THE *WHAT* AND *WHY* OF CQRS

..in IT Logistics Fashion

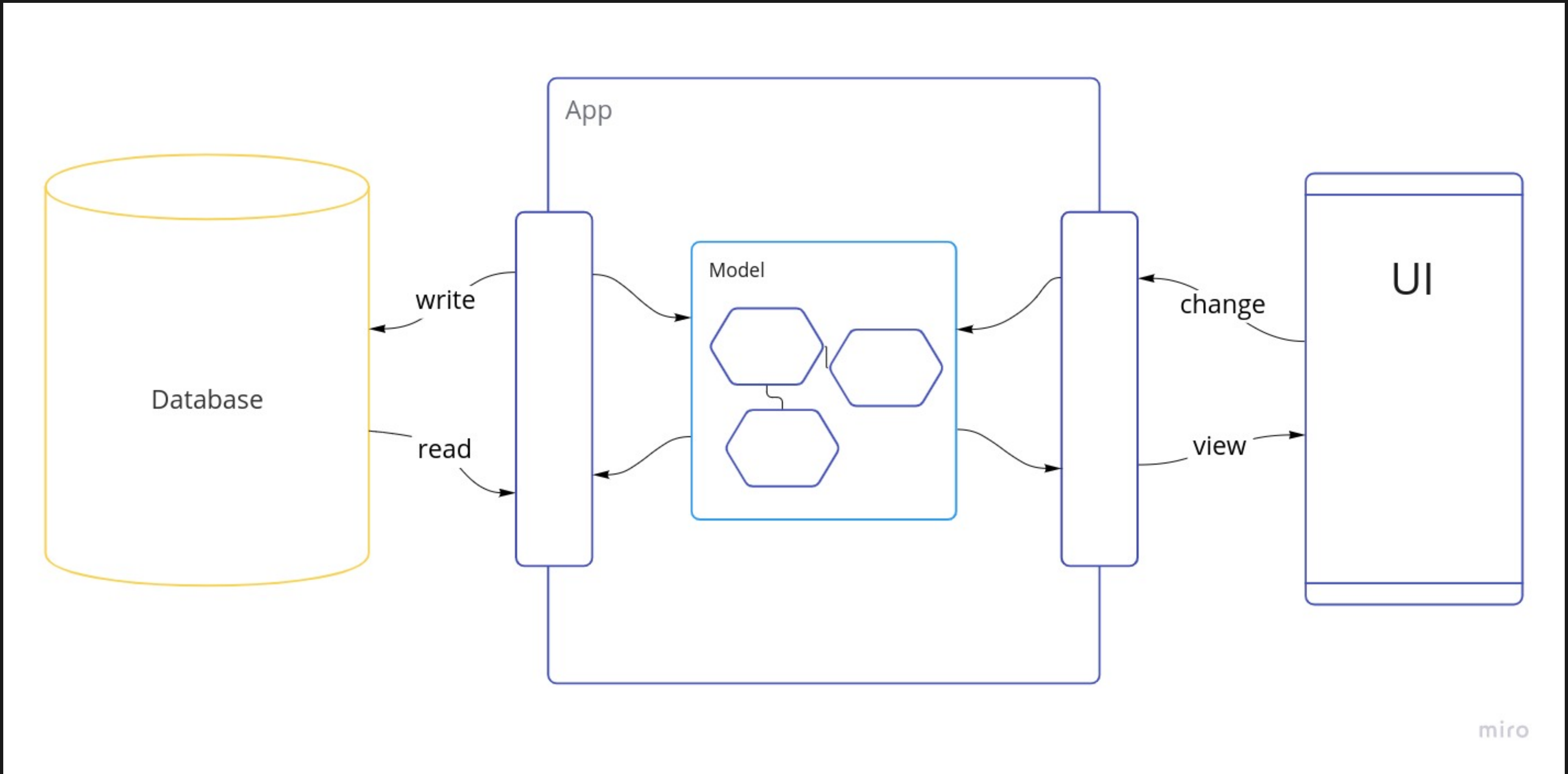
CQR.. WHAT?

