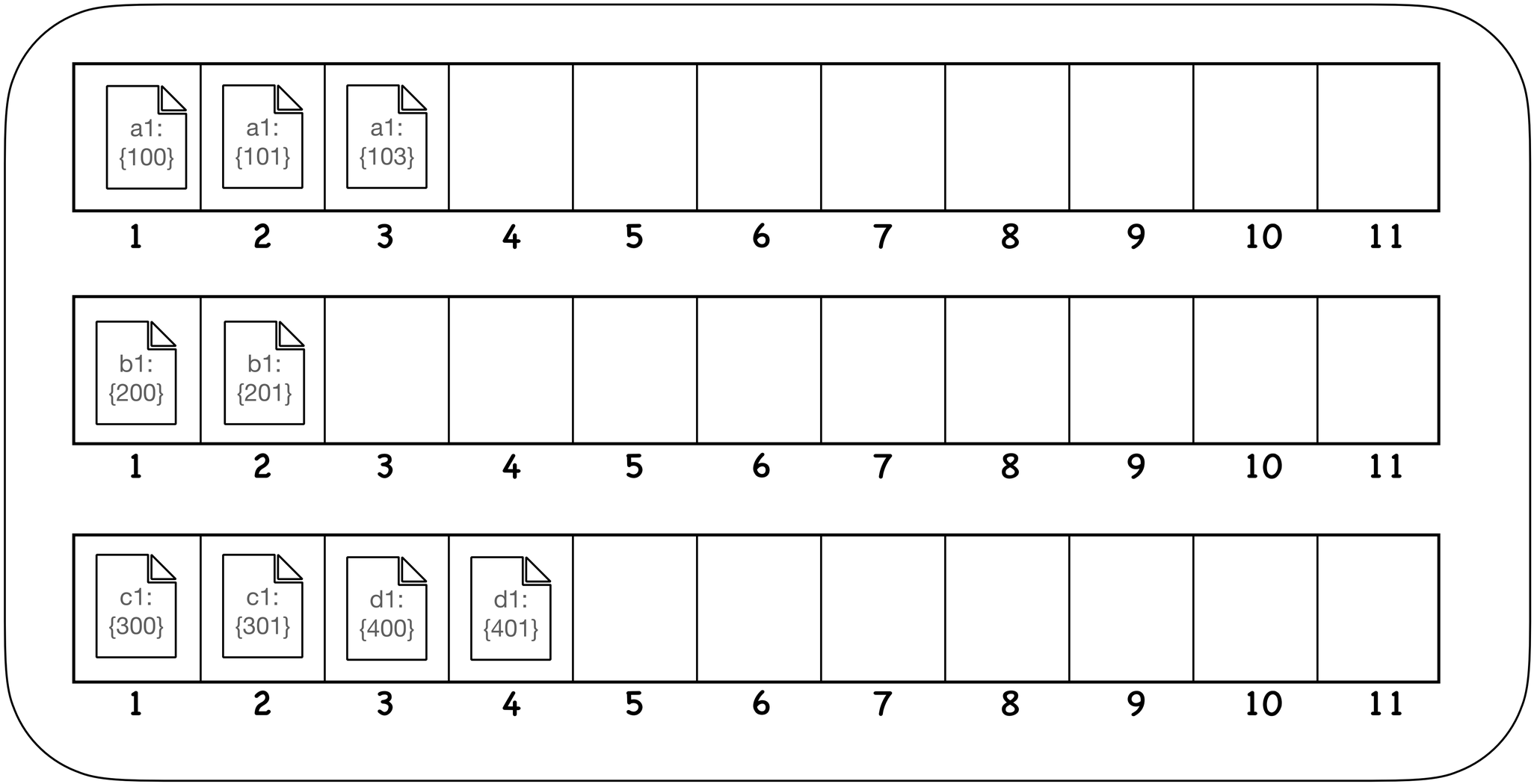
Topic



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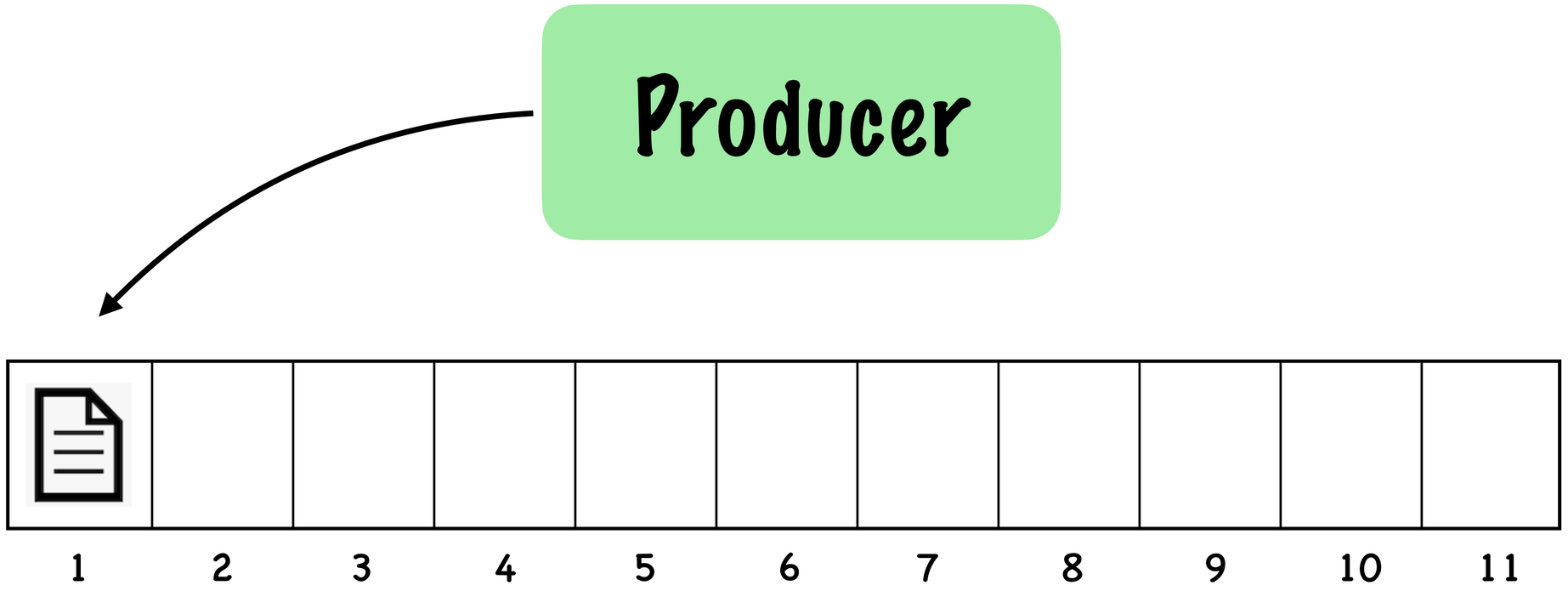
Producer
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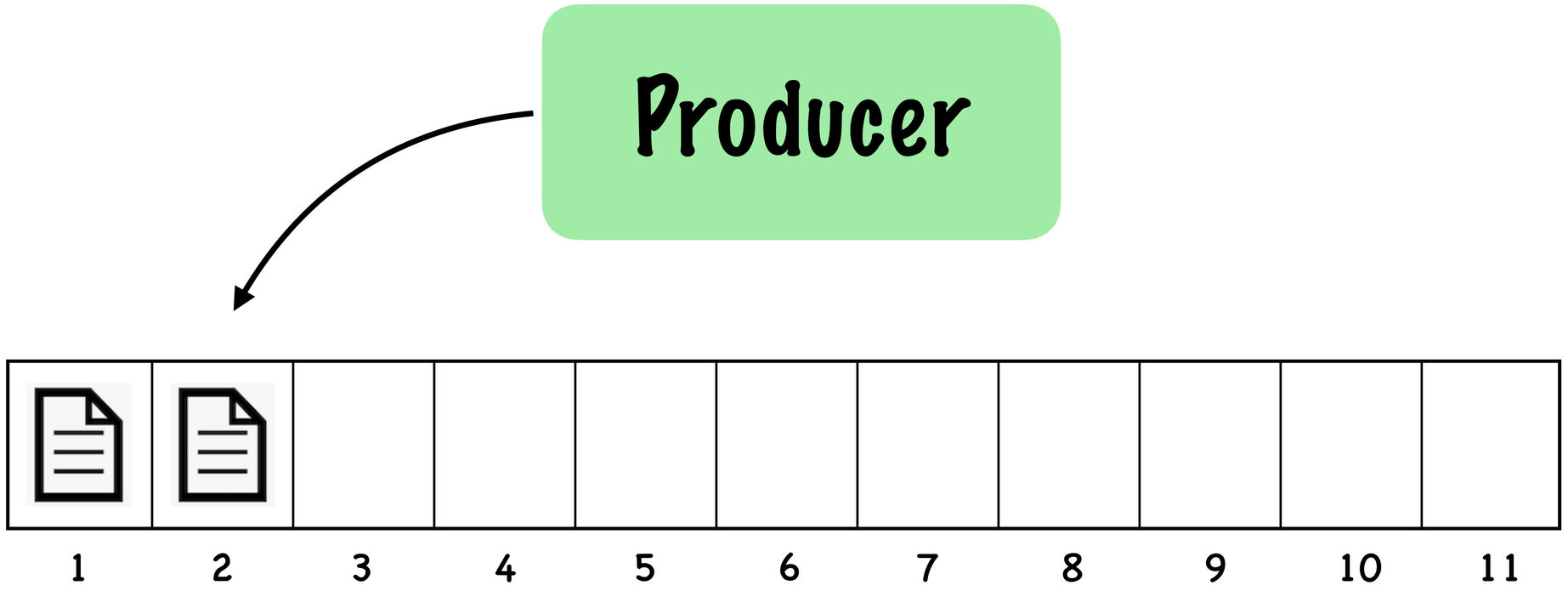
11


