



Readysset

A New Era For MySQL Caching

MySQL Belgium Days
02/01/2024

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- **Senior Software Engineer @ Readysset**
- **Senior Software Engineer @ Percona**
 - **Maintainer of Percona XtraBackup for MySQL**
- **Long time Community contributor**
- **MySQL Code Contributor**

Agenda



Agenda

- **Intro**
- **How Readysset Works**
- **Readysset Architecture**

Intro



Intro - Cache landscape in MySQL

- What is Cache

Intro - Cache landscape in MySQL

- **What is Cache**
- **Maintenance / Invalidation**

There are only two hard things in computer science: cache invalidation and naming things.

– Phil Karlton

Intro - Cache landscape in MySQL

- **What is Cache**
- **Maintenance / Invalidation**
- **MySQL Query Cache**

Intro - Cache landscape in MySQL

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- **InnoDB Buffer Pool**

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- **ProxySQL**

Intro - Cache landscape in MySQL

- **What is Cache**
- **Maintenance / Invalidation**
- **MySQL Query Cache**
- **InnoDB Buffer Pool**
- **ProxySQL**
- **External tools (eg.: Redis, memcache)**

Readysat



Readyset

- **Based on MIT PHD Thesis - Partial State in Dataflow-Based Materialized Views**
(Noria) by Jon Gjengset
- **<https://github.com/readyssettech/readysset>**
- **Core / Cloud**
- **No application code changes**
- **Automatic cache maintenance**
- **Horizontal Scale**
- **Wire compatible with MySQL & PostgreSQL**

How Readysset Works



How Readysset Works

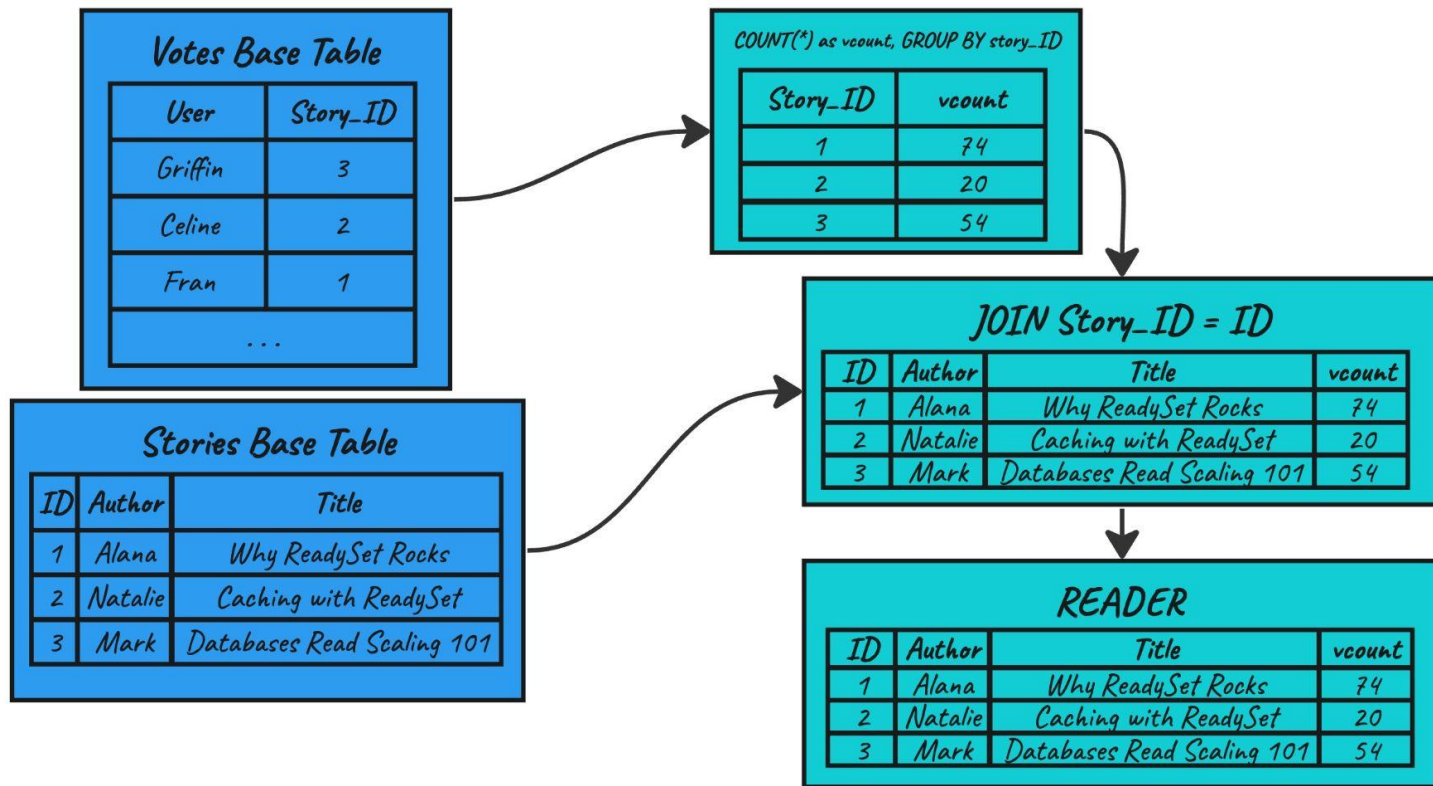
- **Snapshotting & CDC (Change Data Capture) / Replication**

How Readysset Works

- **Snapshotting & CDC (Change Data Capture) / Replication**
- **Dataflow Graph**

```
SELECT id, author, title, vcount
FROM stories JOIN
(SELECT story_id, COUNT(*) AS vcount
   FROM votes GROUP BY story_id) AS VoteCount
  ON VoteCount.story_id = stories.id
WHERE stories.id = ?;
```

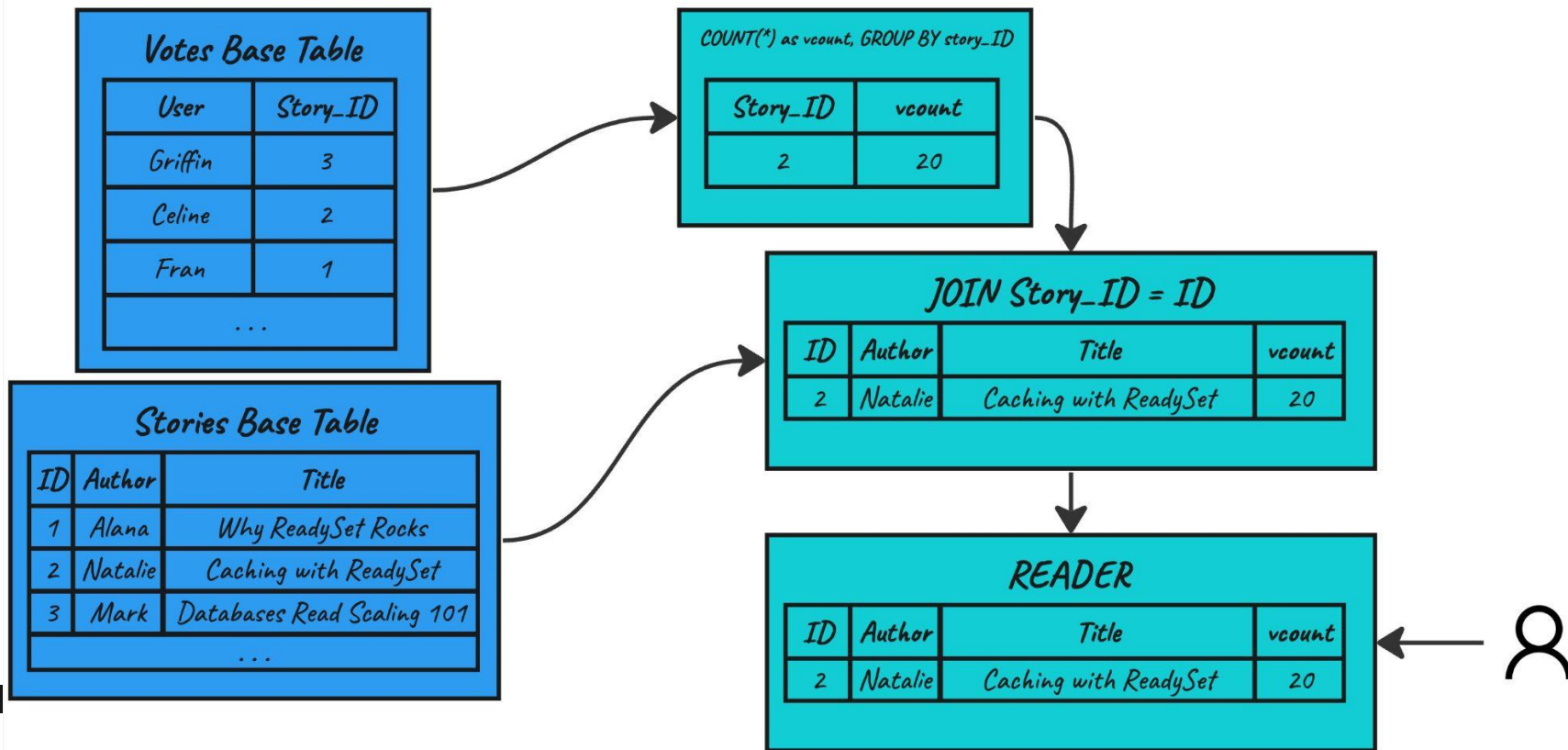

How Readysset Works - DataFlow Graph



How Readyset Works

- **Snapshotting & CDC (Change Data Capture) / Replication**
- **Dataflow Graph**
- **Partial Materialization**