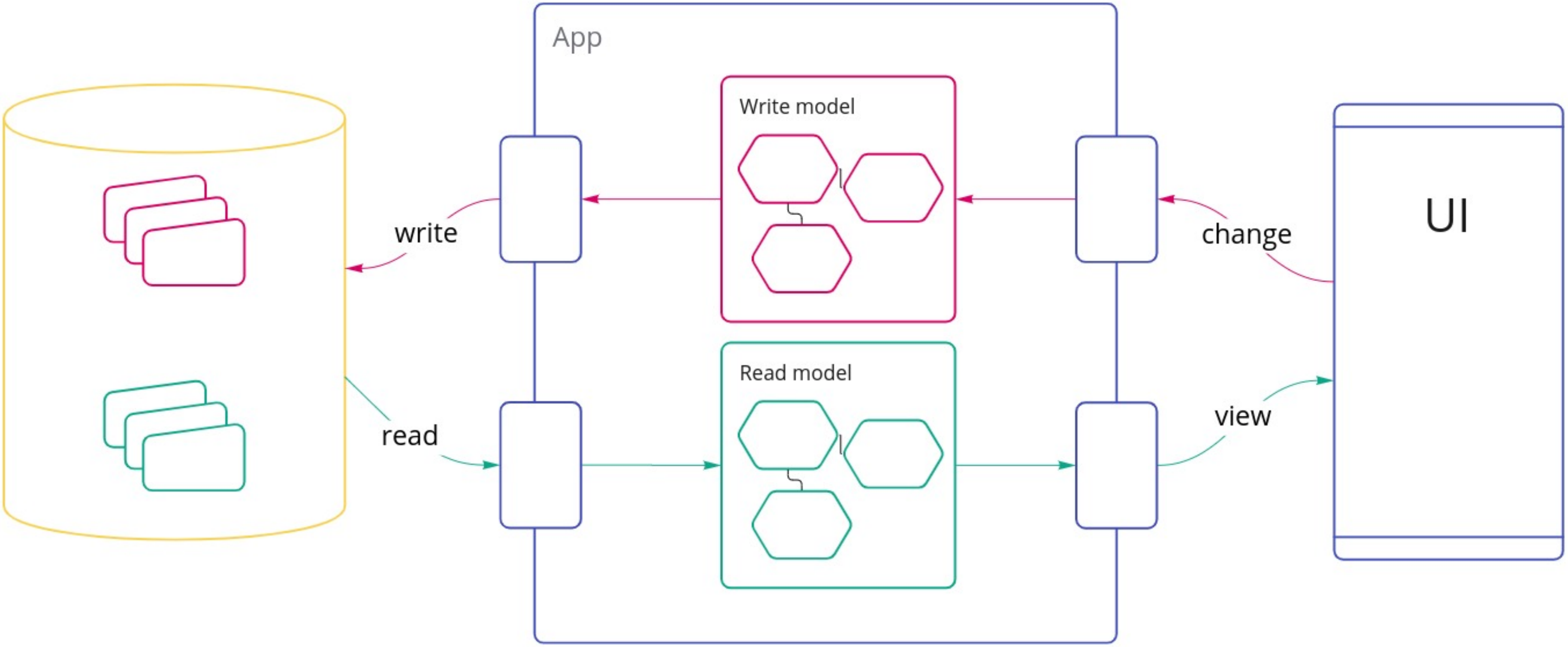
DEFINITION

CQRS stands for Command and Query Responsibility Segregation, a pattern that separates read and update operations for a data store. Implementing CQRS in your application can maximize its performance, scalability, and security. The flexibility created by migrating to CQRS allows a system to better evolve over time and prevents update commands from causing merge conflicts at the domain level.

https://docs.microsoft.com/en-us/azure/architecture/patterns/cqrs

Separate models for **reads** and **writes**


App
Database
write
read
Model
change
view
UI
miro


App
Write model
Read model
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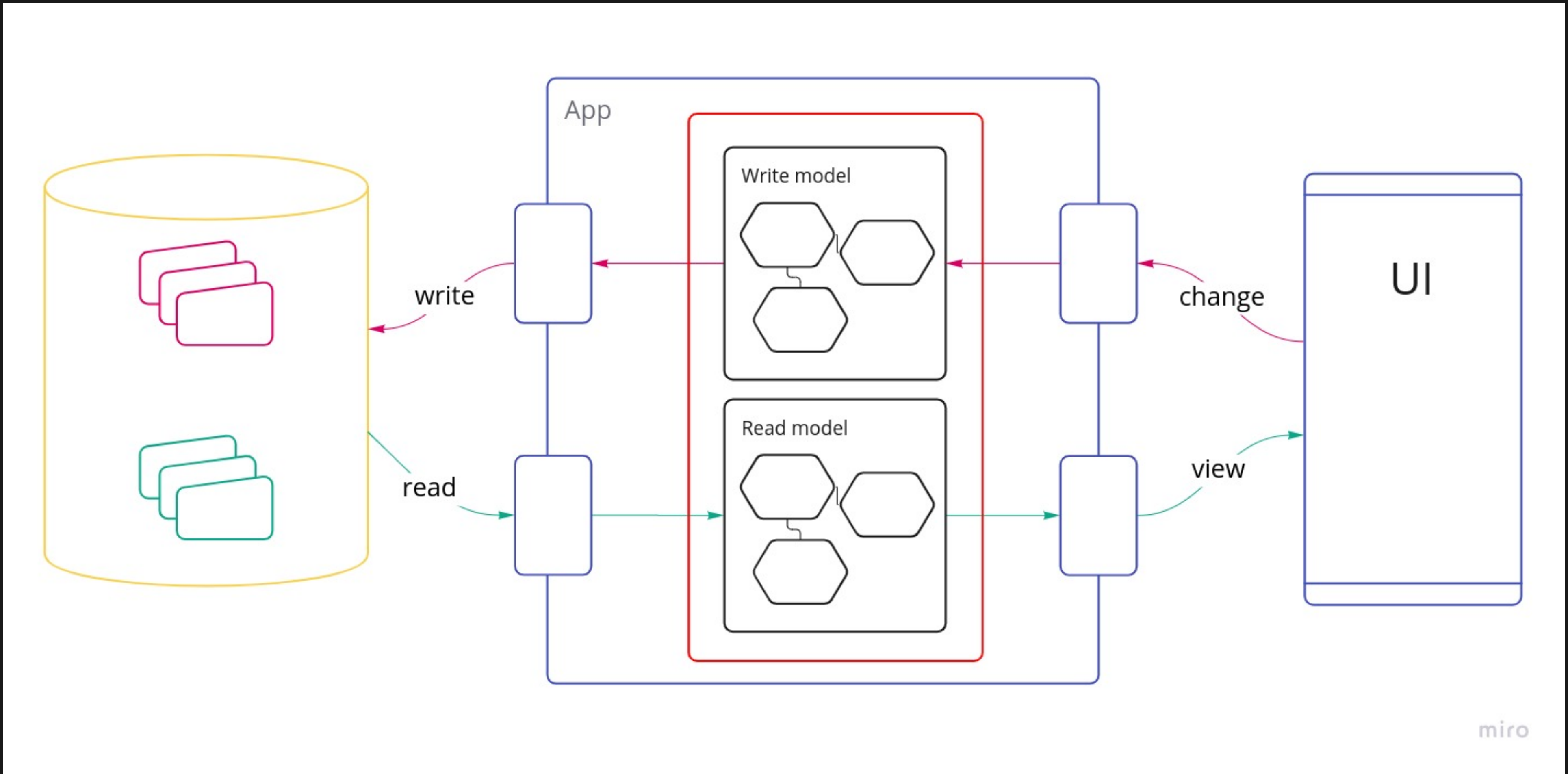
App
Write model
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write
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UI
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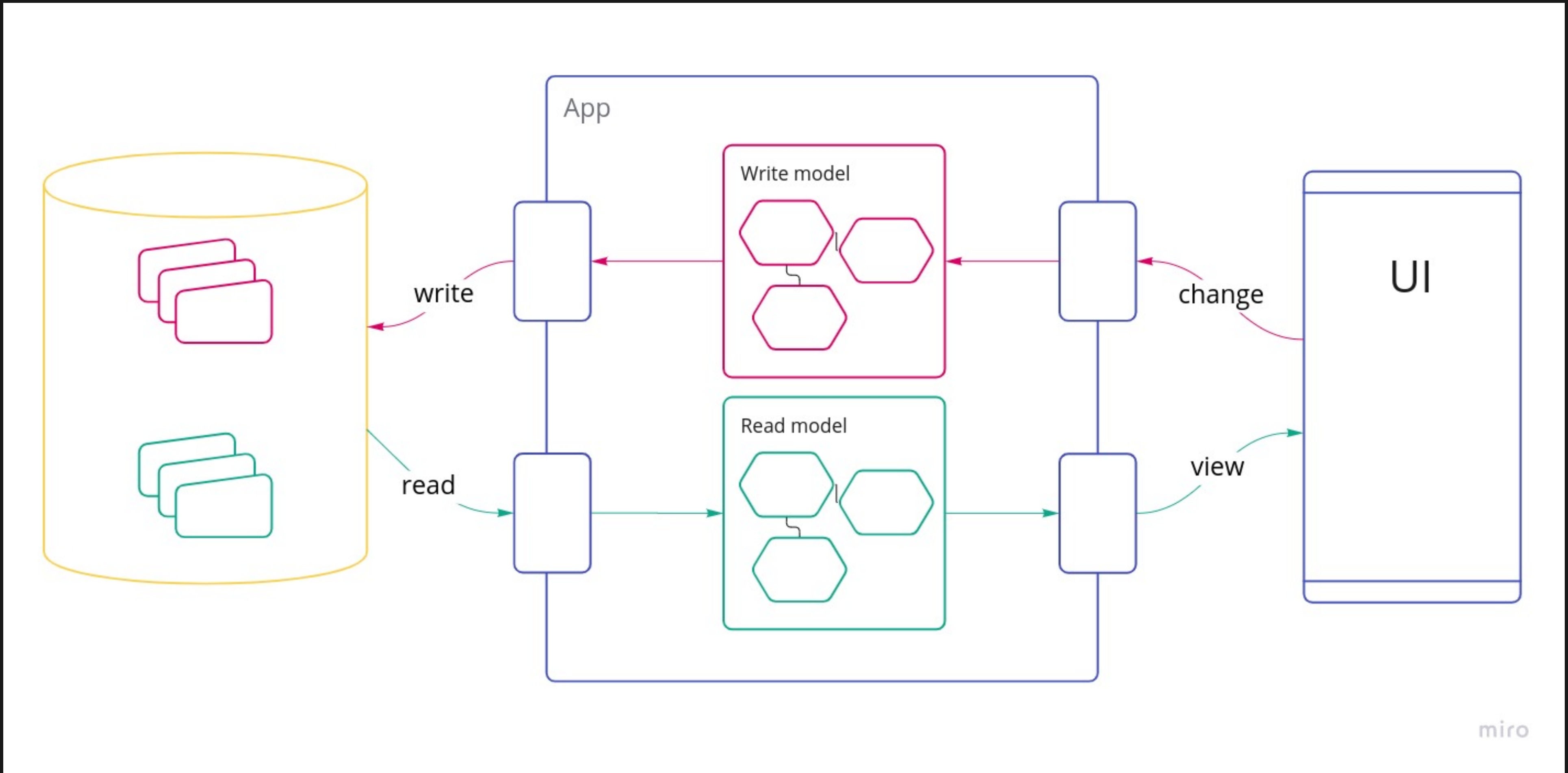
..BUT WHY?