Producer
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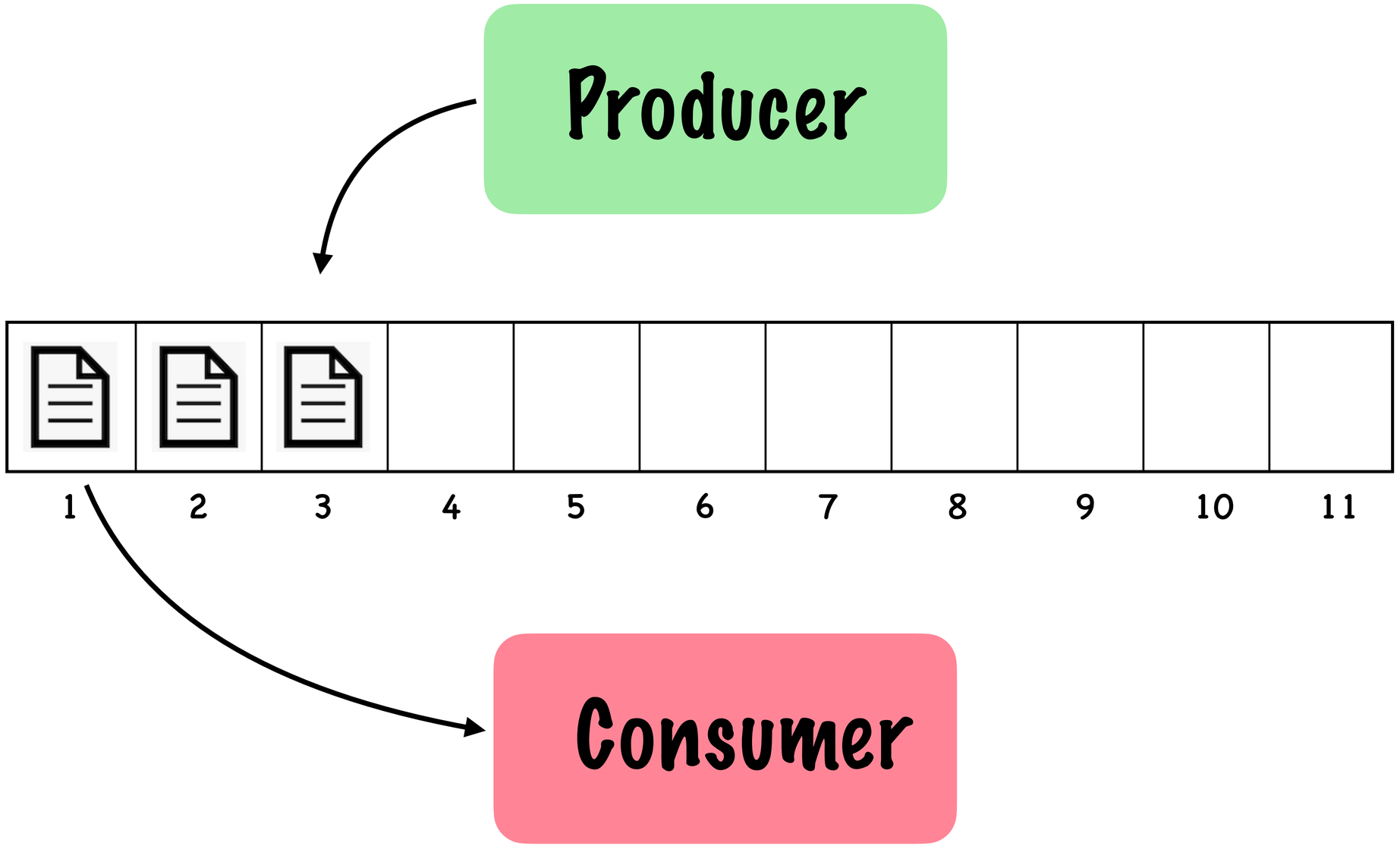
Producer
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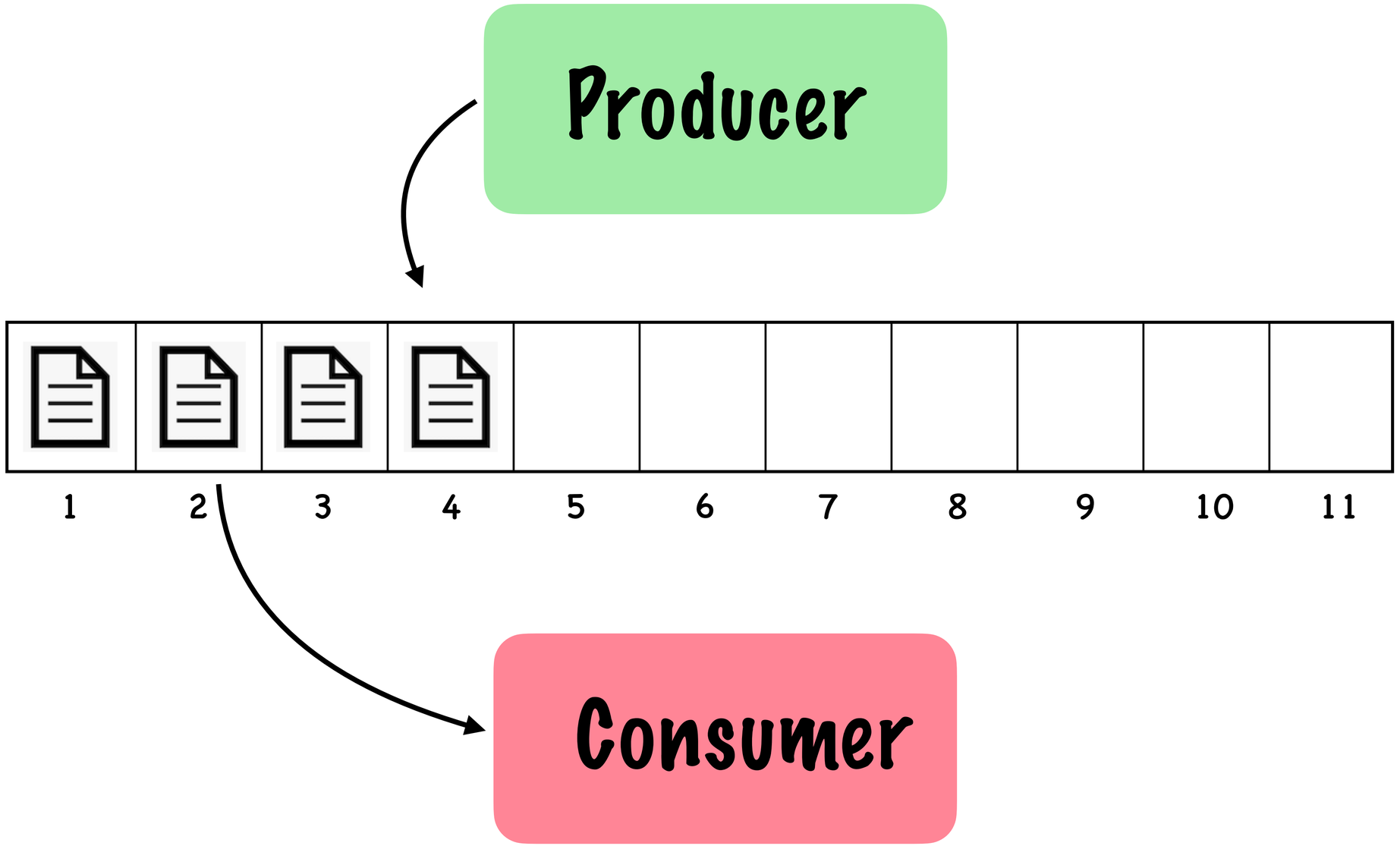
Consumer


Producer
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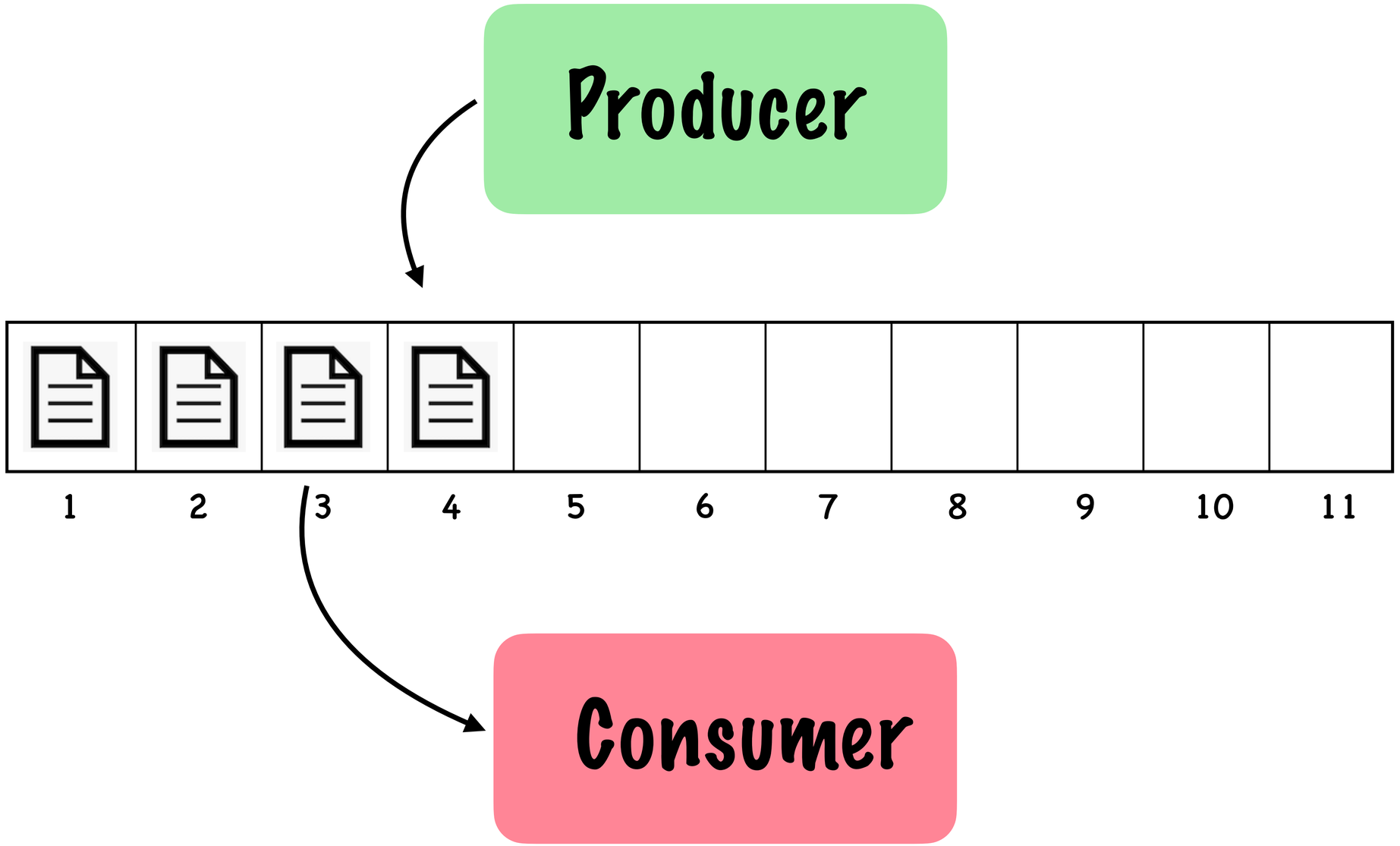
Consumer