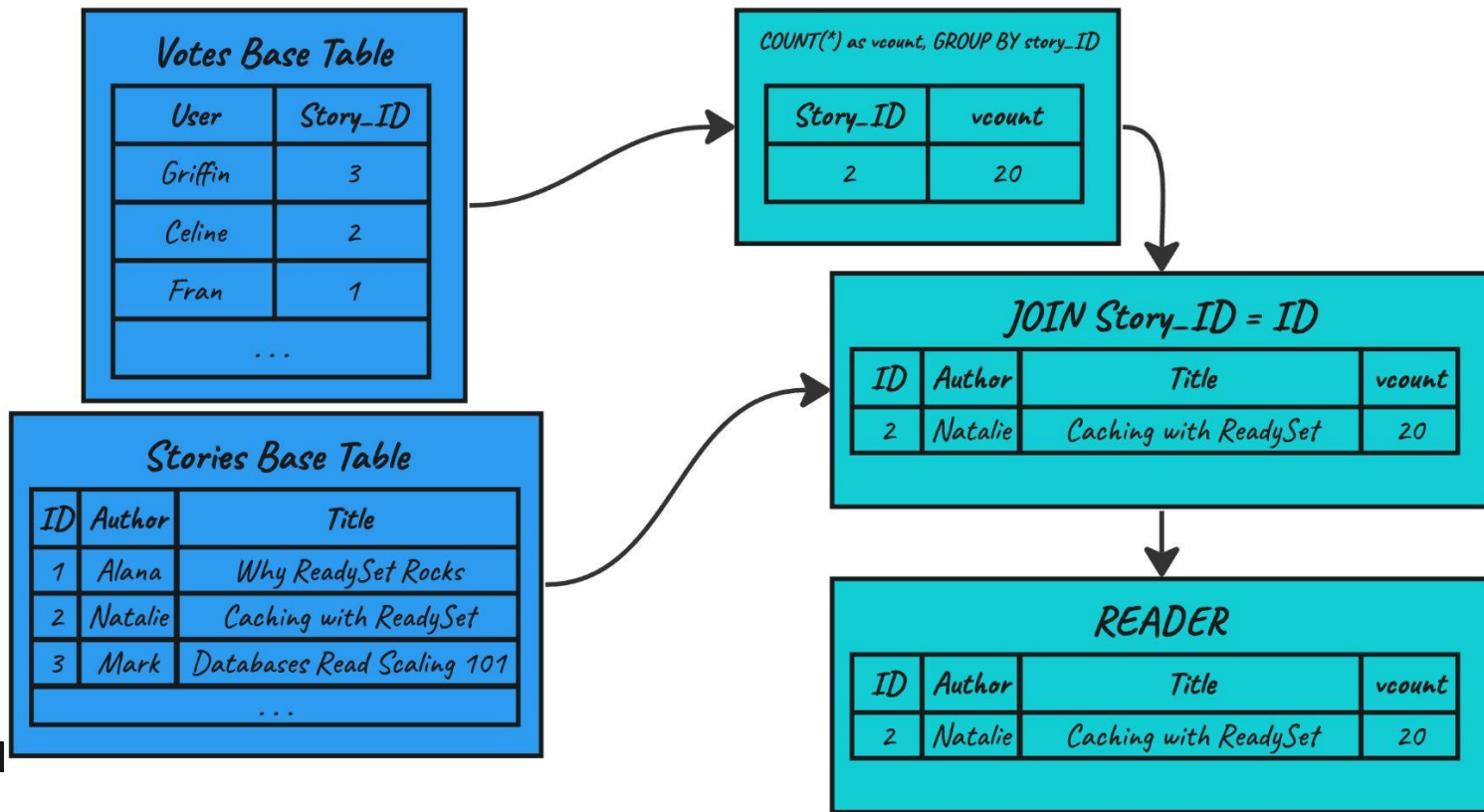
How Readysset Works - Partial Materialization



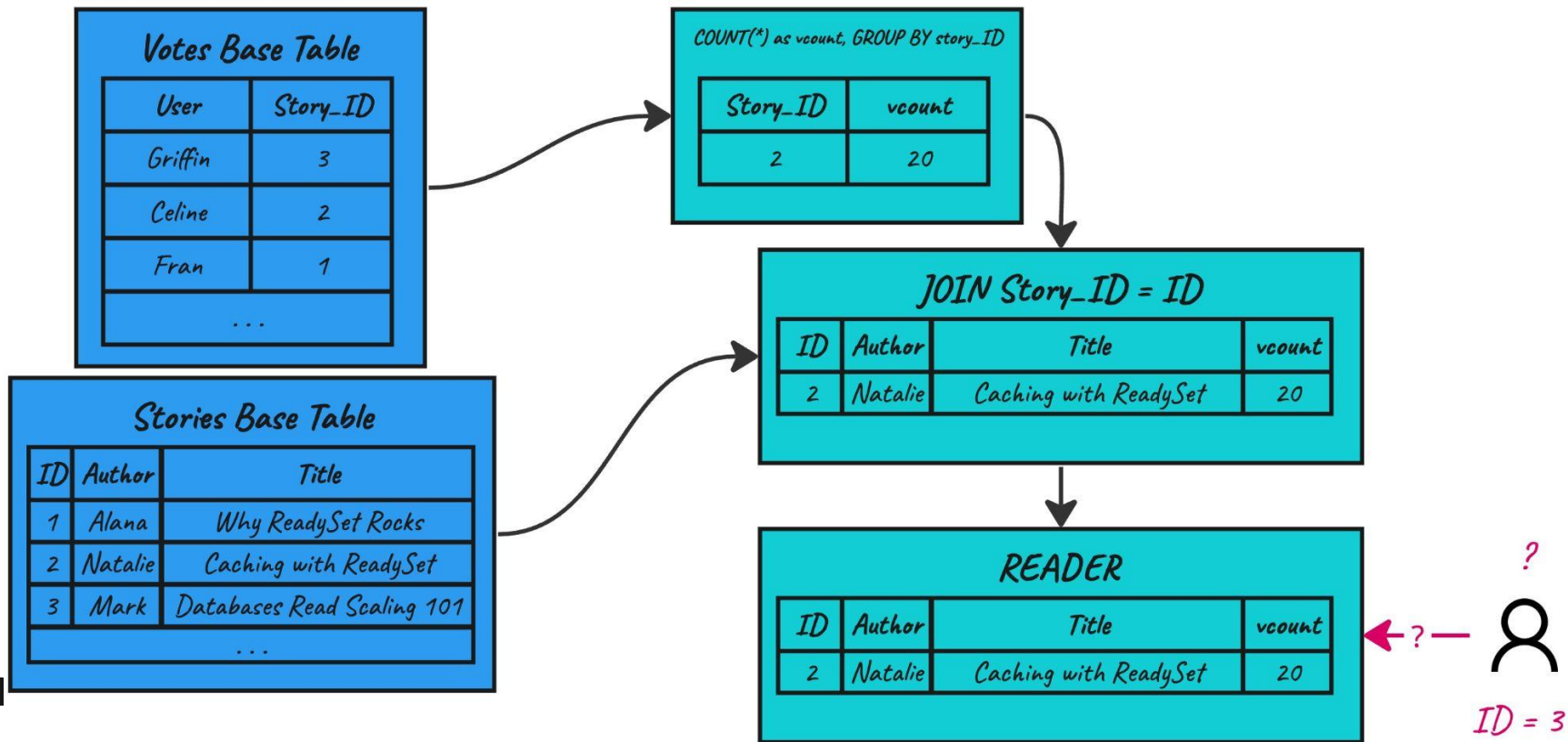
How Readyset Works

- **Snapshotting & CDC (Change Data Capture) / Replication**
- **Dataflow Graph**
- **Partial Materialization**
- **Cache Miss**

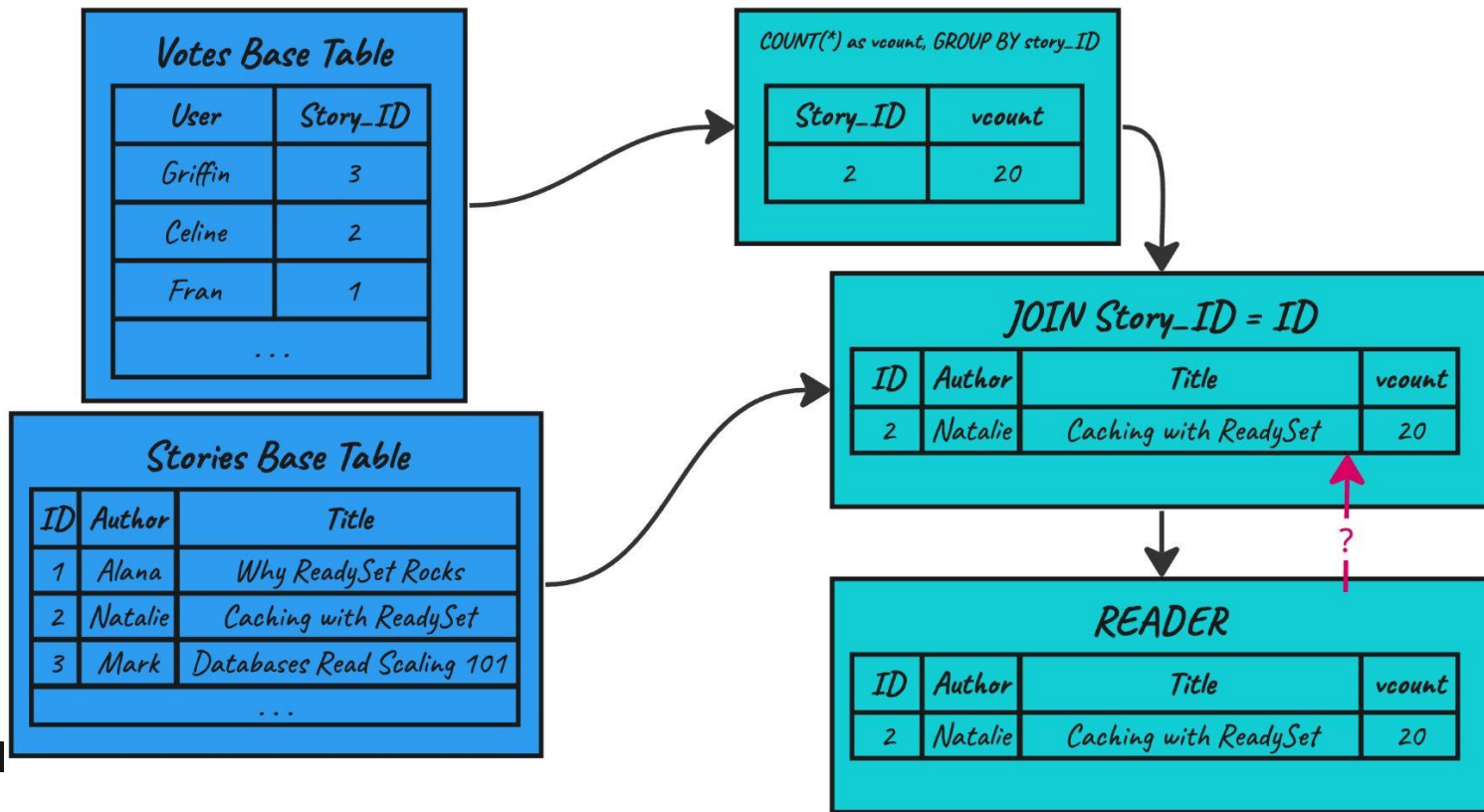
How Readysset Works - Partial Materialization