PERFORMANCE!


App
Write model
Read model
write
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change
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UI
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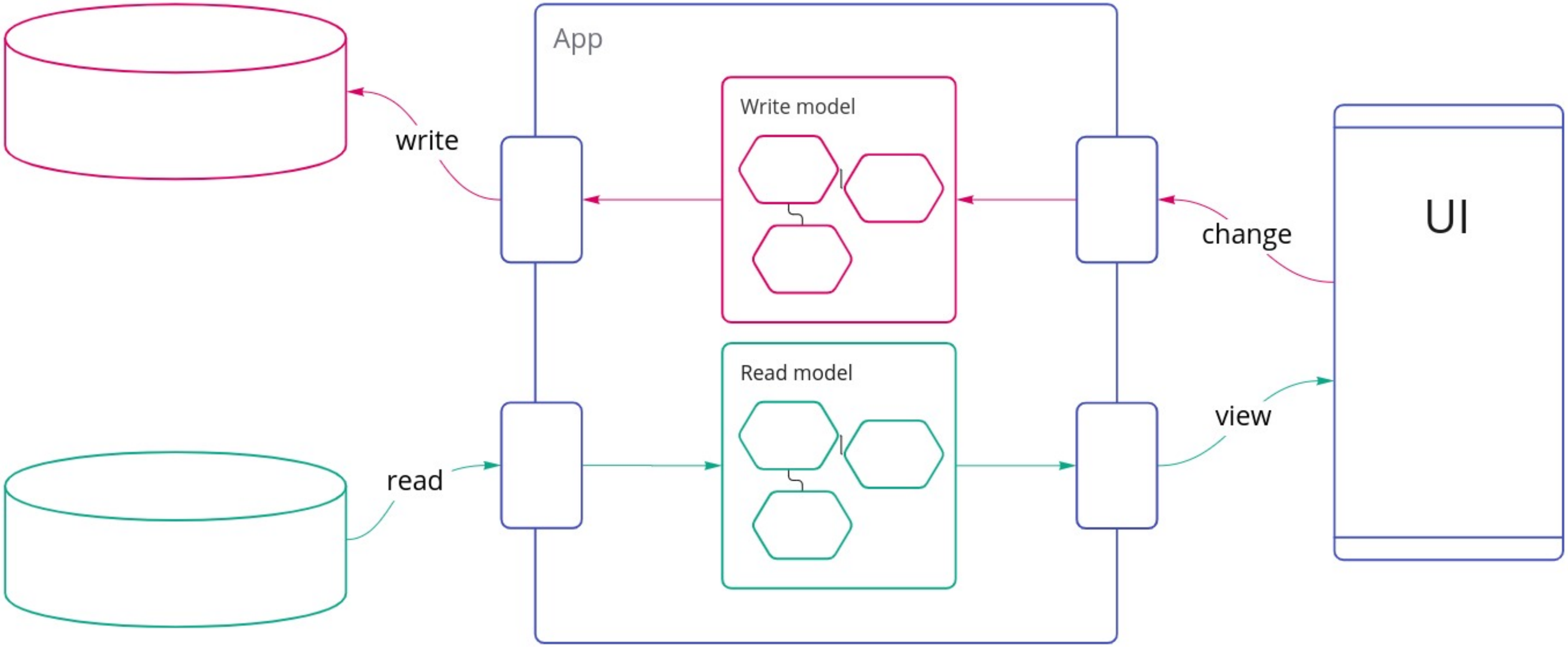
App
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write