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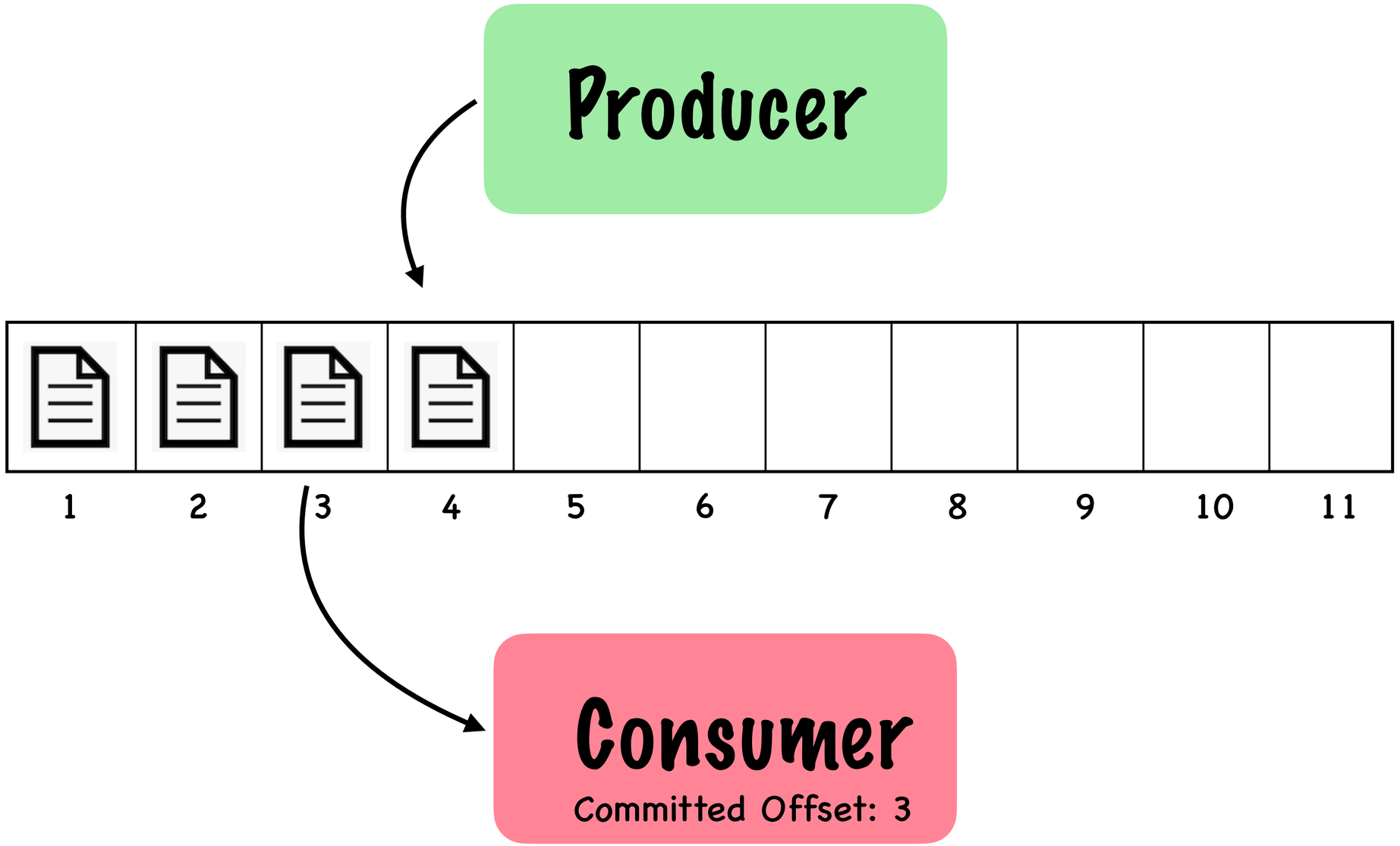
Producer
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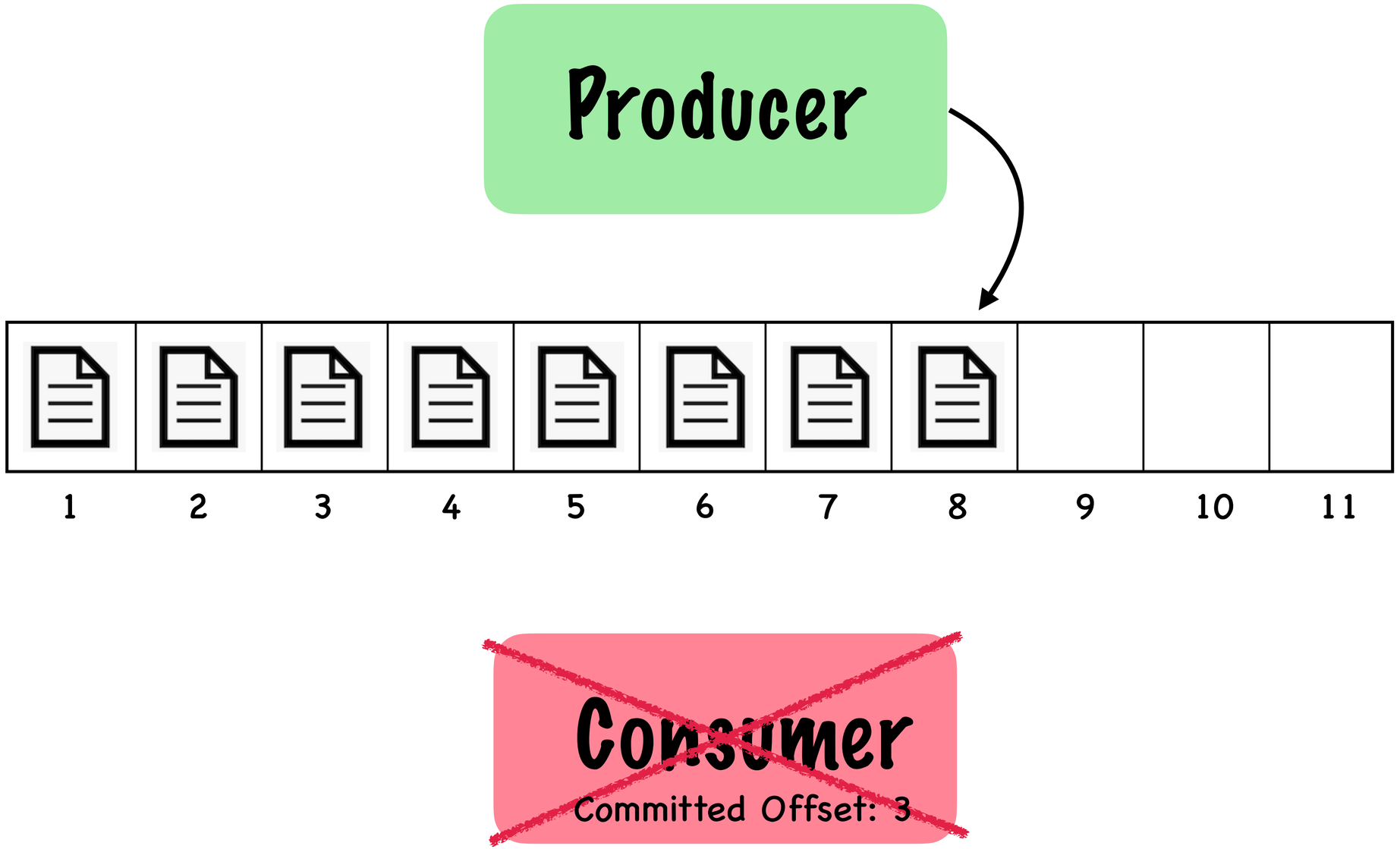
Consumer
Committed Offset: 3


Producer
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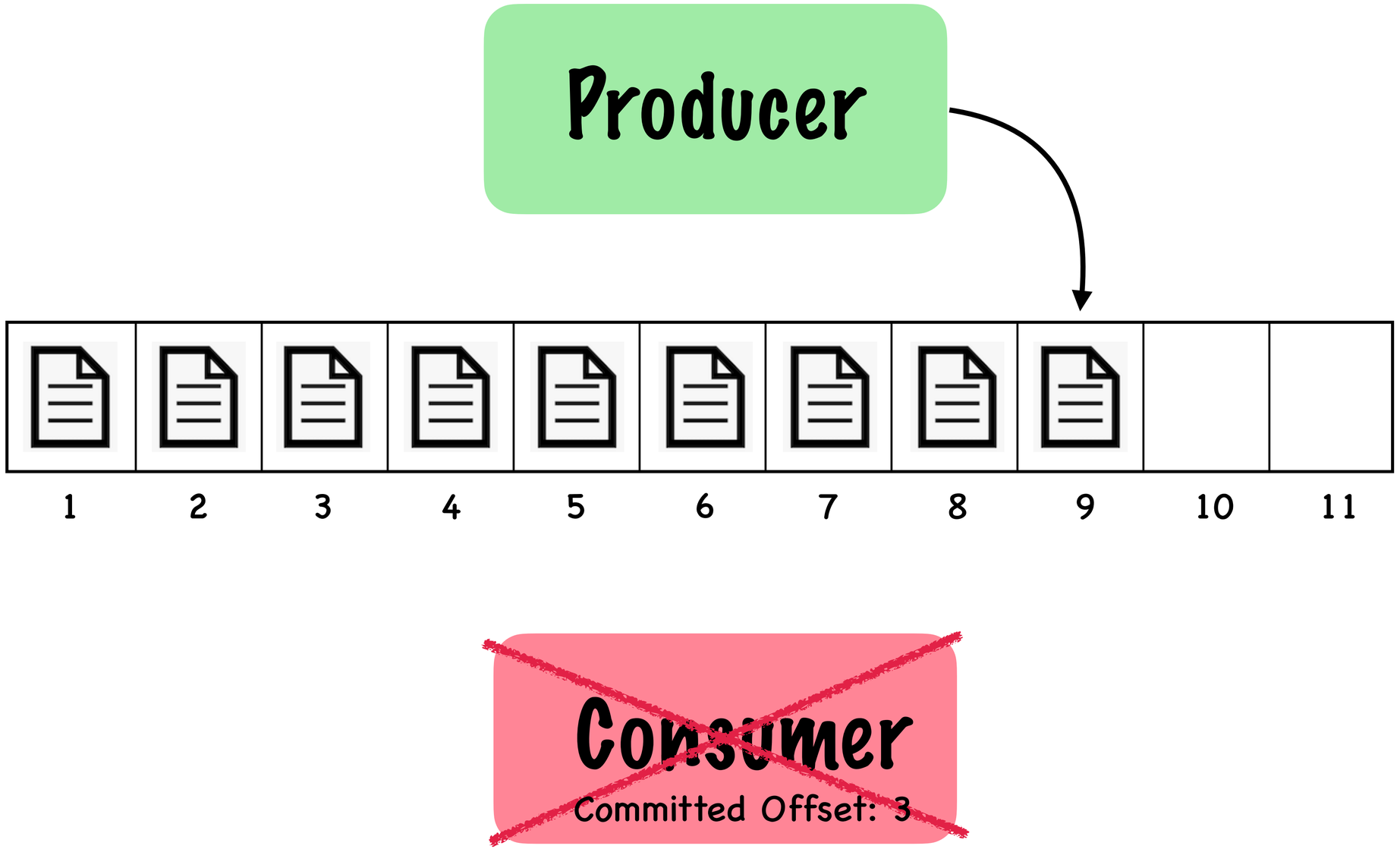
Consumer
Committed Offset: 3


Producer
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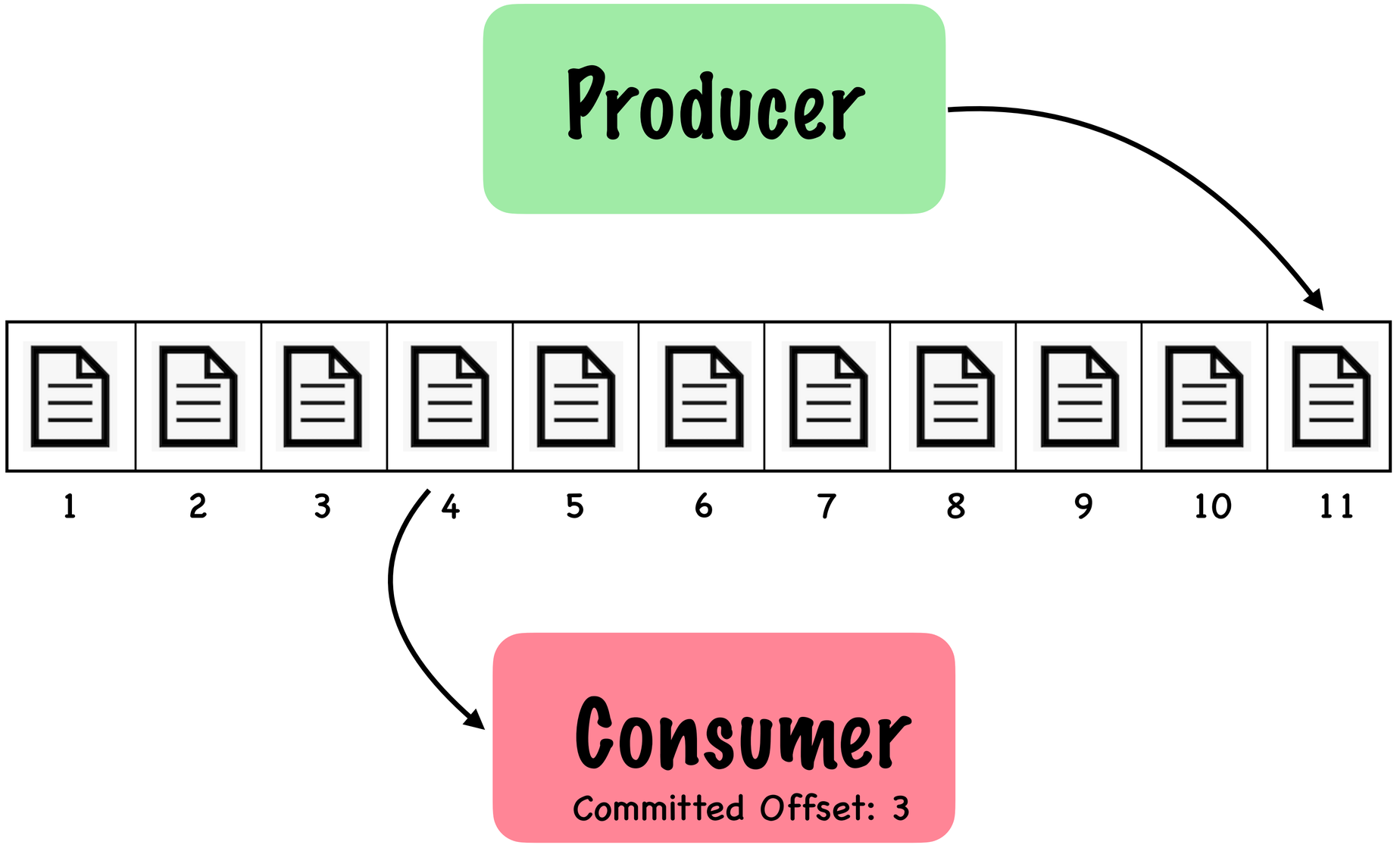
Consumer
Committed Offset: 3