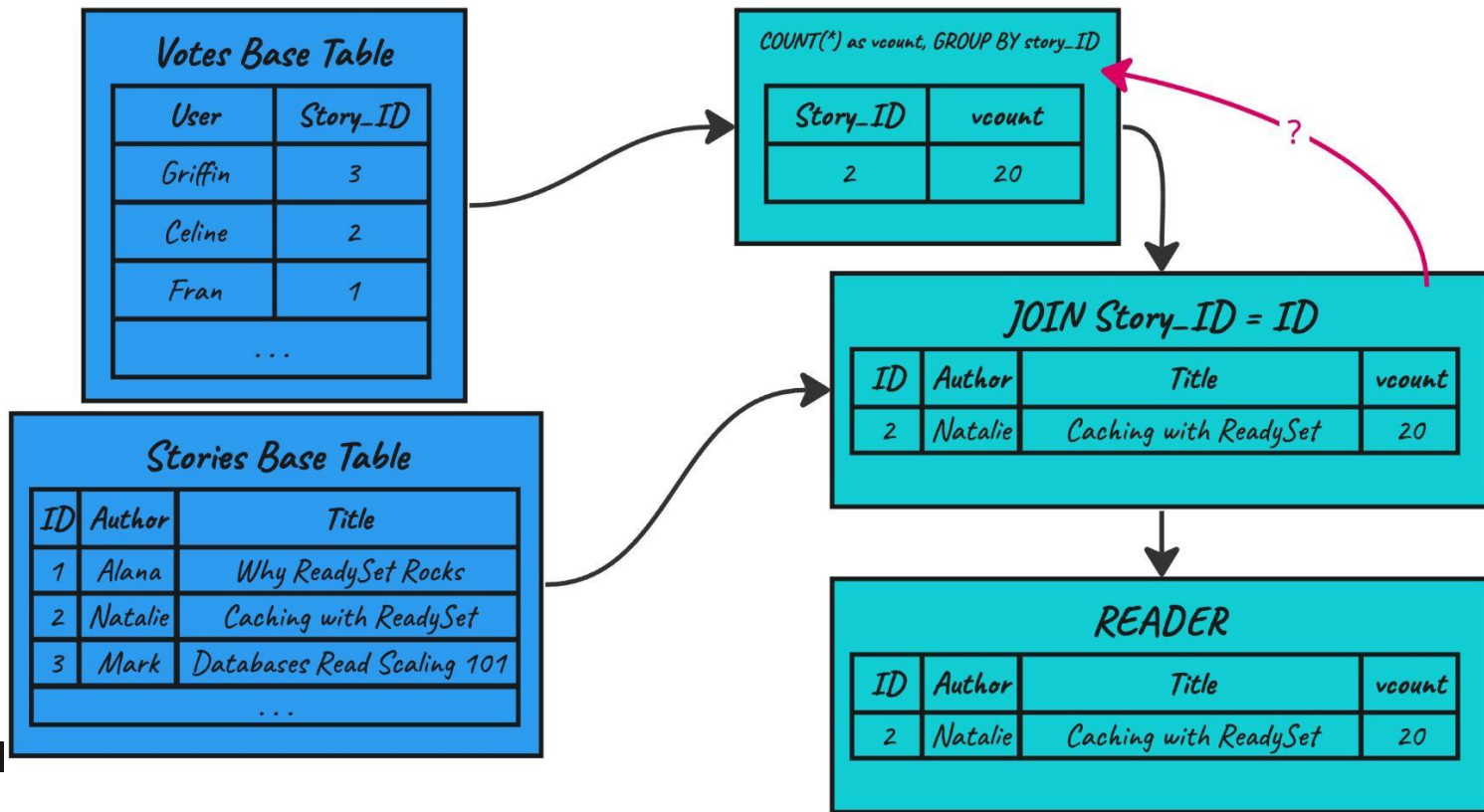
How Readysset Works - Partial Materialization



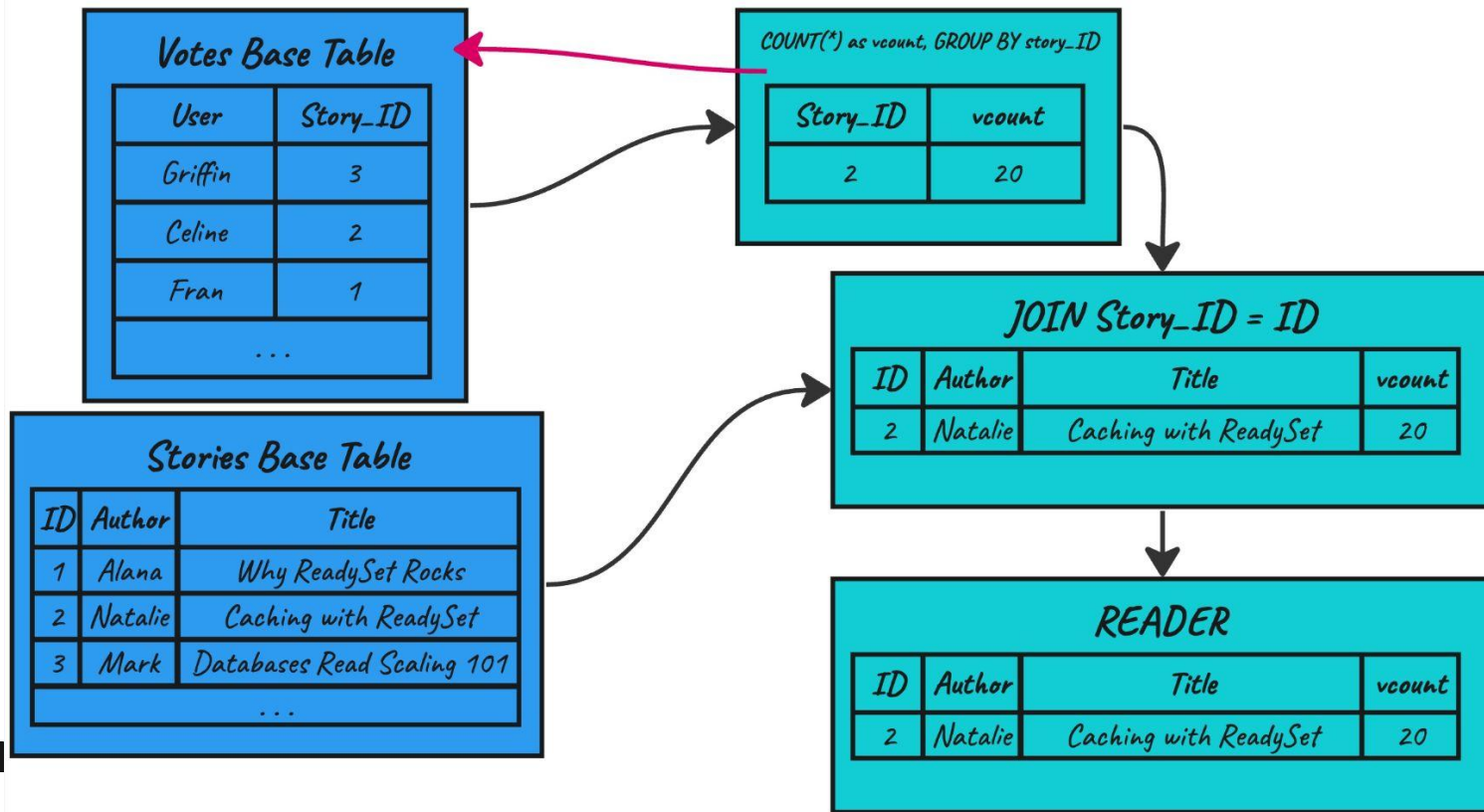
How Readysset Works - Partial Materialization