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view
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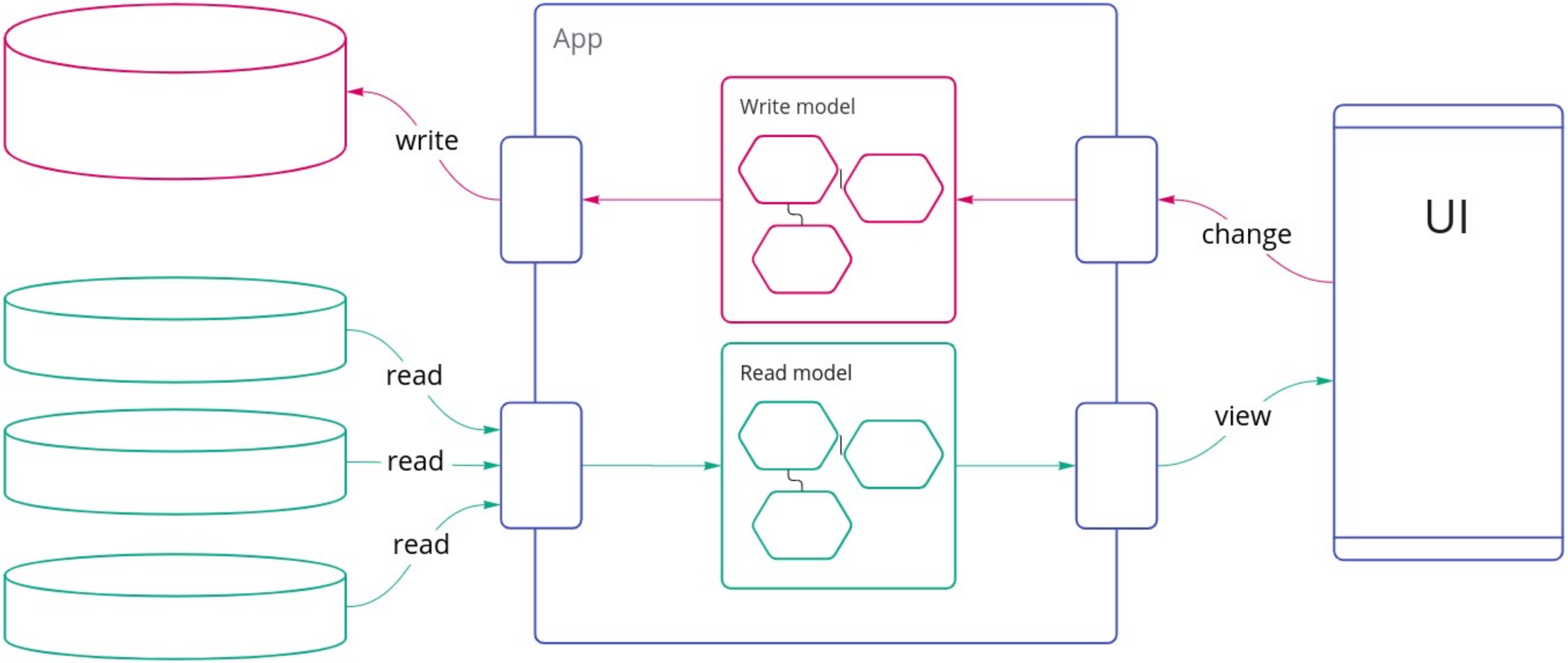
App
Write model
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change
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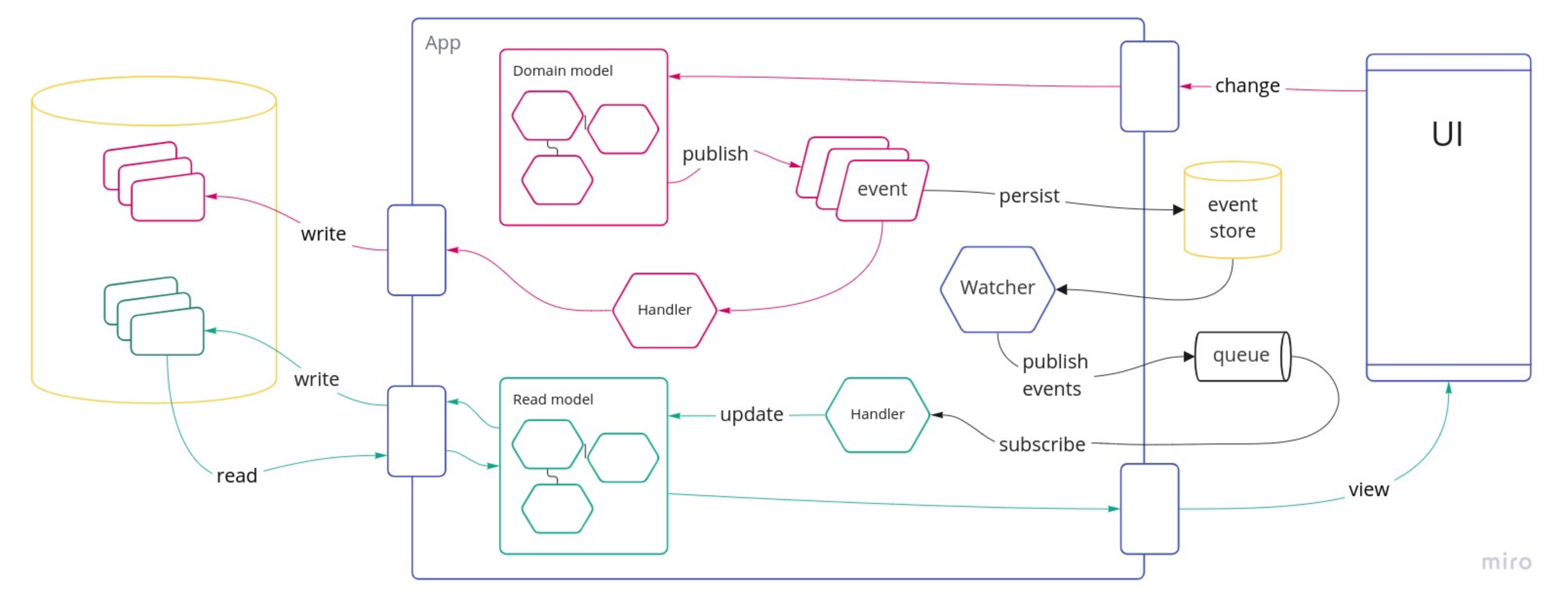
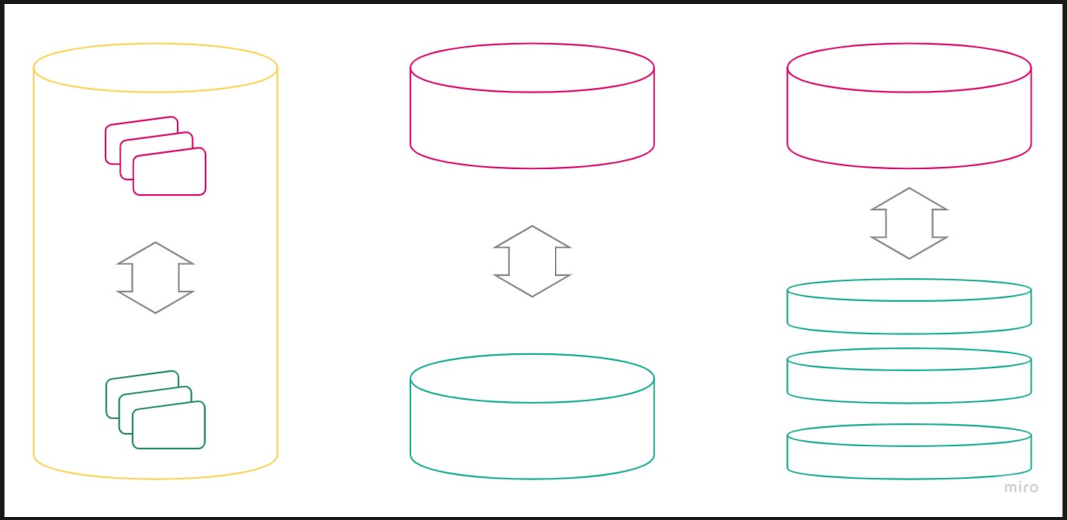
miro