Producer
1
2
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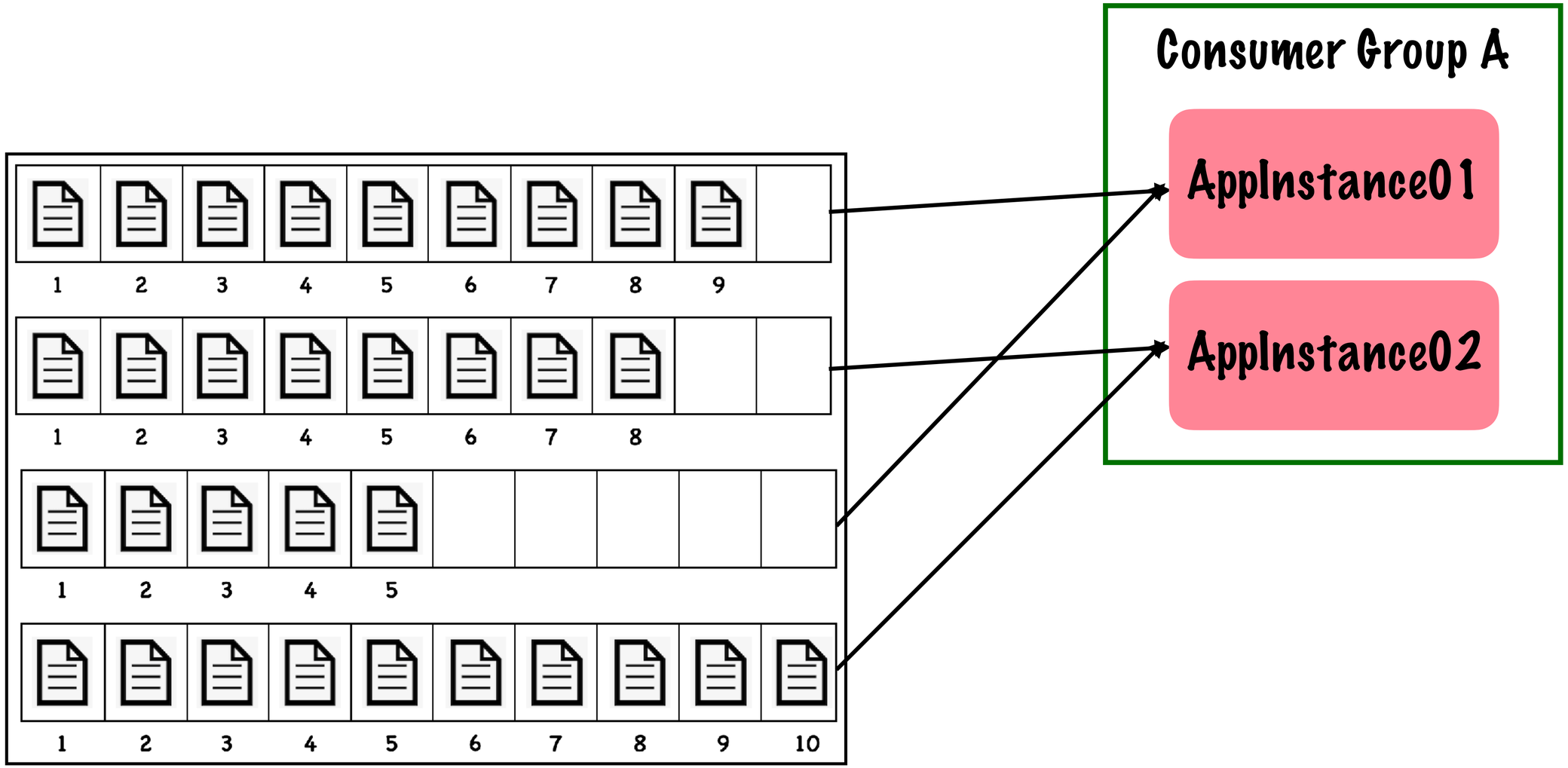
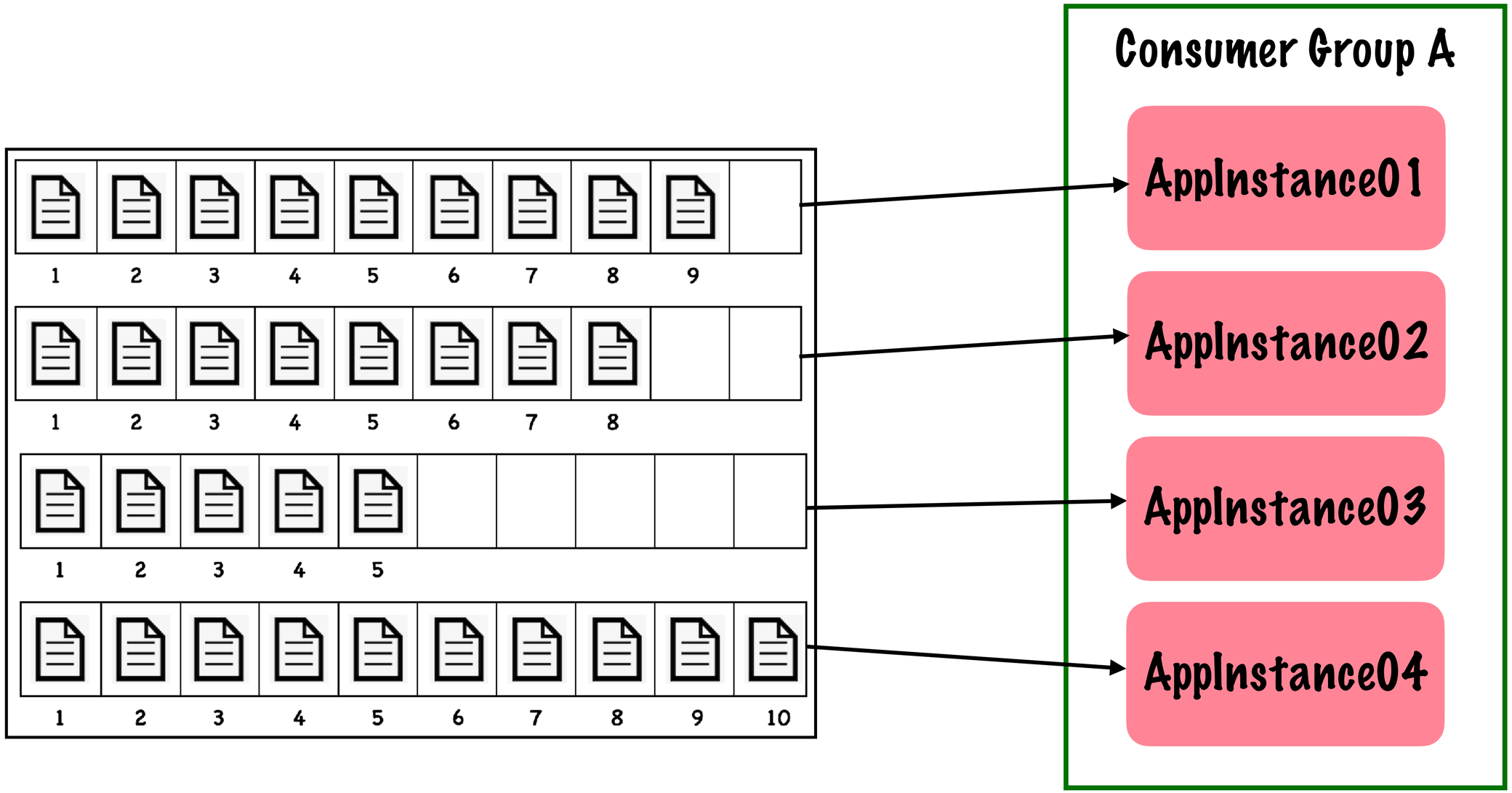
10
11
Consumer
Committed Offset: 3


Consumer Group A
AppInstance01
AppInstance02
1 2 3 4 5 6 7 8 9
1 2 3 4 5 6 7 8
1 2 3 4 5
1 2 3 4 5 6 7 8 9 10



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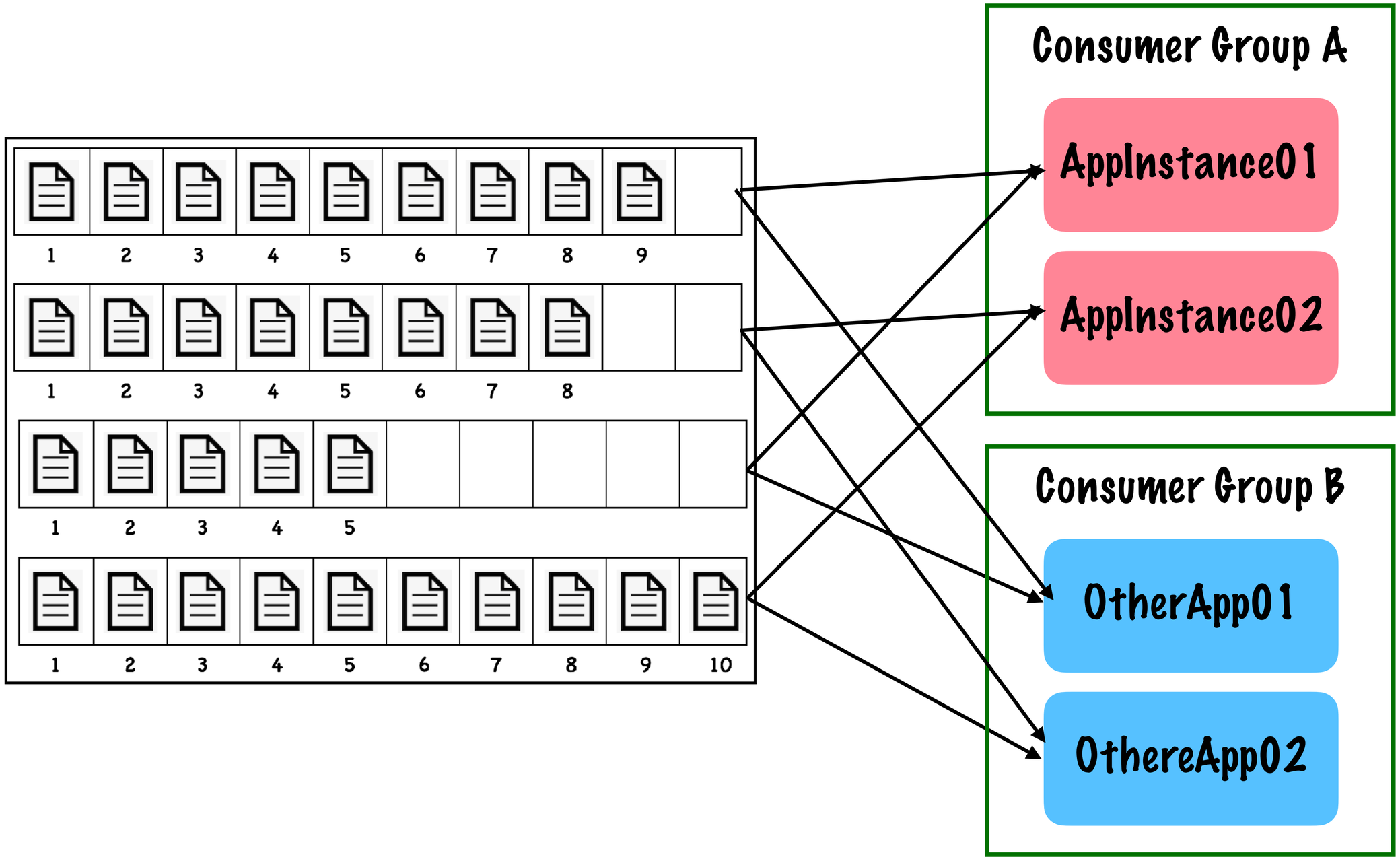

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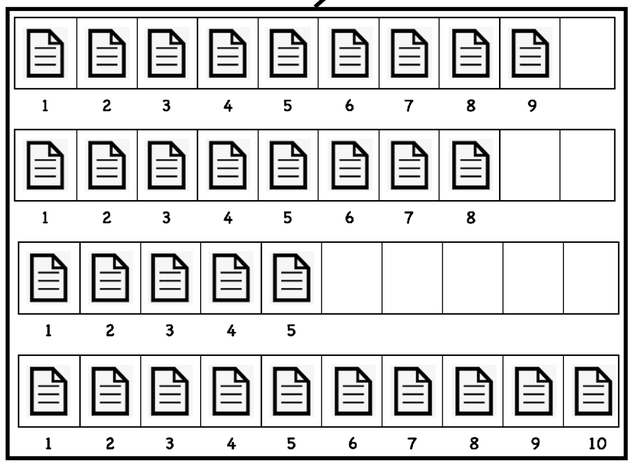
Kafka Streams