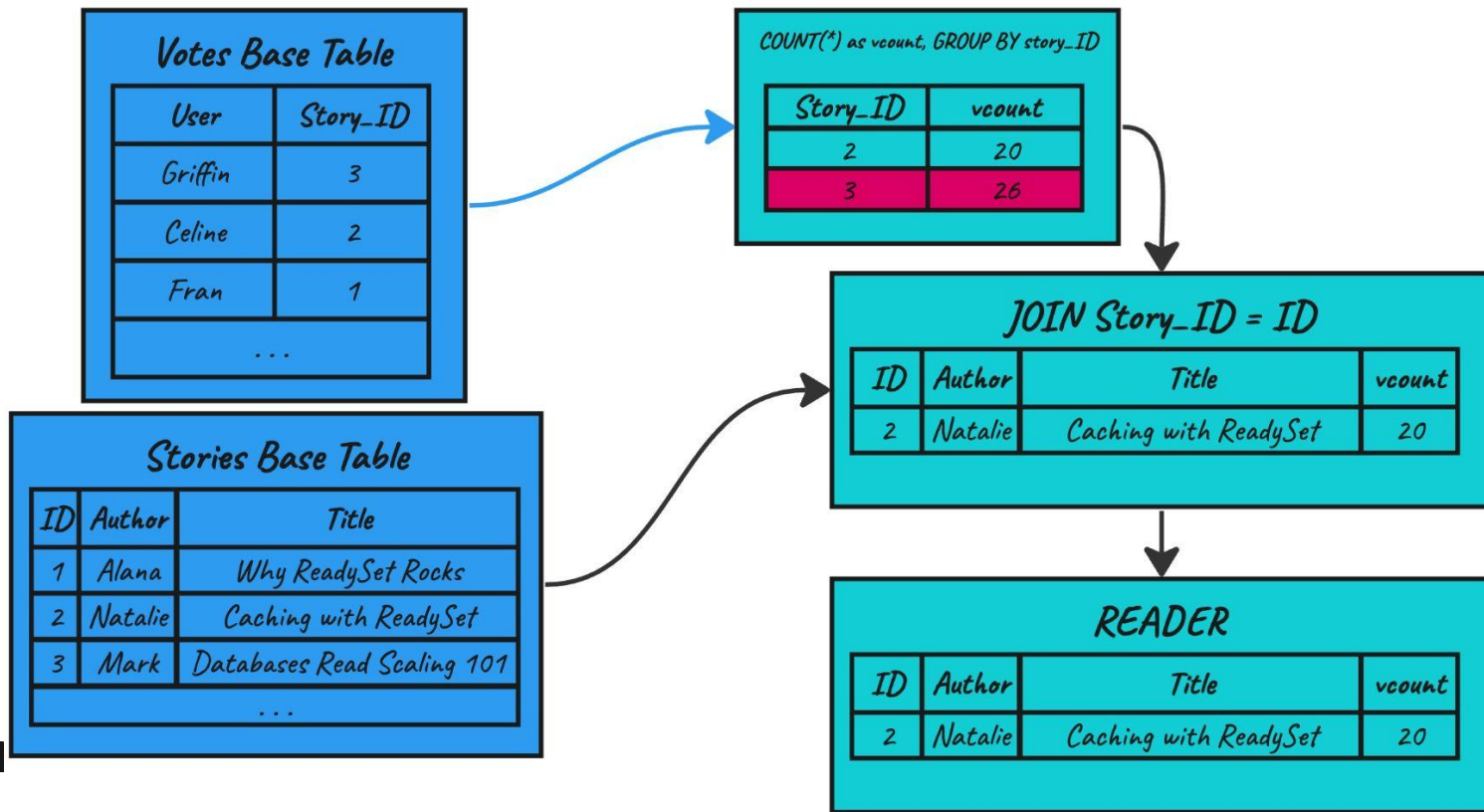
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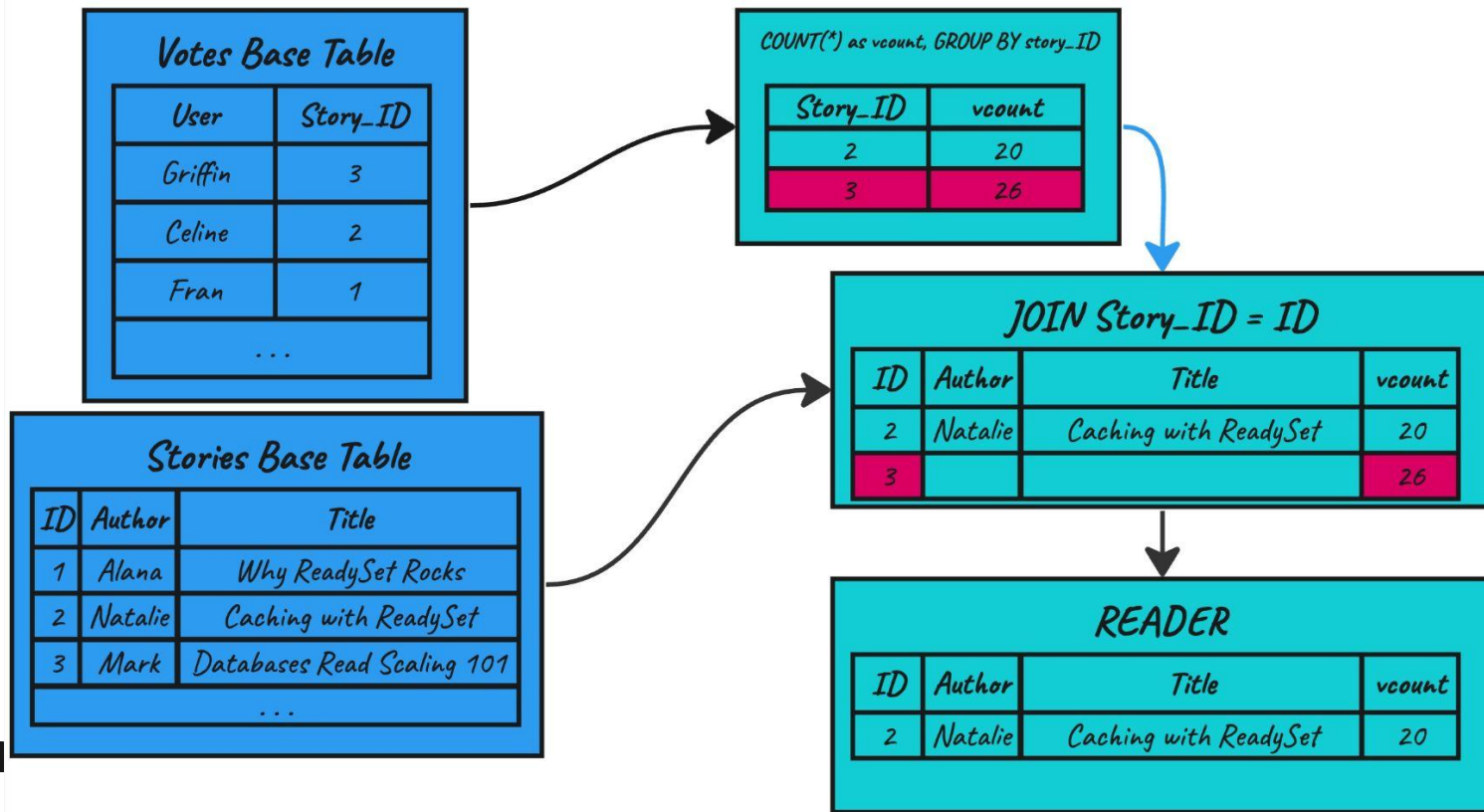
How Readysset Works - Partial Materialization