TRADEOFFS

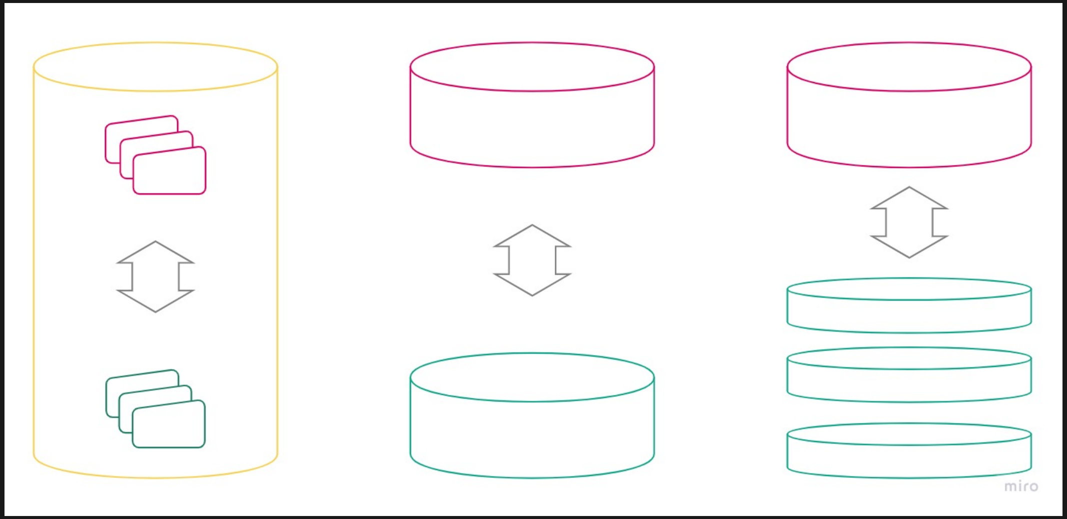
COMPLEXITY 😱


App
Domain model
publish
event
persist
event store
change
UI
write
Handler
Watcher
write
publish events
queue
Read model
update
Handler
subscribe
read
view
miro

CONSISTENCY ?