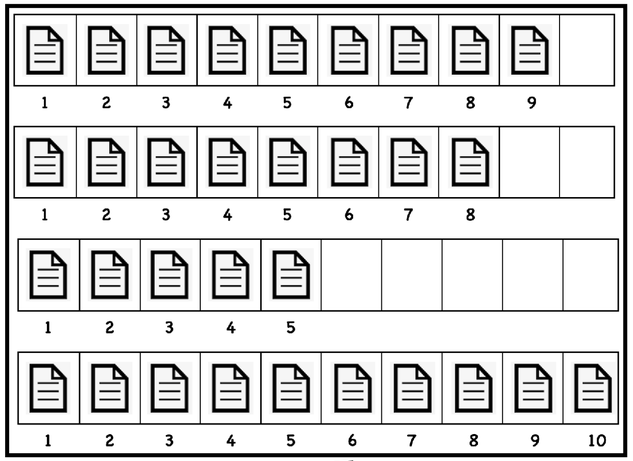
Input Topic

Consumer

```
stream(input topic)
.filter()
.map()
.flatMap()
.branch()
.reduce()
.groupByKey()
.peek()
.to(output topic)
```

Producer

Output Topic



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Event Streaming Libraries

https://github.com/quixio/quix-streams

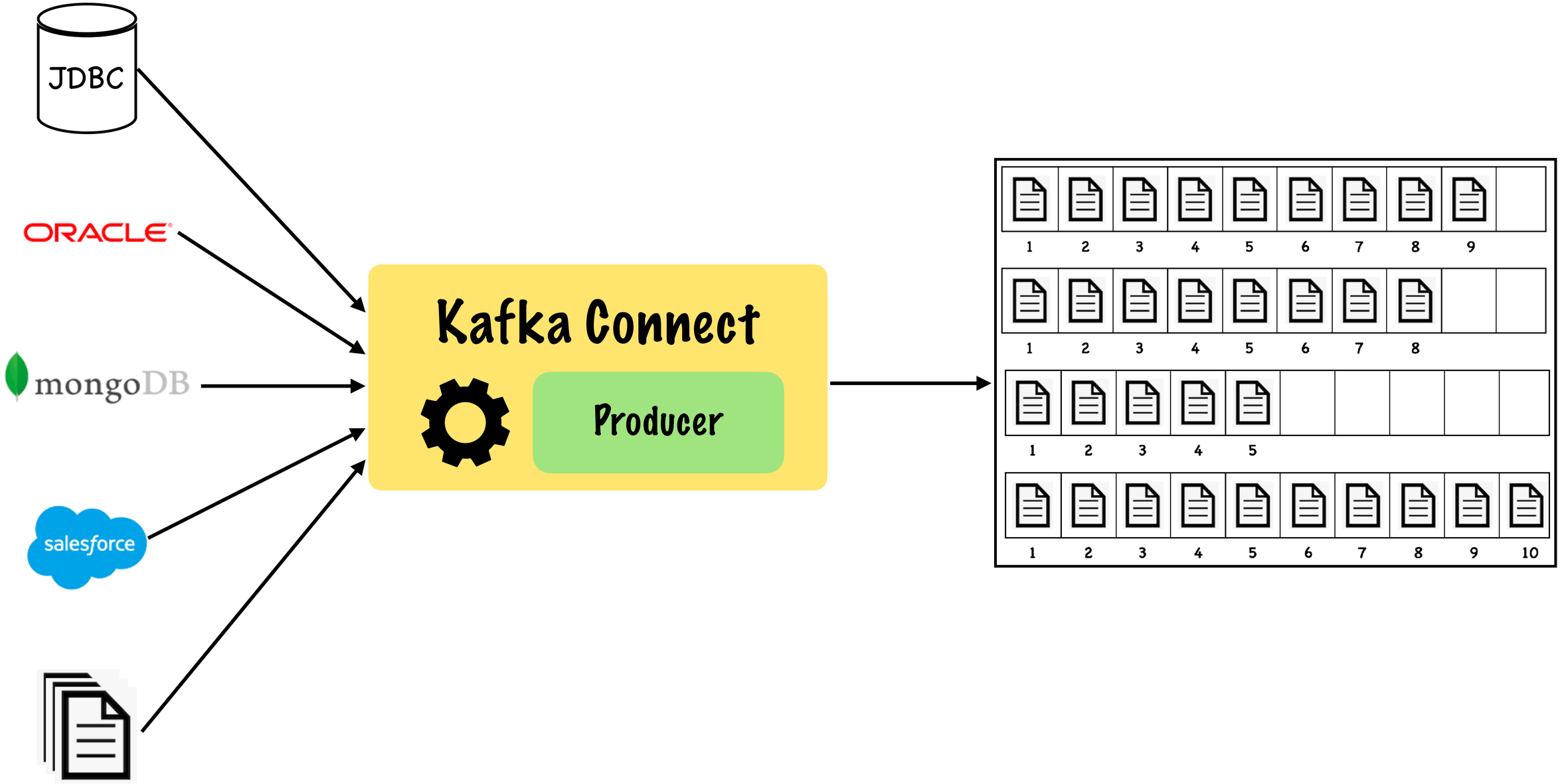
https://github.com/faust-streaming/faust

https://github.com/lovoo/goka

https://github.com/quixio/quix-streams

https://github.com/LGouellec/kafka-streams-dotnet

https://github.com/ArroyoSystems/arroyo



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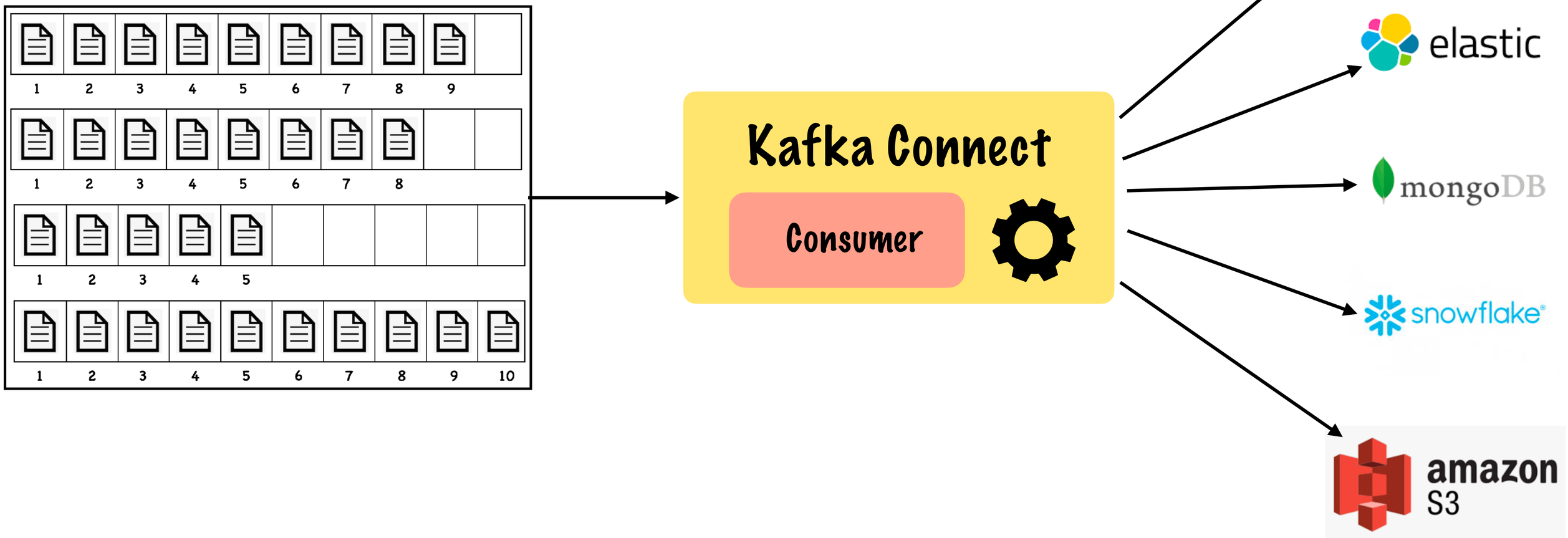

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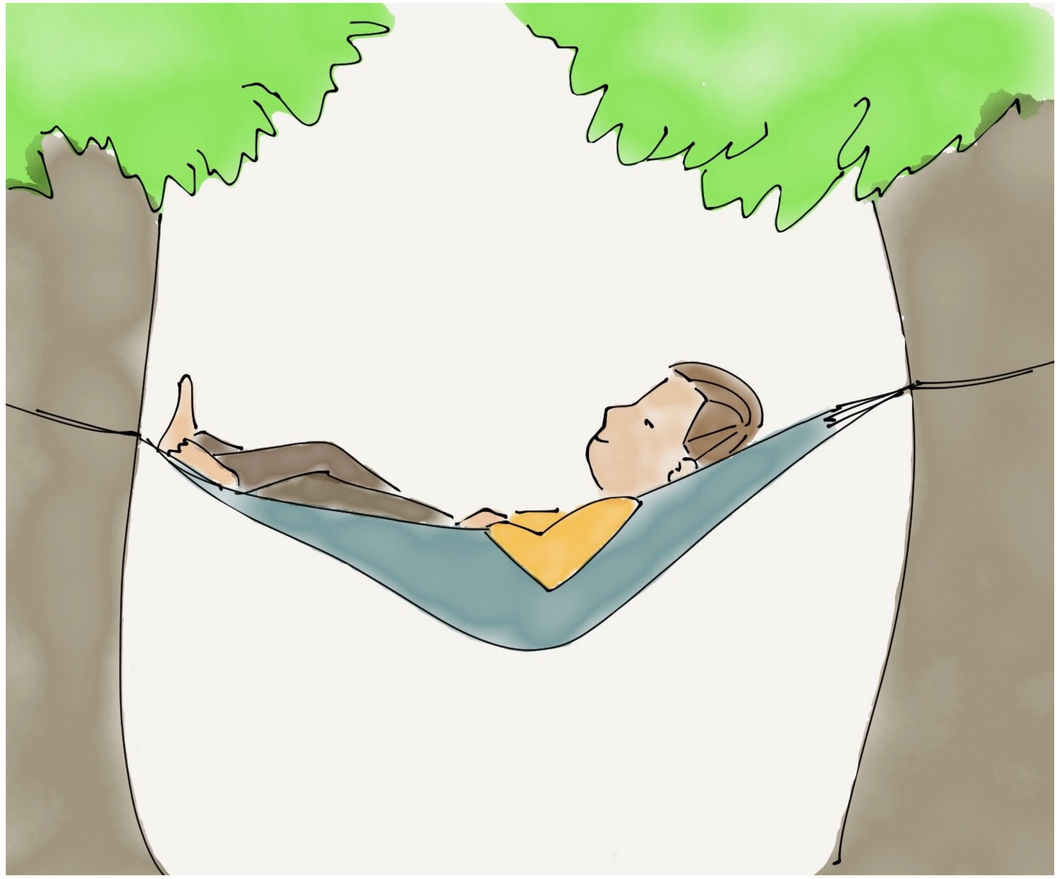

```
curl -X POST -H "Content-Type: application/vnd.kafka.json.v2+json" \
     -H "Accept: application/vnd.kafka.v2+json" \
     --data '{"records":[{"value":{"foo":"bar"}}]}' \
     "http://localhost:8082/topics/jsontest"
```

Command Line Tools

Kafka Shell Scripts
- Start and stop brokers
- Create / manage topics
- Produce / consume events

Confluent CLI - https://docs.confluent.io/confluent-cli/current/overview.html
- Start / stop services in Confluent Platform / Cloud
- Manage access control and secrets

kcat (formerly Kafkacat) - https://github.com/edenhill/kcat
- Produce / consume events in style

kcctl (Casey Cuddle) - https://github.com/kcctl/kcctl
- Command-line client for Kafka Connect