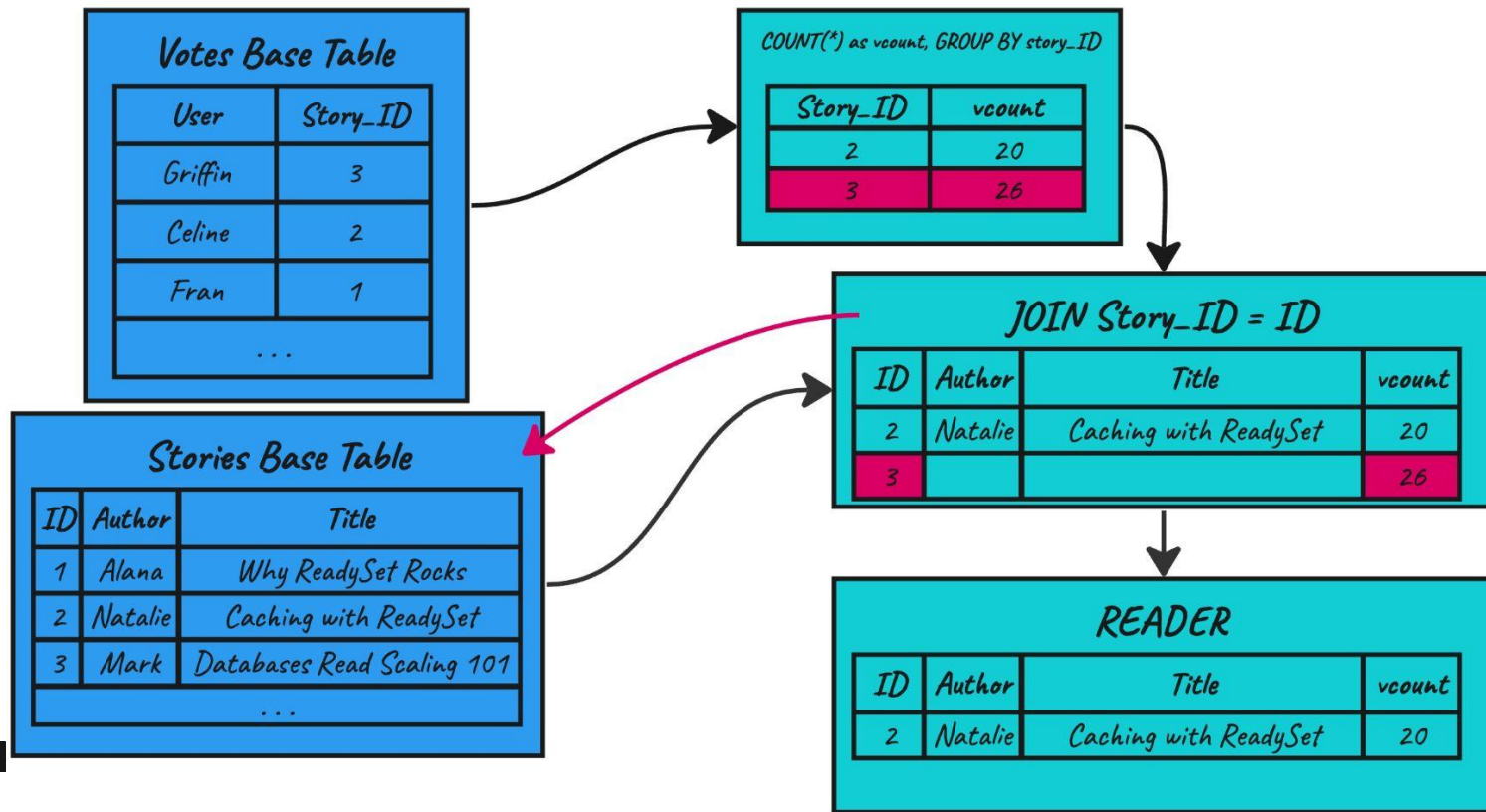
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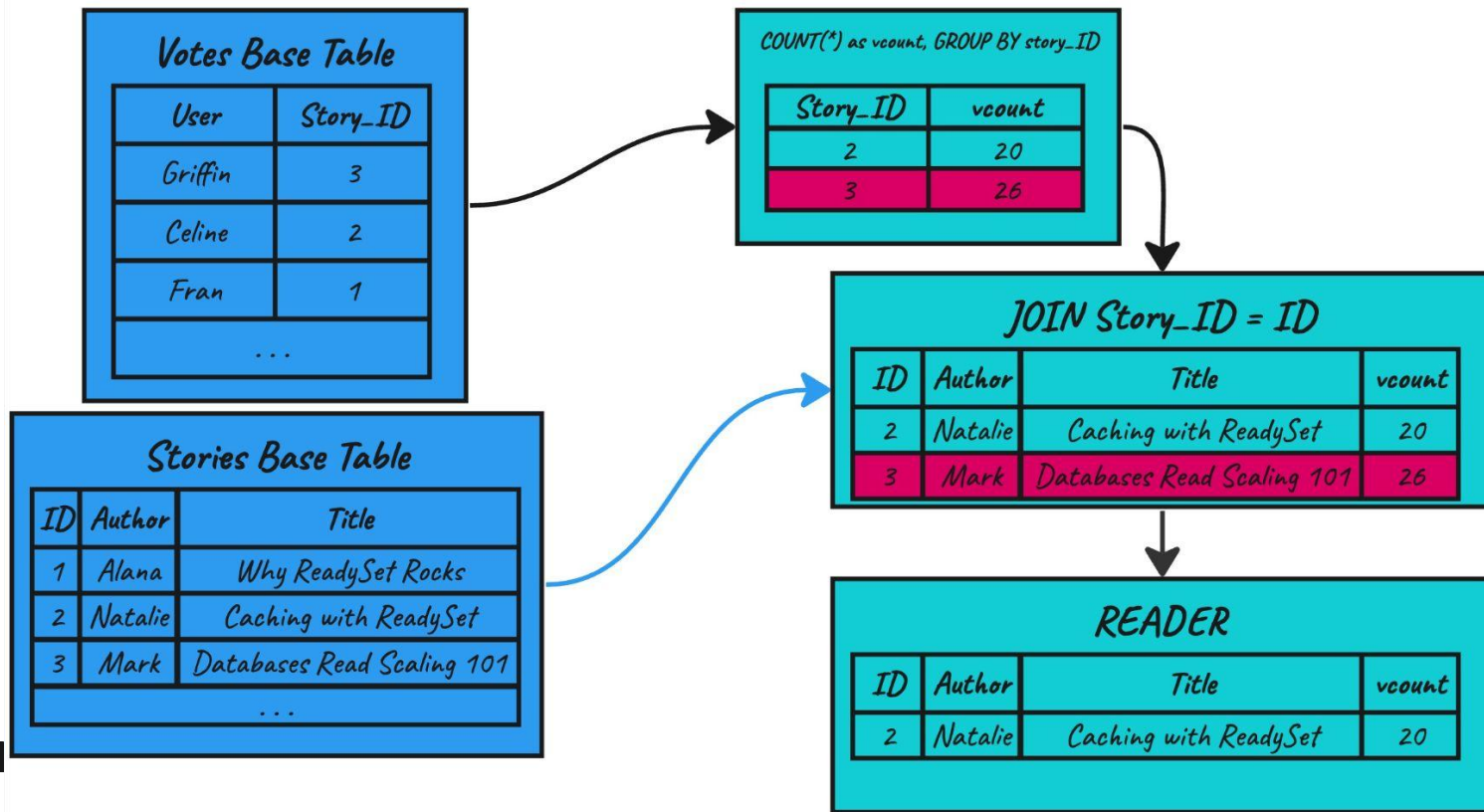
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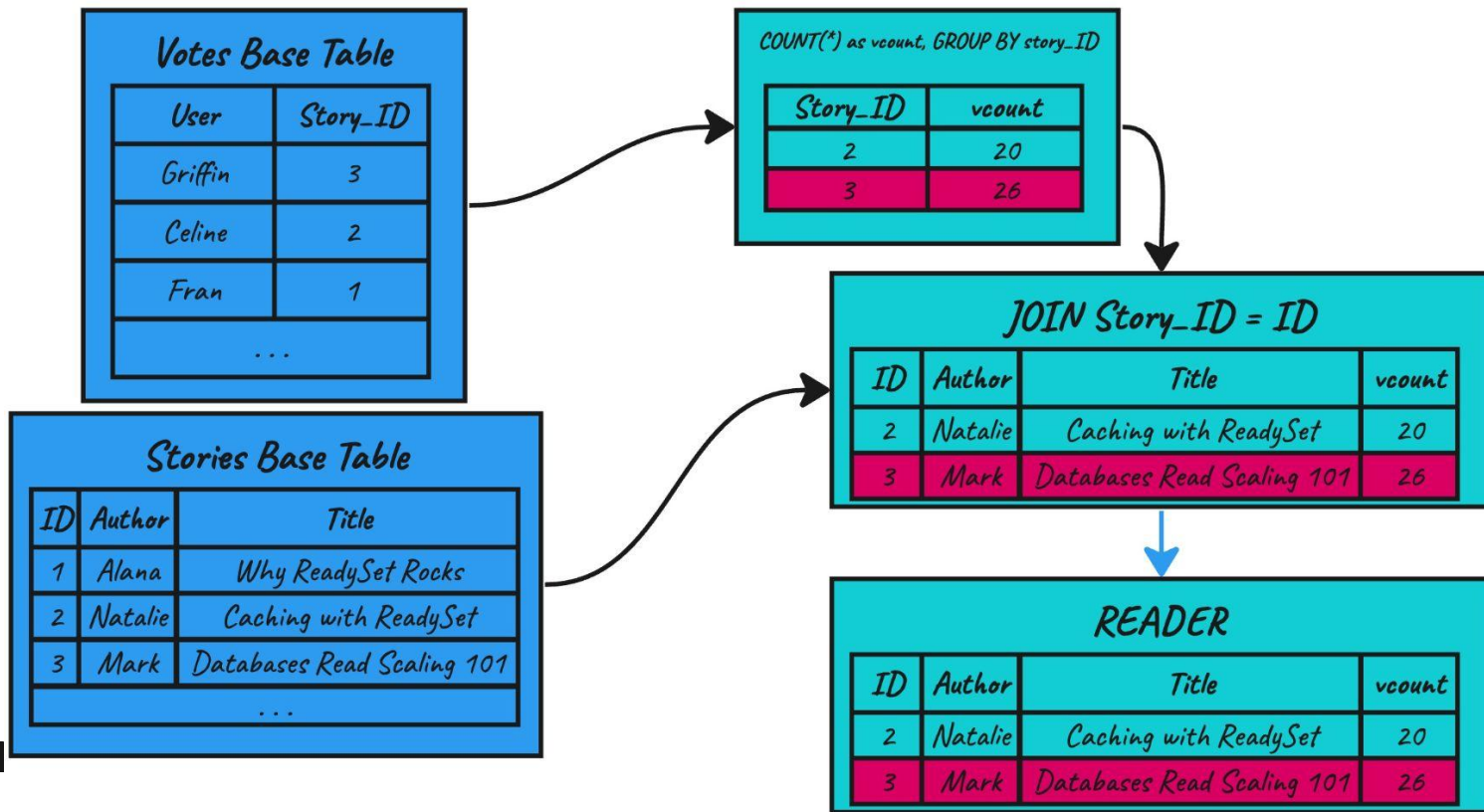
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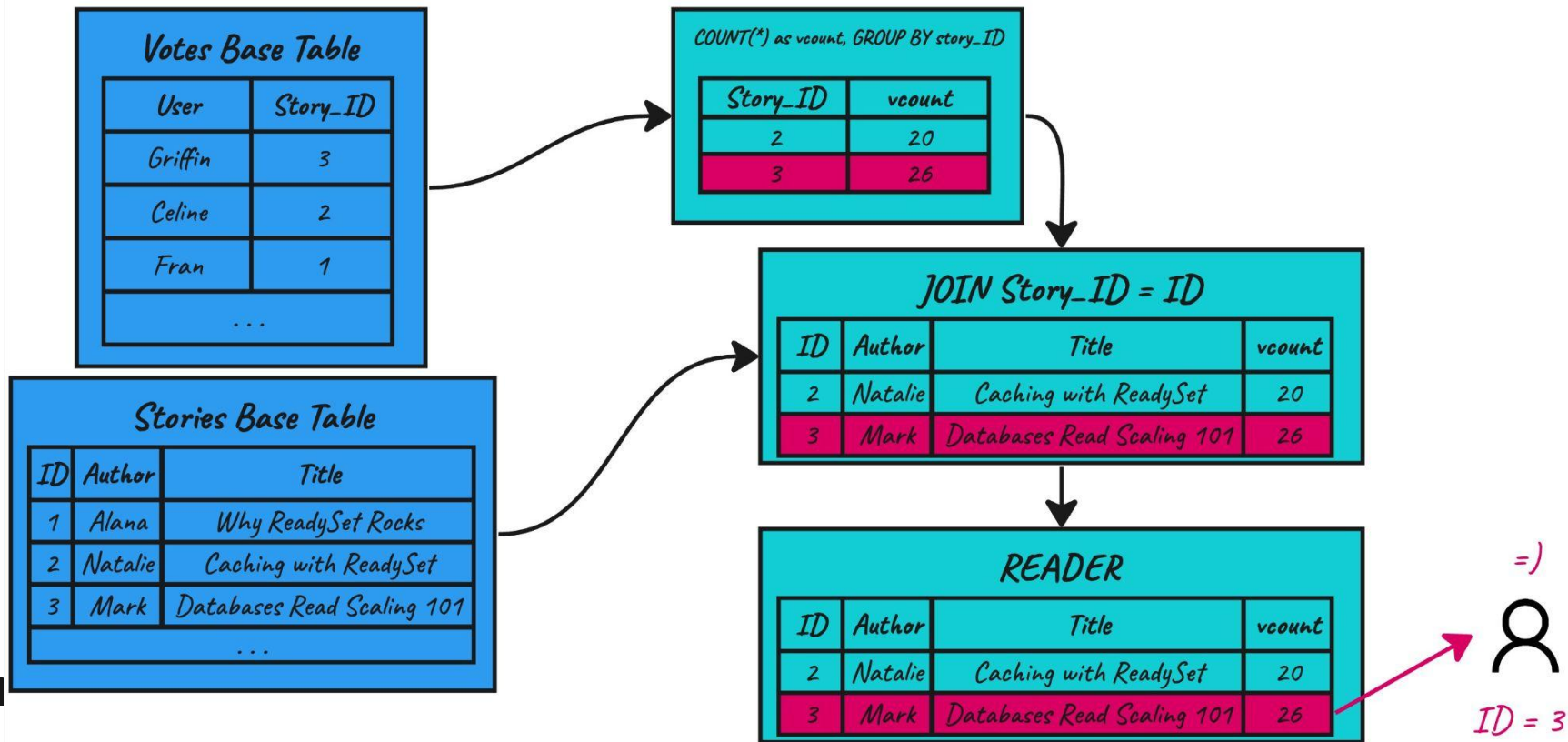
?