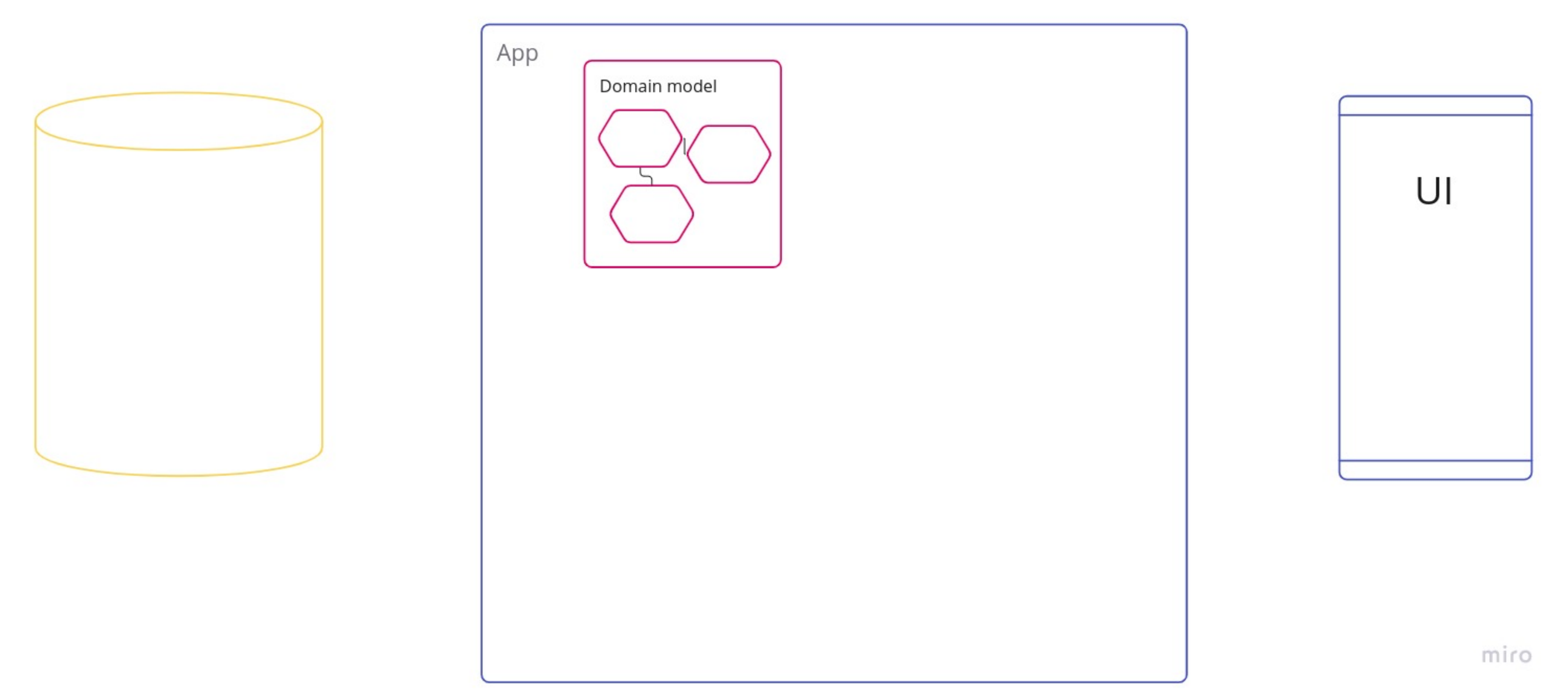


CONSISTENCY ?