Graphical User Interfaces

Confluent Control Center

https://docs.confluent.io/platform/current/control-center/overview.html

Conduktor

https://www.conduktor.io

Kafdrop

https://github.com/obsidiandynamics/kafdrop

akHQ

https://github.com/tchiotludo/akhq

UI For Apache Kafka

https://github.com/provectus/kafka-ui

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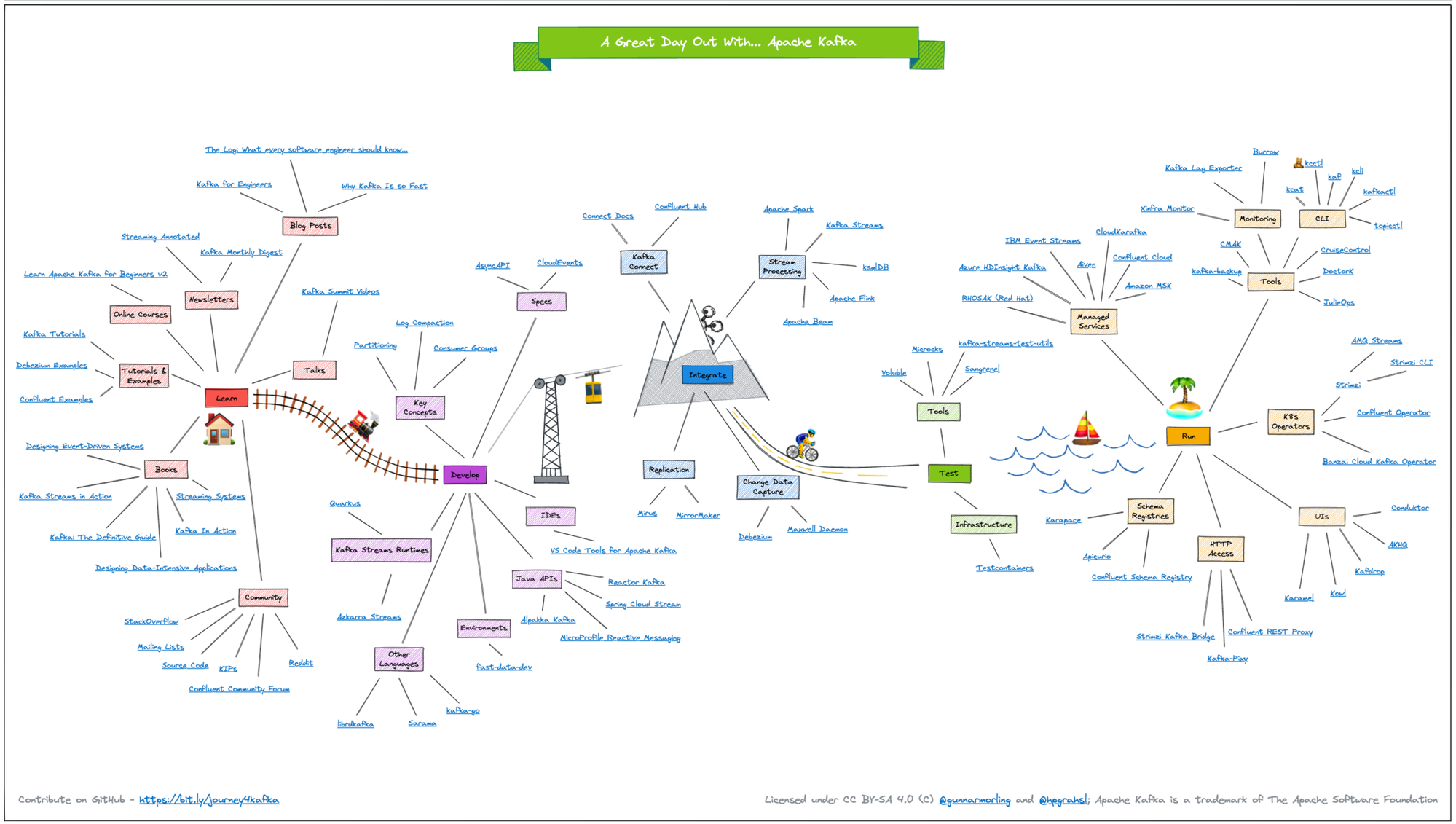
A Great Day Out With Kafka



https://a-great-day-out-with.github.io/kafka.html

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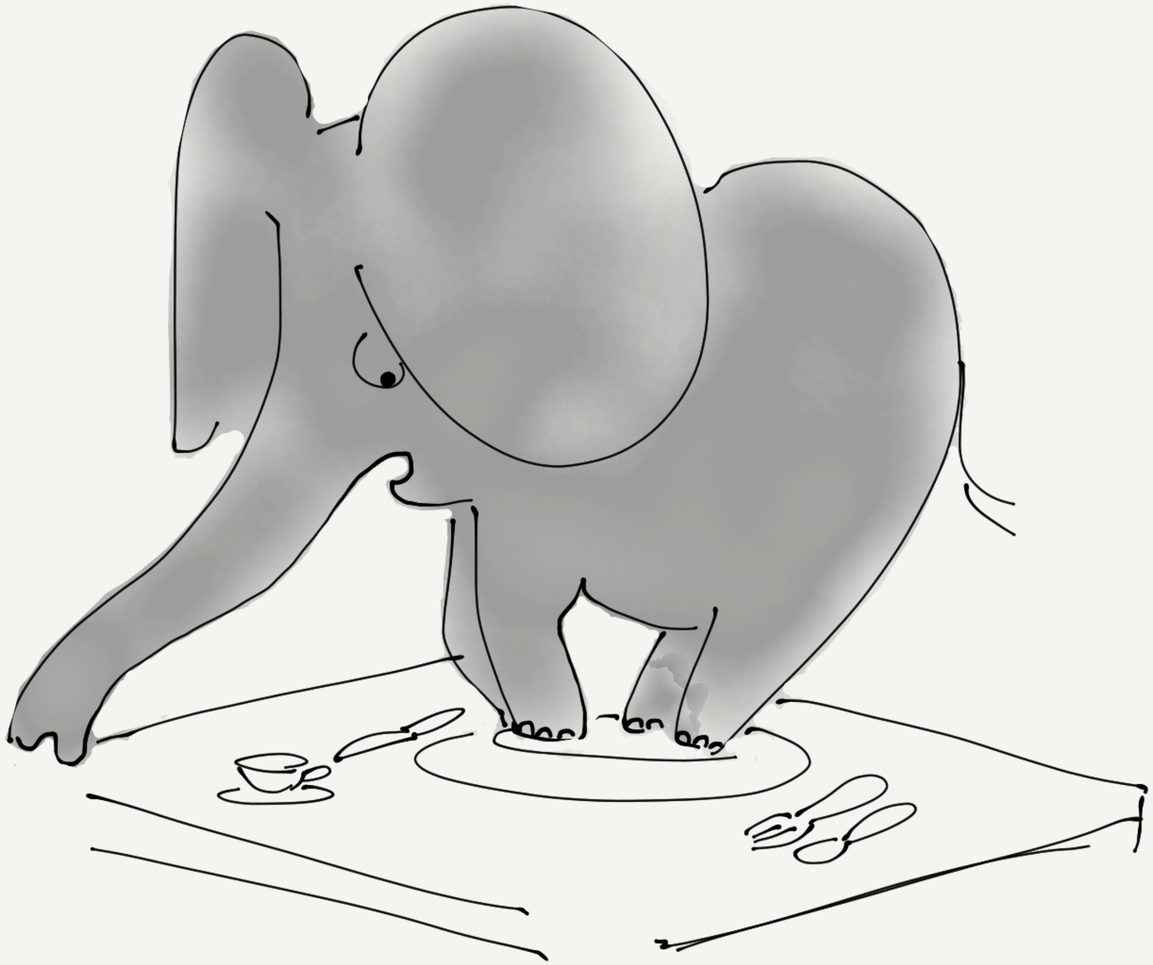

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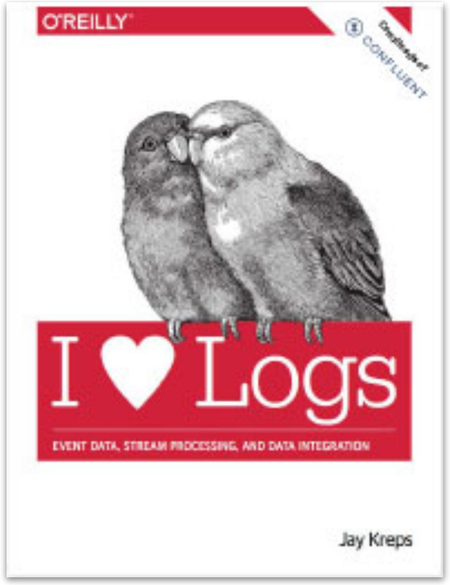
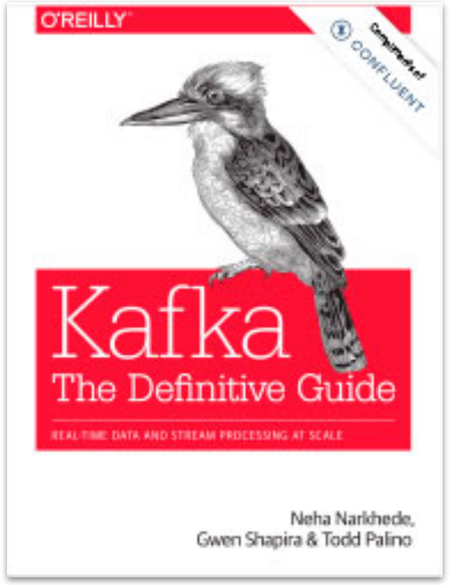
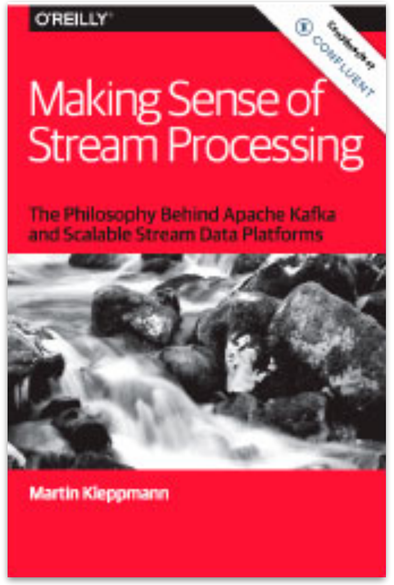
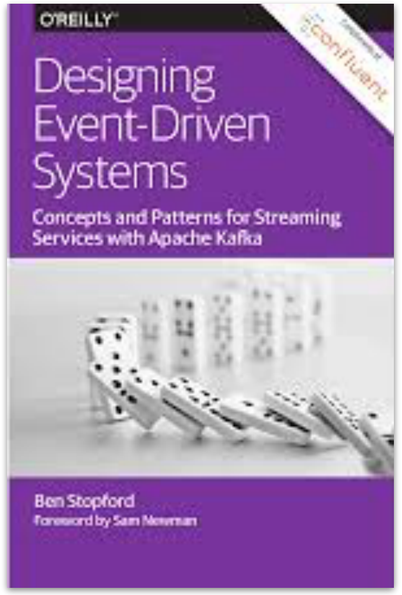
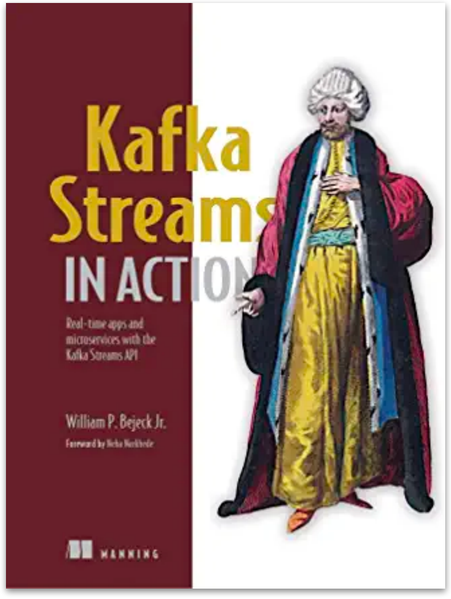
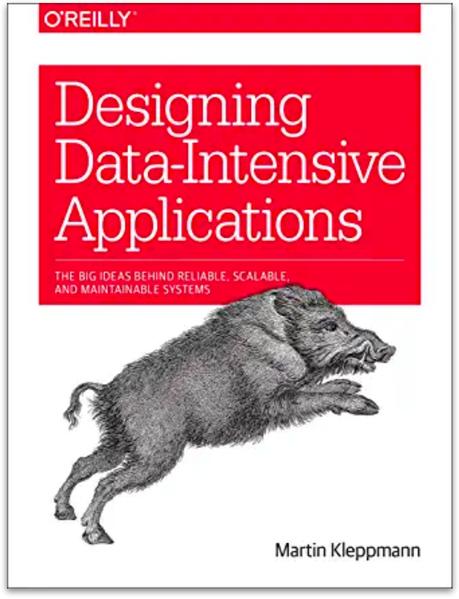