ID = 3

How Readysset Works - Partial Materialization



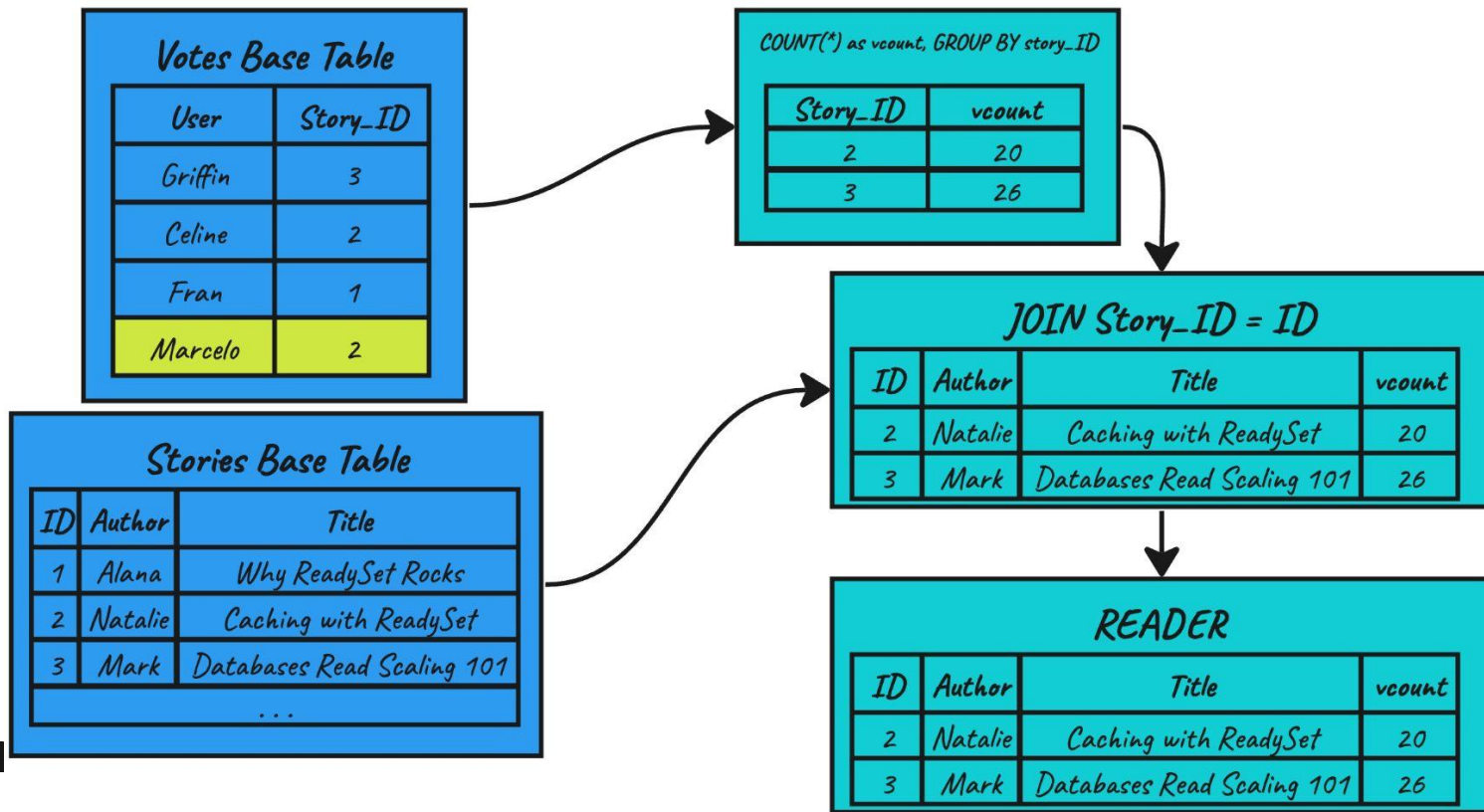
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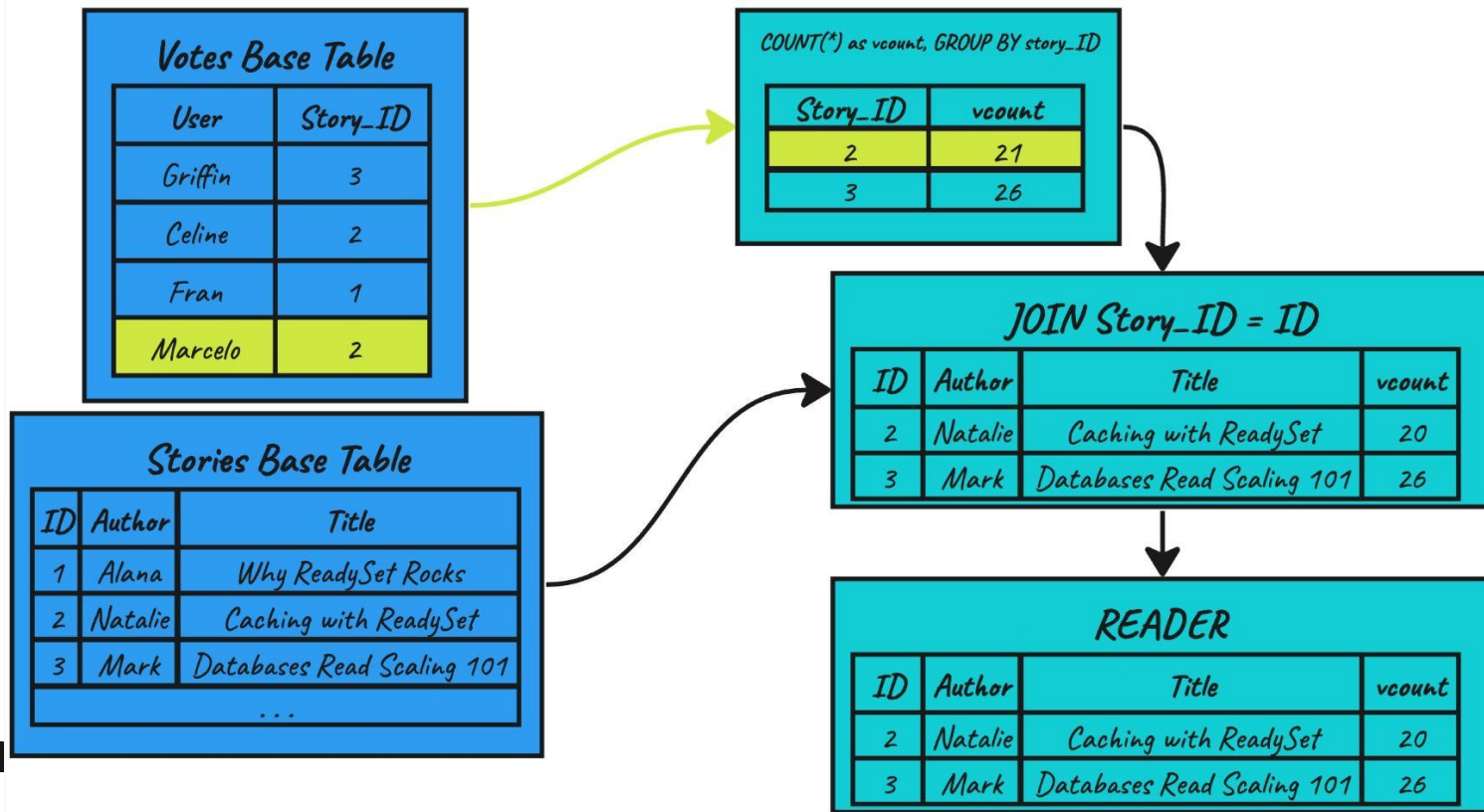
How Readysset Works

- **Snapshotting & CDC (Change Data Capture) / Replication**
- **Dataflow Graph**
- **Partial Materialization**
- **Cache Miss**
- **Cache Maintenance**