..eventually

CQRS IN LOGISTICS FASHION


App
Domain model
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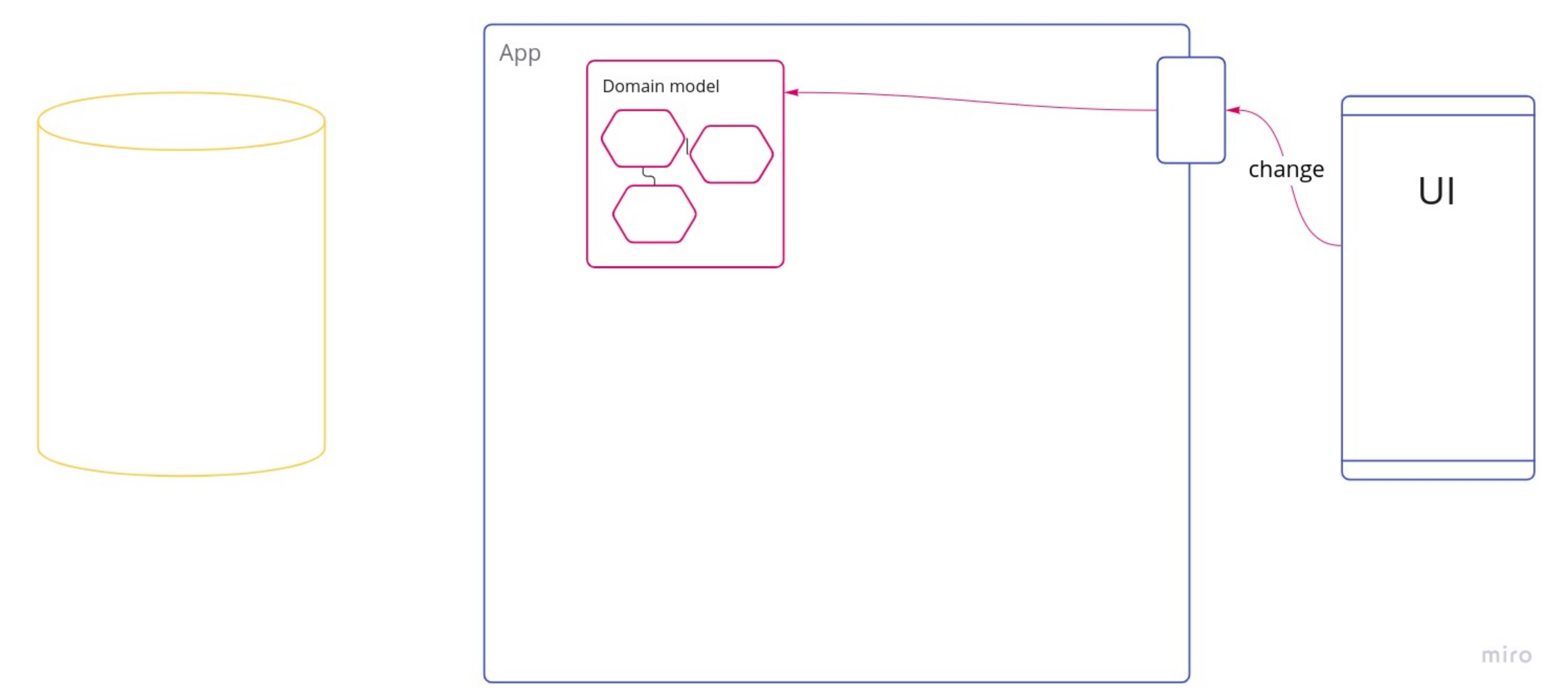
App
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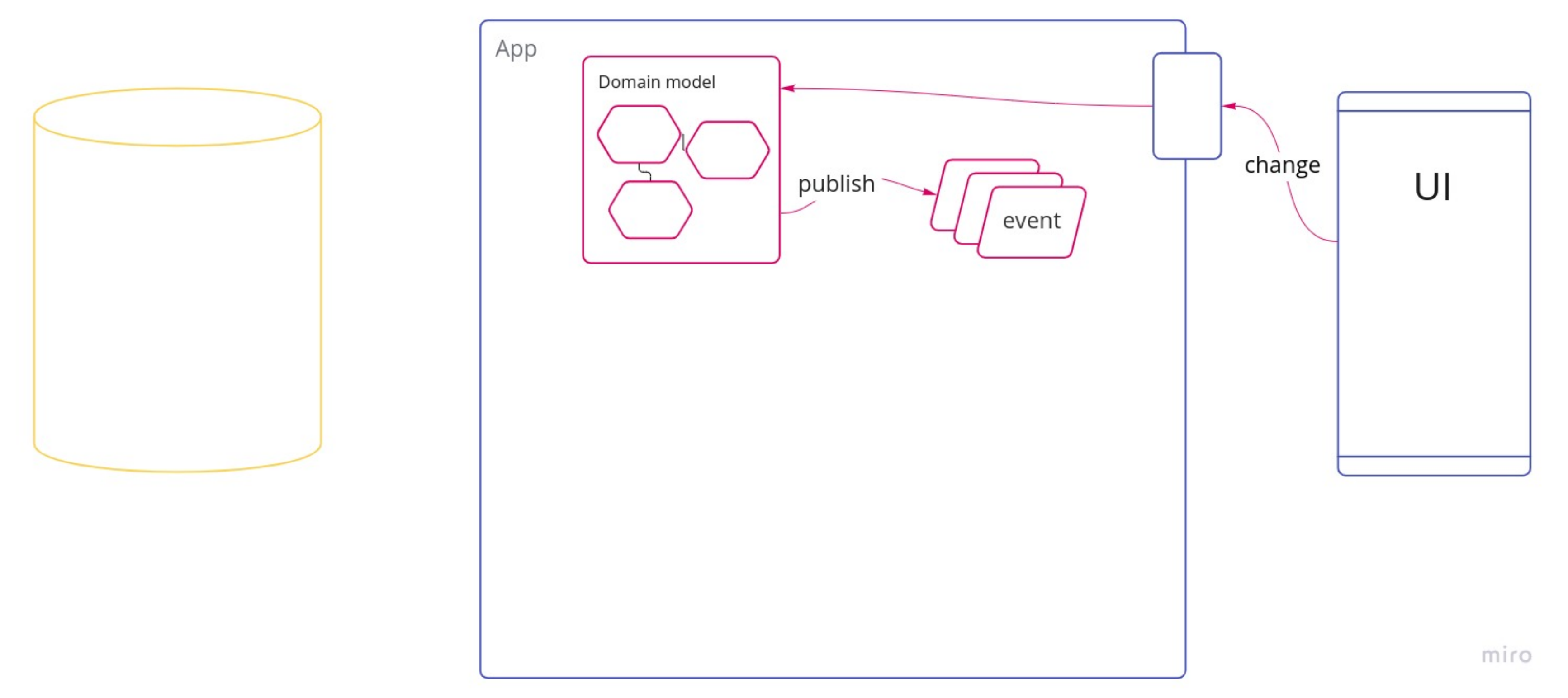
App