O'REILLY
CONFLUENT
I ♥ Logs
EVENT DATA, STREAM PROCESSING, AND DATA INTEGRATION
Jay Kreps

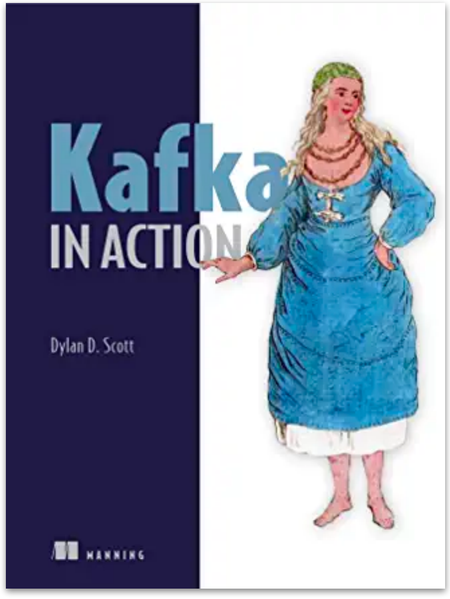

O'REILLY
CONFLUENT
Kafka
The Definitive Guide
REAL-TIME DATA AND STREAM PROCESSING AT SCALE
Neha Narkhede,
Gwen Shapira & Todd Palino

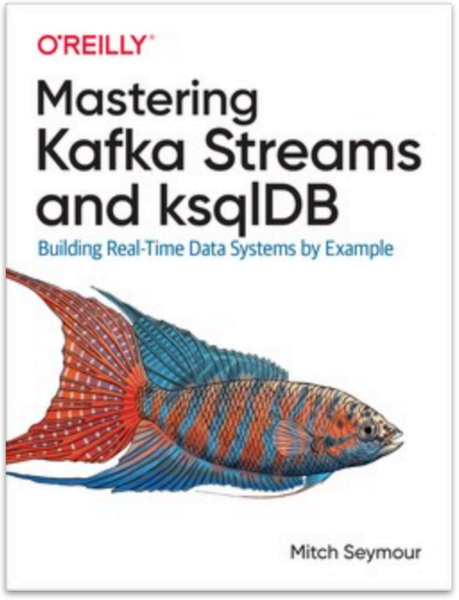

O'REILLY
CONFLUENT
Making Sense of Stream Processing
The Philosophy Behind Apache Kafka and Scalable Stream Data Platforms
Martin Kleppmann


O'REILLY
CONFLUENT
Designing Event-Driven Systems
Concepts and Patterns for Streaming Services with Apache Kafka
Ben Stopford
Foreword by Sam Newman


Kafka Streams
IN ACTION
Real-time apps and microservices with the Kafka Streams API
William P. Bejeck Jr.
MANNING


O'REILLY
Designing Data-Intensive Applications
THE BIG IDEAS BEHIND RELIABLE, SCALABLE, AND MAINTAINABLE SYSTEMS
Martin Kleppmann


Kafka
IN ACTION
Dylan D. Scott
MANNING


O'REILLY
Mastering Kafka Streams and ksqlDB
Building Real-Time Data Systems by Example
Mitch Seymour

Blogs and Articles

Kafka articles on dev.to - https://dev.to/t/kafka

Kafka on Medium - https://medium.com/search?q=kafka

Confluent's blog - https://www.confluent.io/blog

Robin Moffatt's blog - https://rmoff.net

Kafka on Aiven's blog - https://aiven.io/blog/category/kafka

Quix Blog - https://aiven.io/blog/category/kafka

Apache Kafka

Pages

Blog

SPACE SHORTCUTS

Retrospectives

CHILD PAGES

Kafka Improvement Proposals

KIP-500: Replace ZooKeeper ...

Dashboard / Index / Kafka Improvement Proposals

KIP-500: Replace ZooKeeper with a Self-Managed Metadata Quorum

Created by Colin McCabe, last modified on Jul 09, 2020

Status

Current state: Accepted

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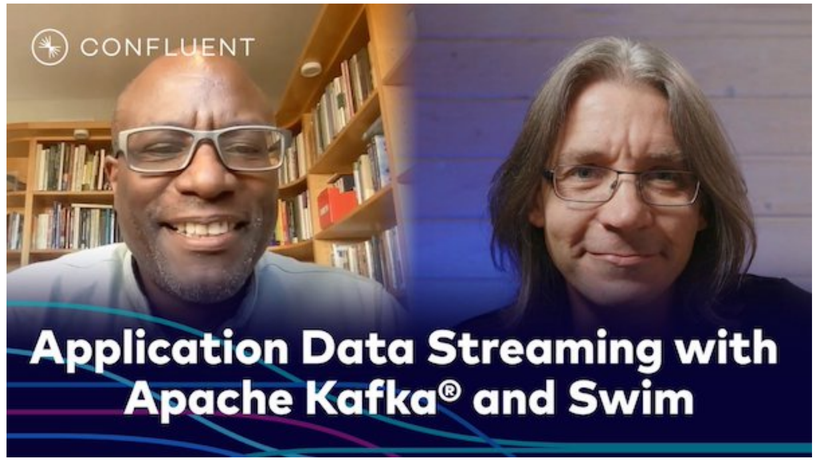
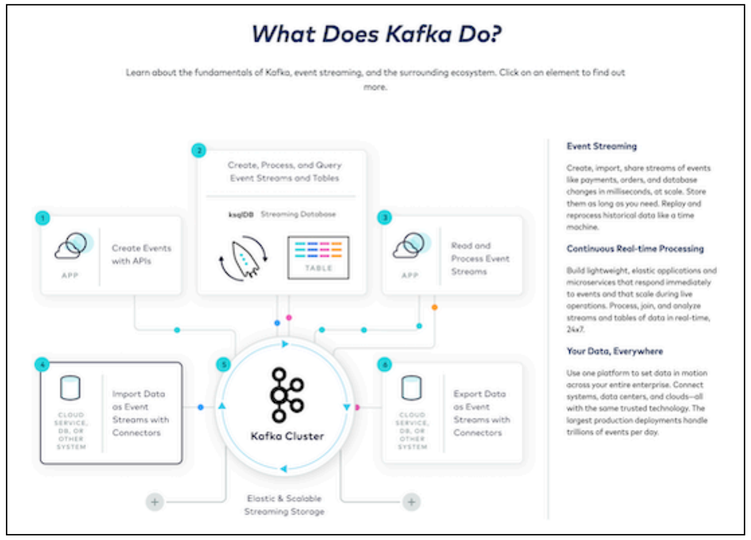
Streaming Audio Podcast