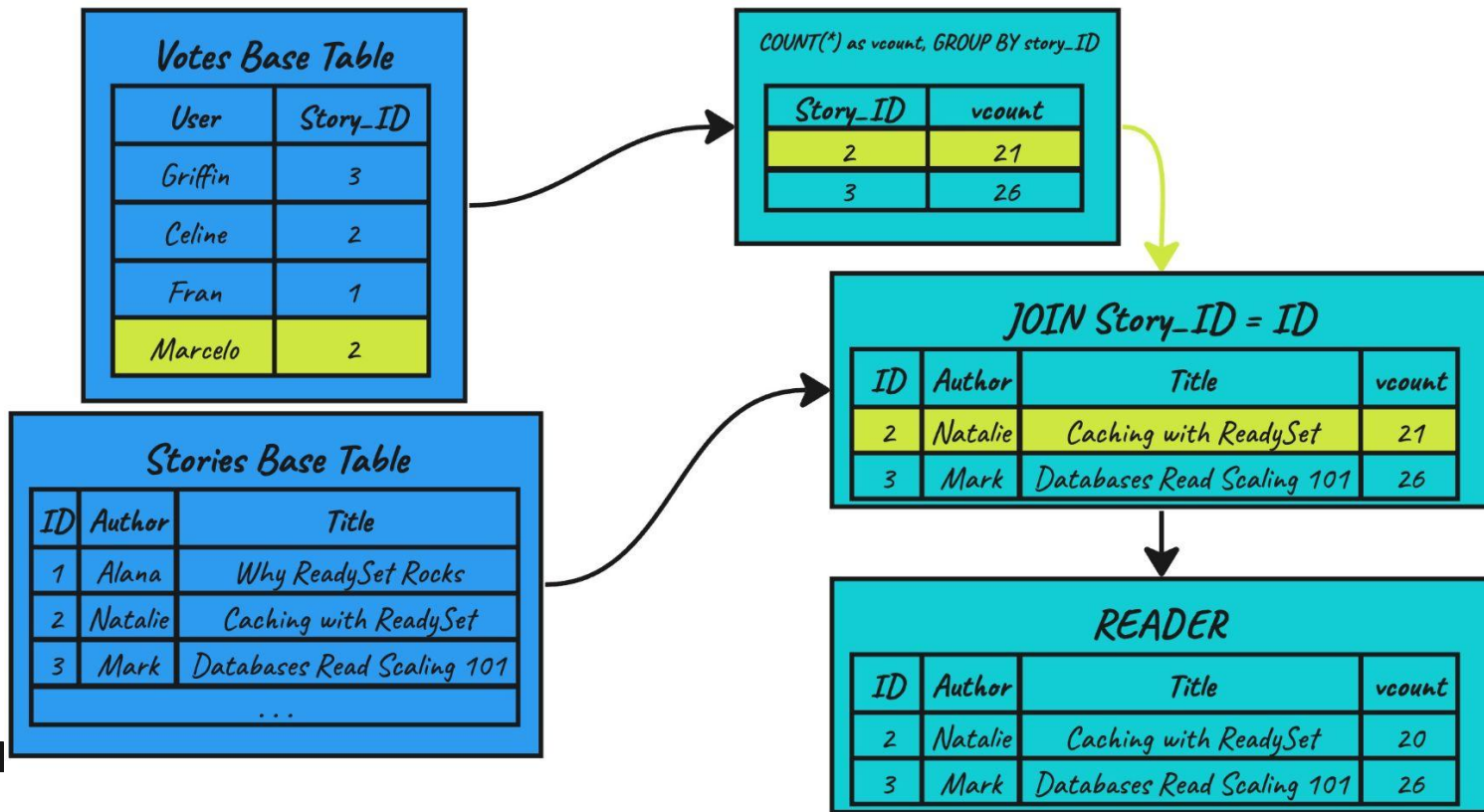
How Readysset Works - Cache Maintenance



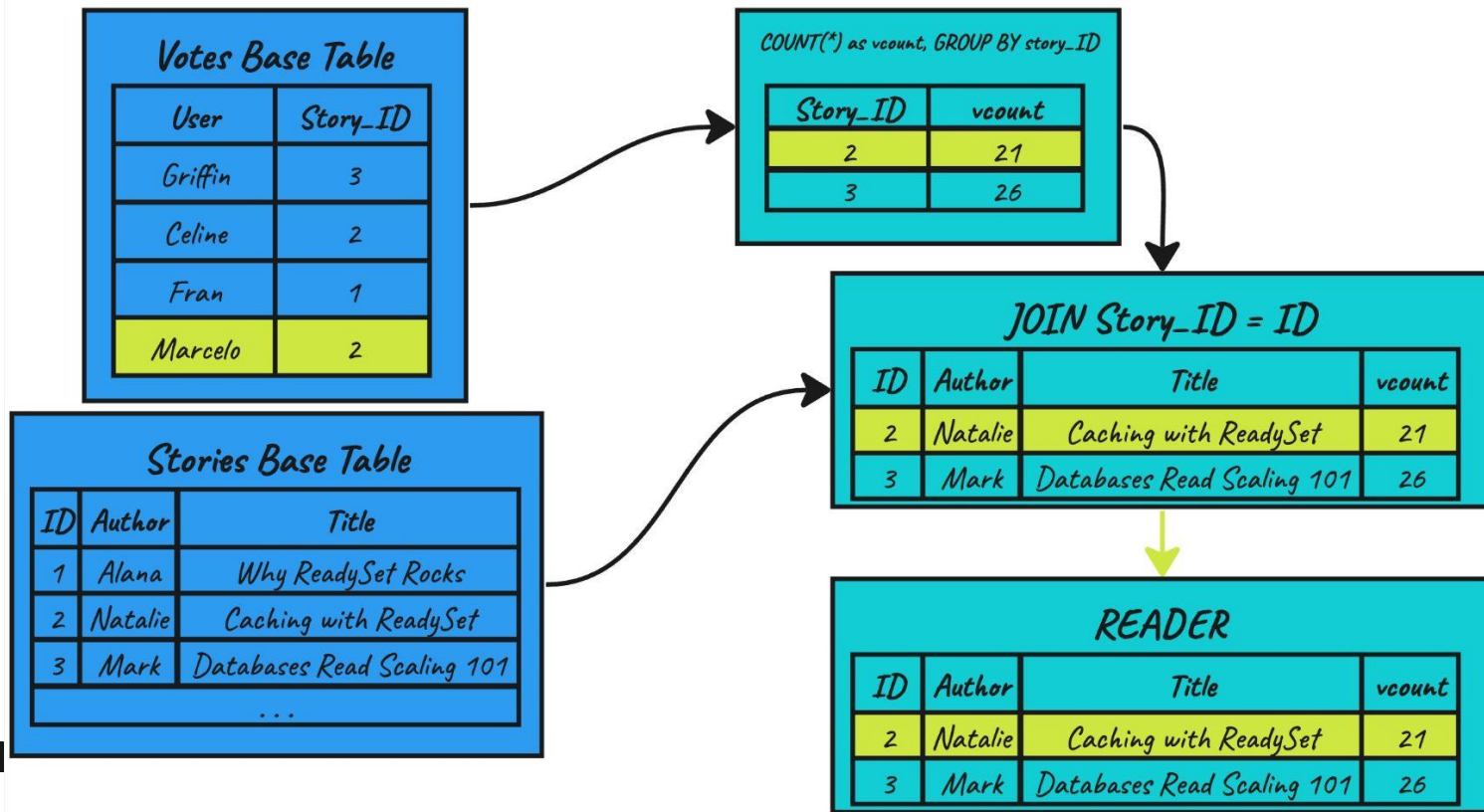
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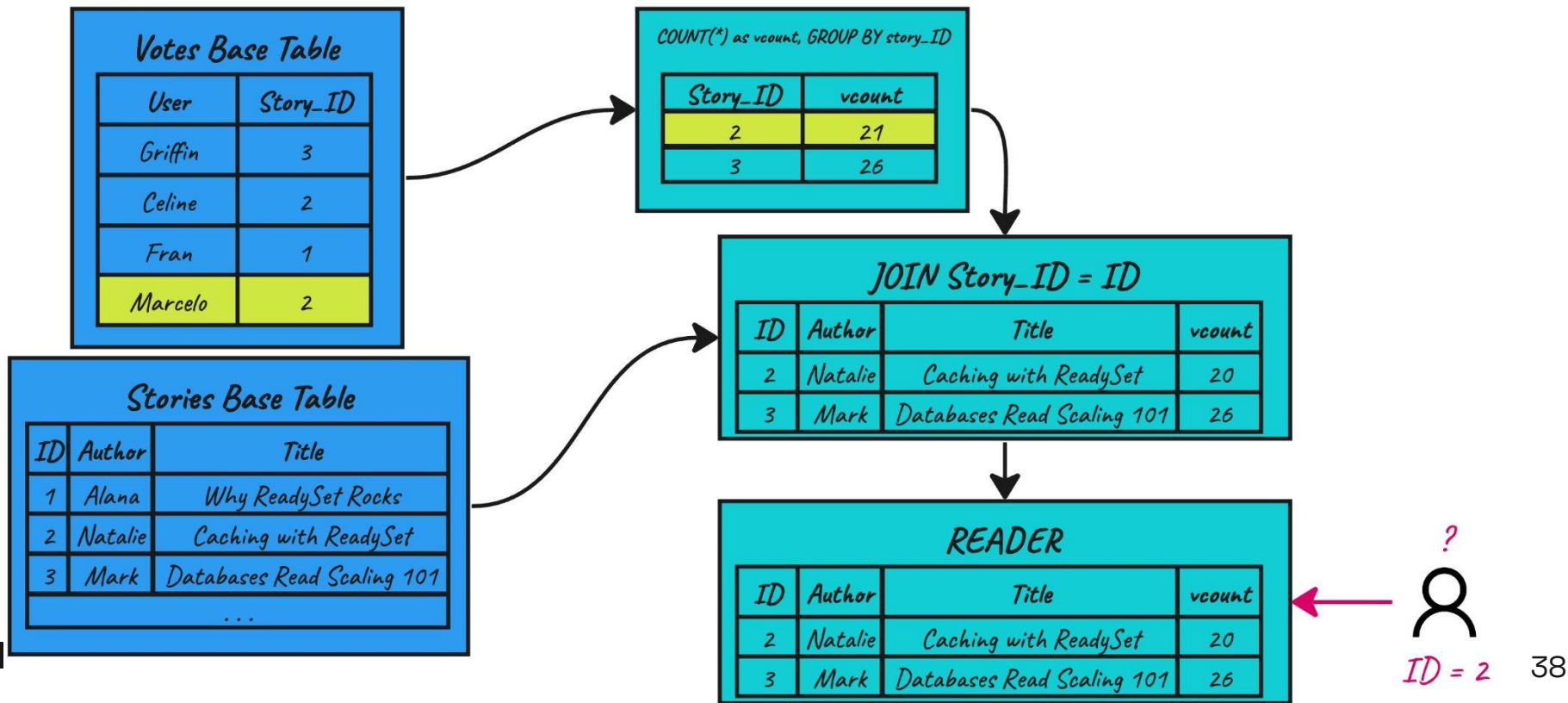
How Readysset Works - Cache Maintenance