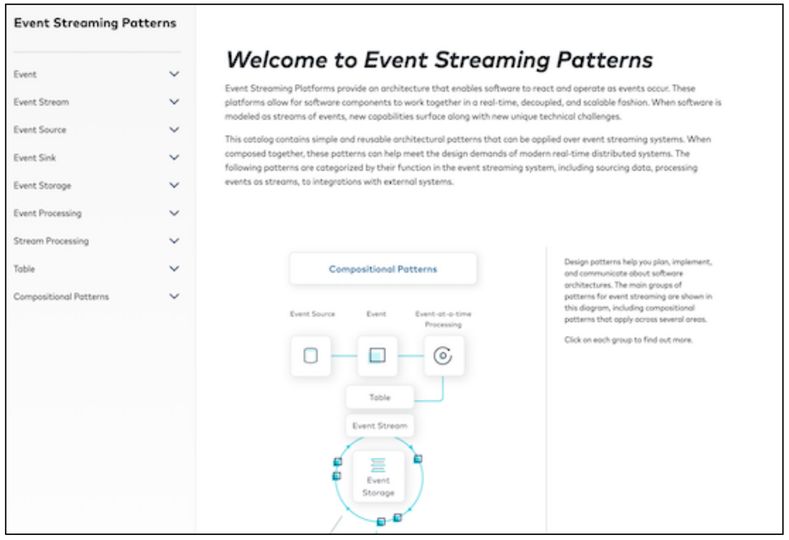
with Kris Jenkins





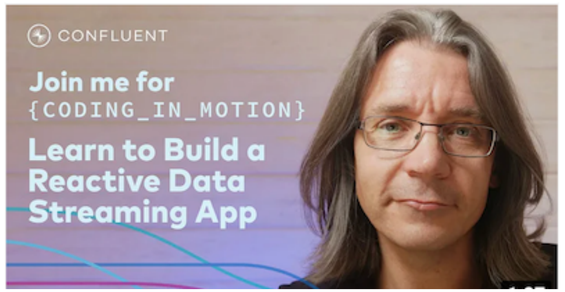
Kafka Deep Dives

Technical Articles



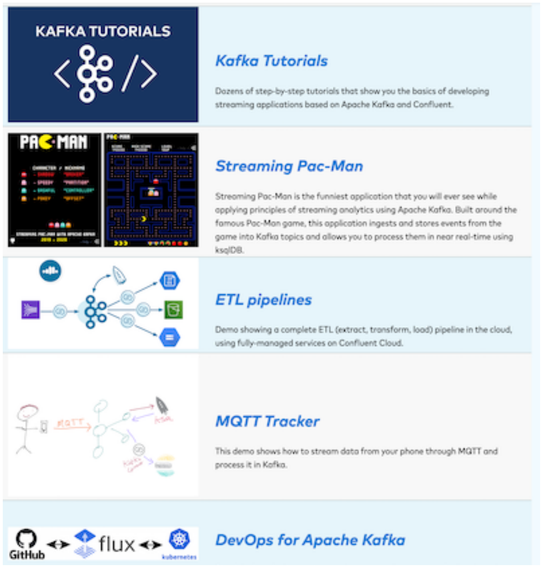
Event Streaming Patterns

In-depth Video Courses



Live Coding

CONFLUENT
Developer



Tutorials and Demos

https://www.youtube.com/playlist?list=PLa7VYi0yPIH1odVnZC430071CVD_4Sx1e

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Kafka Education Portals

Conduktor Kafkademy

https://www.conduktor.io/kafka/

Apache Kafka Getting Started Guide

https://kafka.apache.org/documentation/#gettingStarted

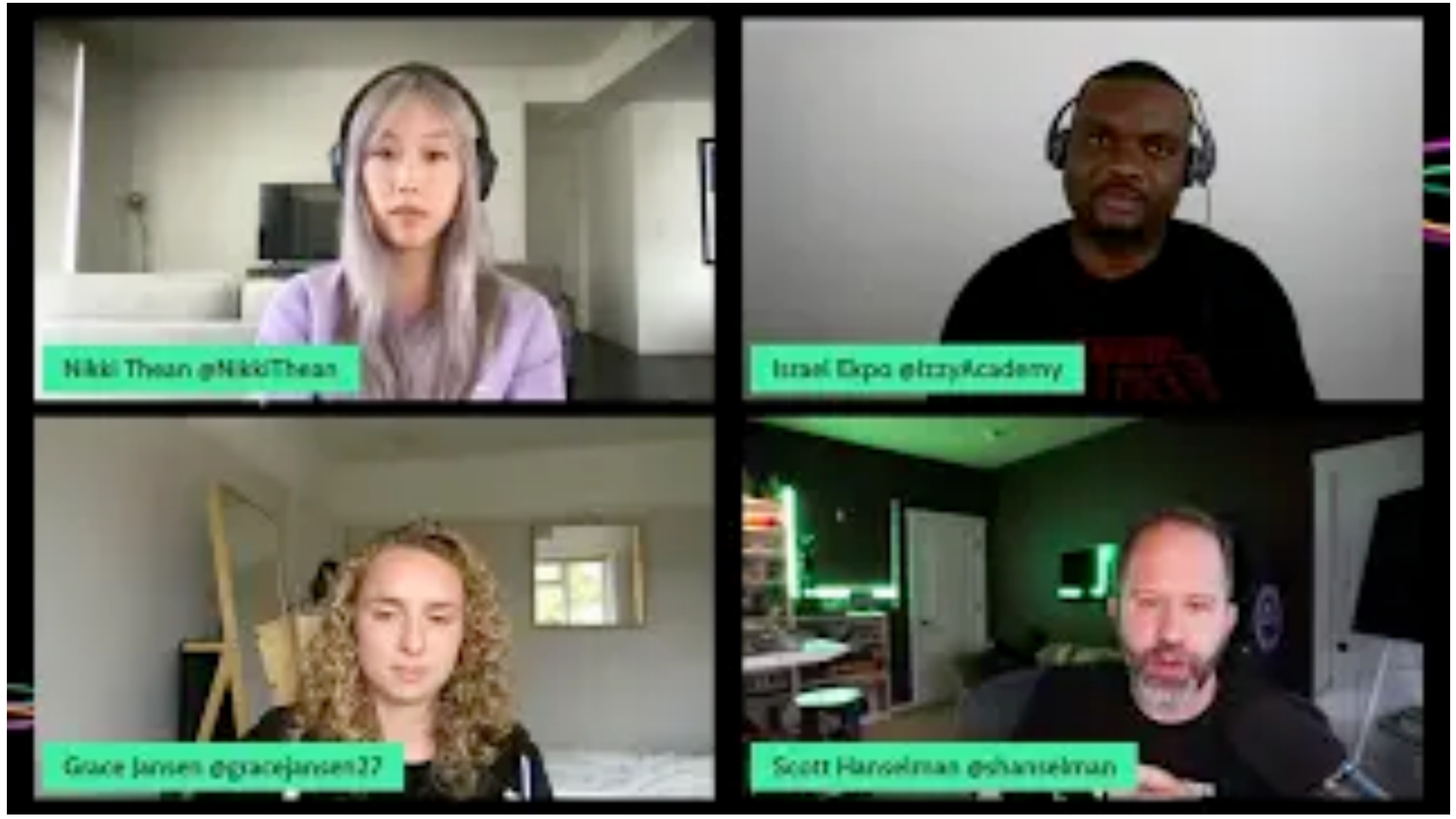
Aiven Developer Center - Kafka

https://aiven.io/developer/kafka

Tutorials Point Kafka Series

https://www.tutorialspoint.com/apache_kafka/index.htm

The Joy of (Kafka) Community



https://www.youtube.com/watch?v=MchgdIWH7MY

Community Forums and Slack

Confluent Community Slack

https://www.confluent.io/en-gb/community/ask-the-community

The Stream - Stream processing community

https://quix.io/community

Quix Forum

https://forum.quix.io/

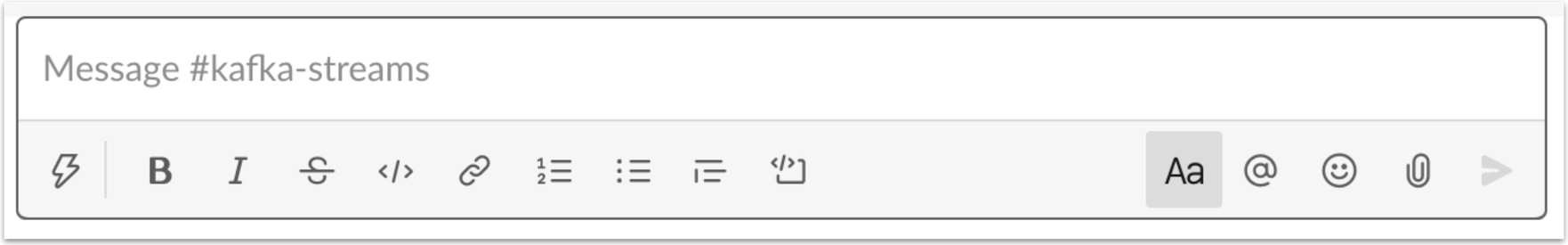
Aiven Forum

https://quix.io/community

Confluent Forum

https://forum.confluent.io/

Formatted Messages Are Easier To Read



For a single line of code, select and click </>

or wrap it in a pair of single back-ticks: `foo`

For code blocks (or logs) select all and click

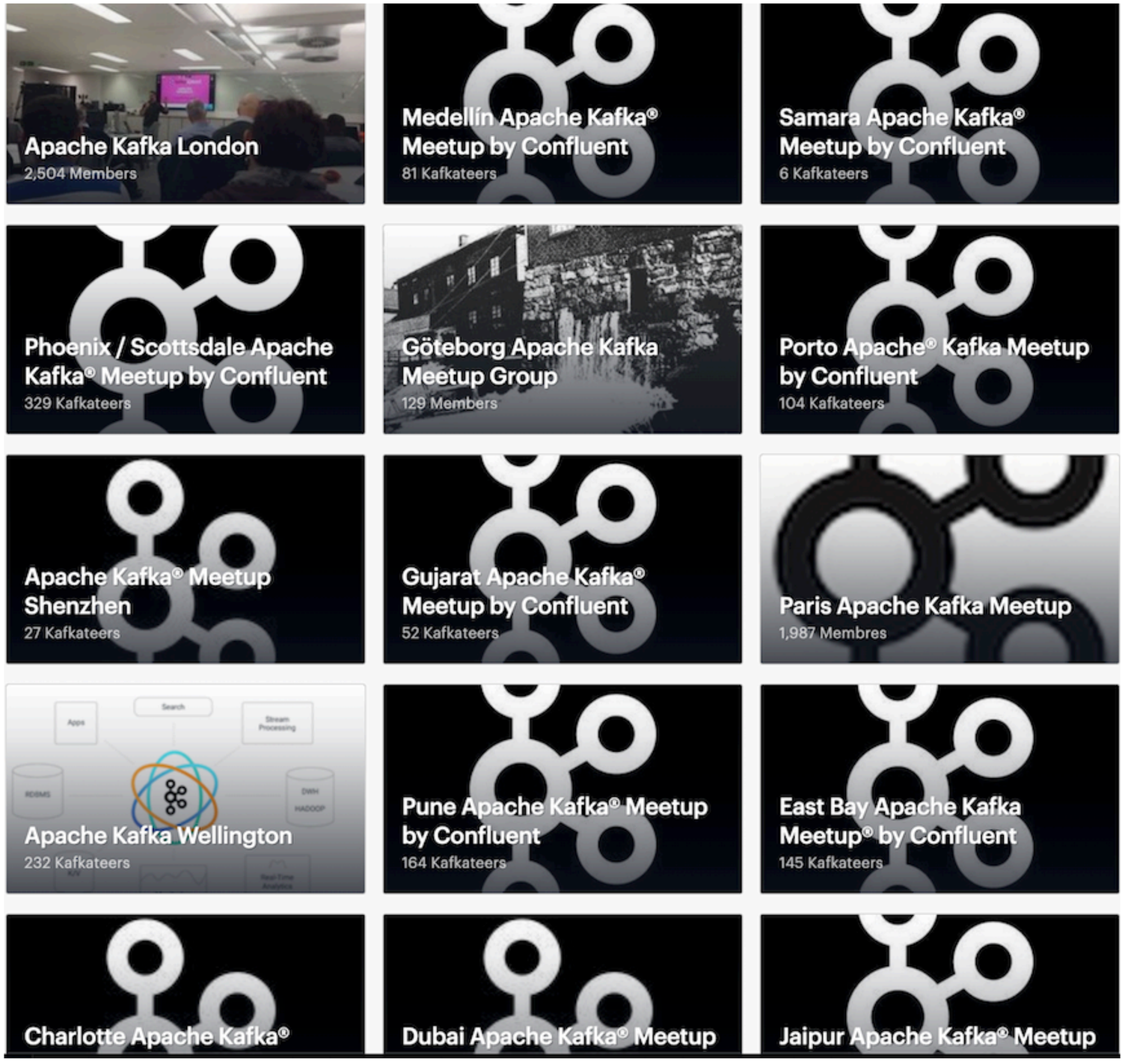
or wrap it all in triple back-ticks

```
```for (n : lotsOn) {
        System.out.println("foo");
}```
```

https://slack.com/help/articles/202288908-Format-your-messages

dave@quix.io

@daveklein
```



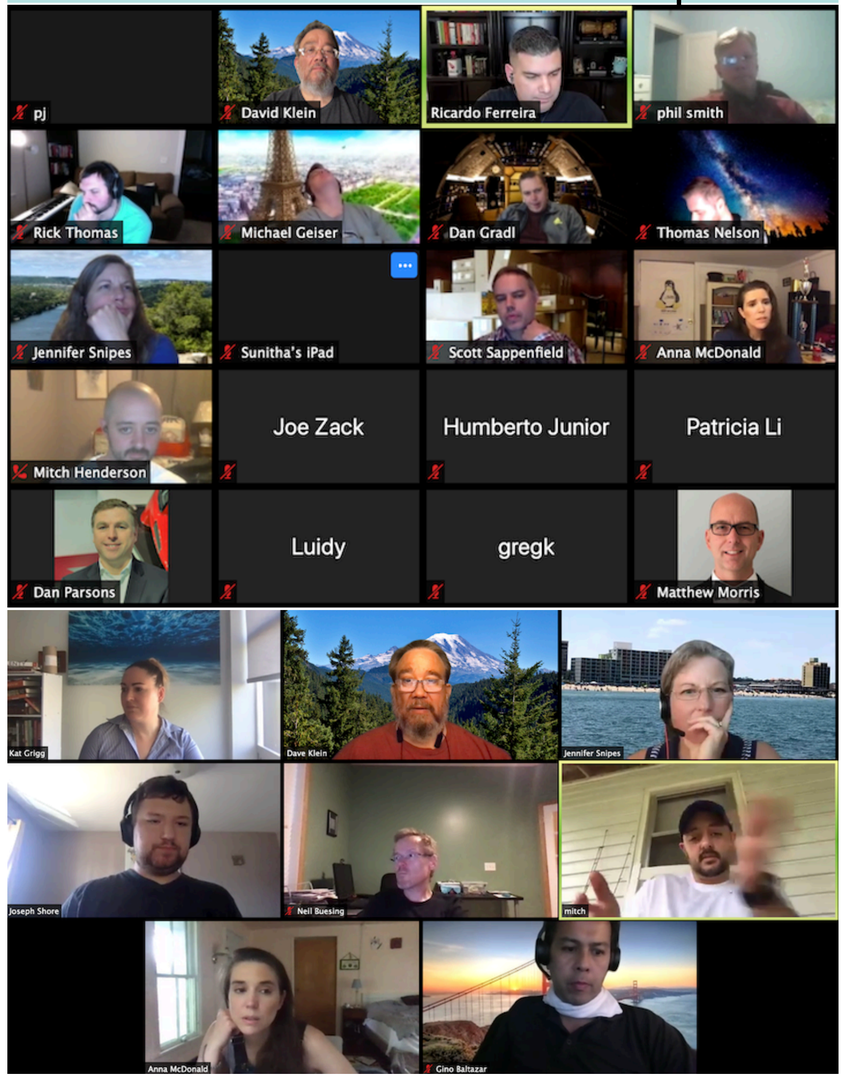
UPCOMING AND PAST MEETUPS

Meetup Hub

Here you can find out about upcoming in-person and virtual meetups, as well as content from past meetup events.

Click here for updates on new meetups

events.confluent.io/meetups



Confluent Community Catalysts

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Gerard Klijs
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Gunnar Morling
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Mateus Oliveira

Matteo Ferroni
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Mickael Maison
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Saumitra Srivastav 🇮🇳
@_saumitra_

Simon Aubury 🇦🇺
@SimonAubury

Vanitha Vellingiri

Wonyoung Choi 🇰🇷

Thank you!

Wednesday, 17 May

Real-time Event Processing with Python
Dave Klein
9:00 Breakout Room 4

Building Real-Time Applications at Scale: A Case Study in Cyclist Crash Detection
Tomas Neubauer
2:00 Breakout Room 3

Slide deck available at:

https://github.com/daveklein/welcome