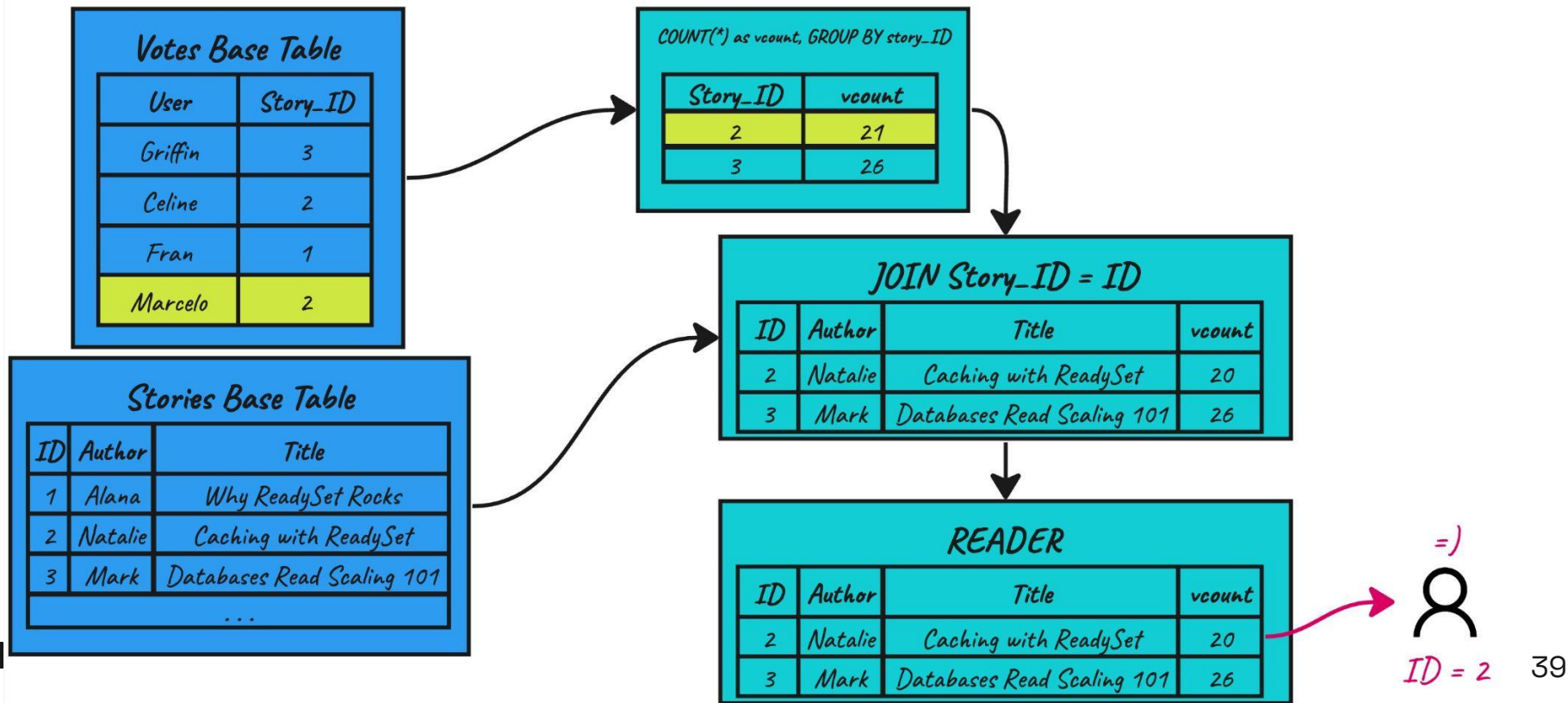
How Readysset Works

- **Snapshotting & CDC (Change Data Capture) / Replication**
- **Dataflow Graph**
- **Partial Materialization**
- **Cache Miss**
- **Cache Maintenance**
- **Stale Reads**

How Readysset Works - Cache Maintenance - Stale Reads



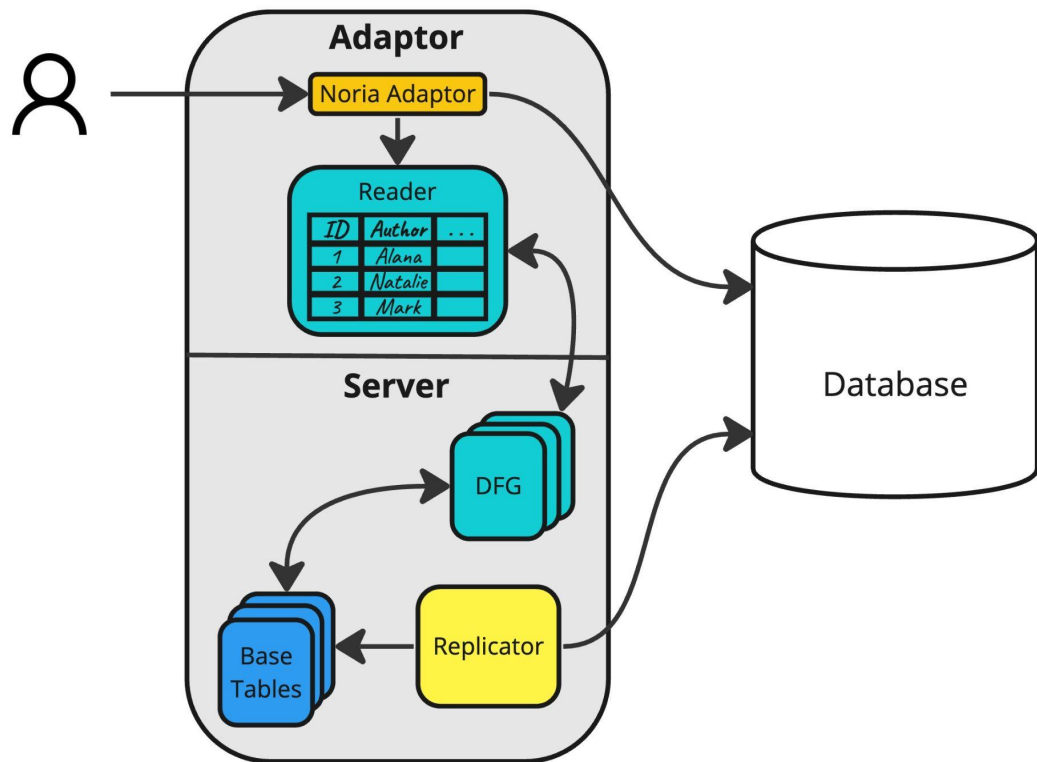
How Readysset Works - Cache Maintenance - Stale Reads



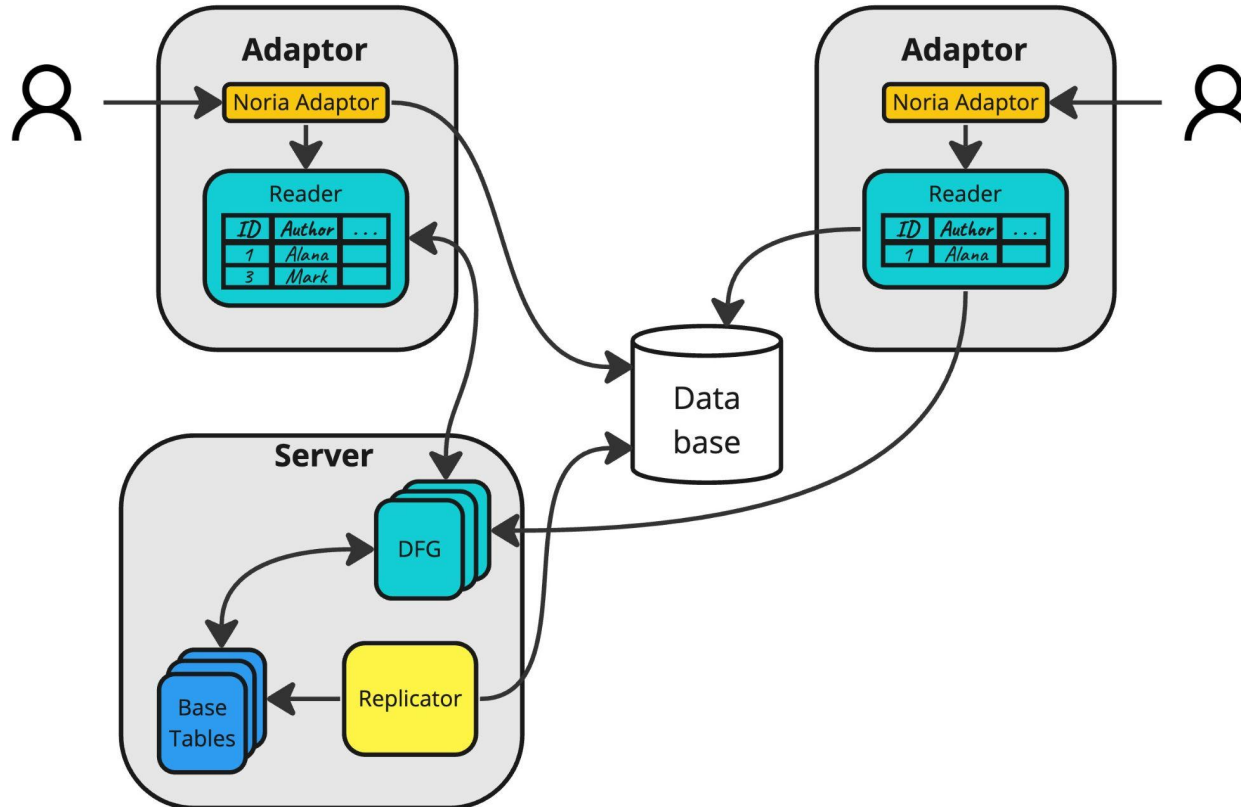
Readysset Architecture



Readysset Architecture



Readysset Architecture



Summary



Summary

- **Wire compatible with MySQL & PostgreSQL**
- **No application code caches / plug & play**
- **Automatically Cache Maintenance**

Summary

- Give it a try
 - <https://github.com/readyssettech/readysset/releases/>
 - If you like, star-us, blog / tweet about your experience.
- Slack Community - > <https://bit.ly/readysset-slack>
- X / Twitter @readyssetio -> <https://bit.ly/readysset-x>
- LinkedIn @readyssettech -> <https://bit.ly/readysset-linkedin>

Summary

Happy Hour

Hosted by Readysset

Saturday 3rd Feb - 6PM

@Delirium Café

RSVP - <https://bit.ly/readyssetsvp>



Thank You!