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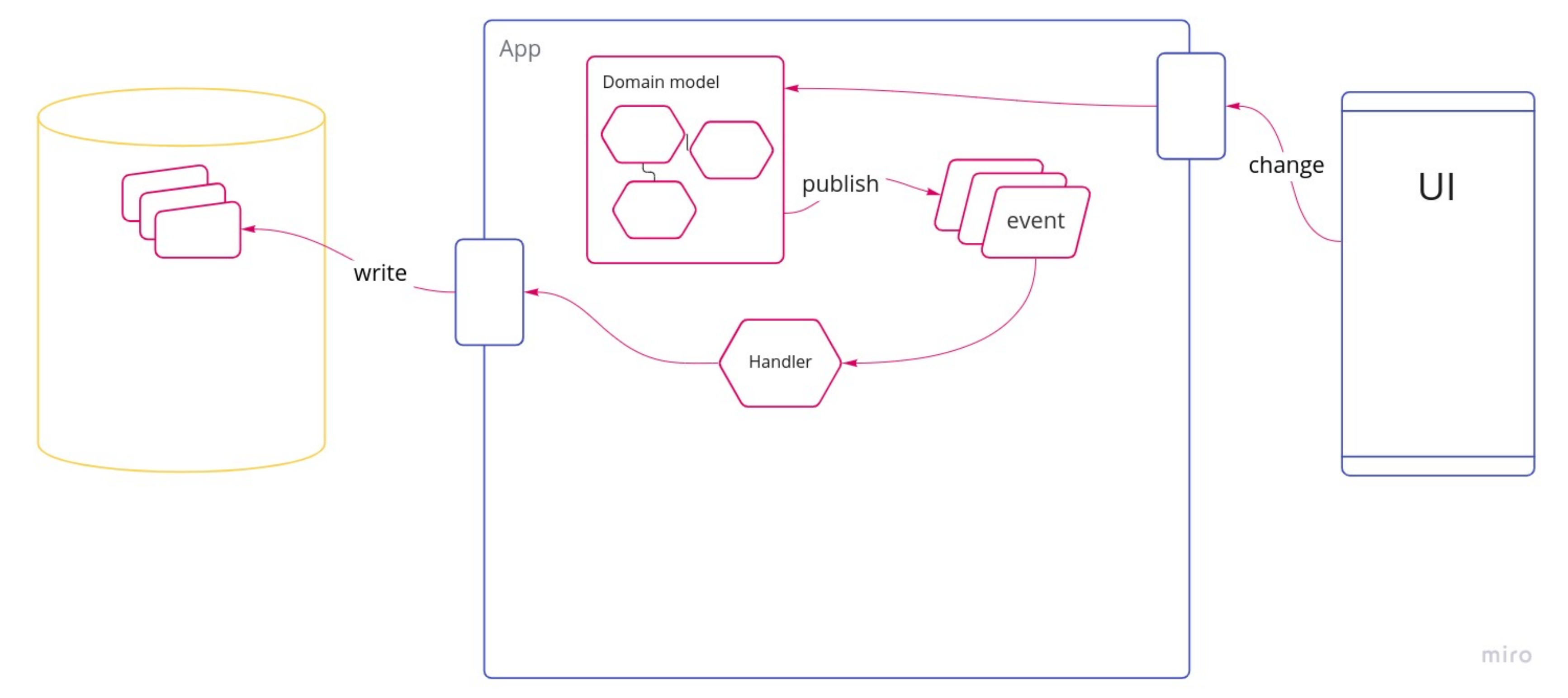
App
Domain model
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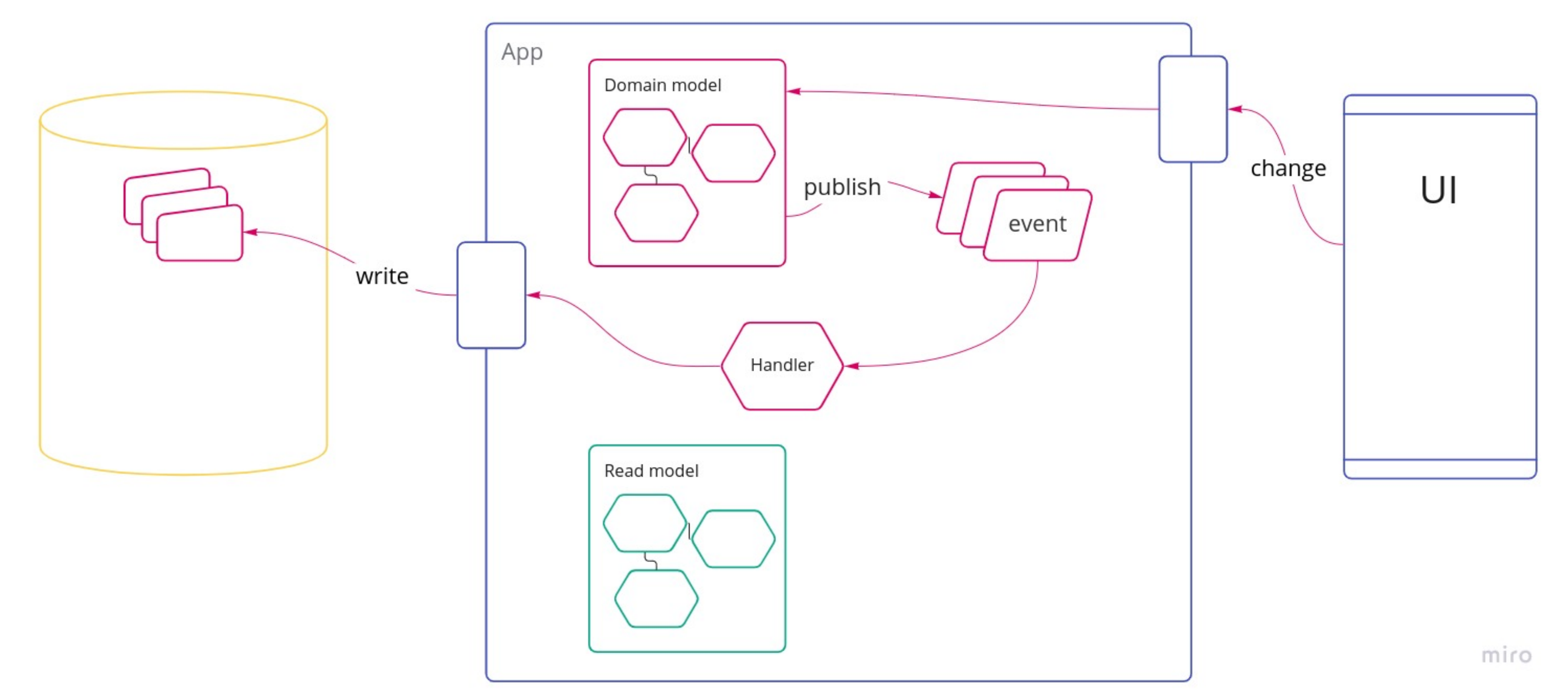
change
UI
write
Handler
miro


App
Domain model
publish
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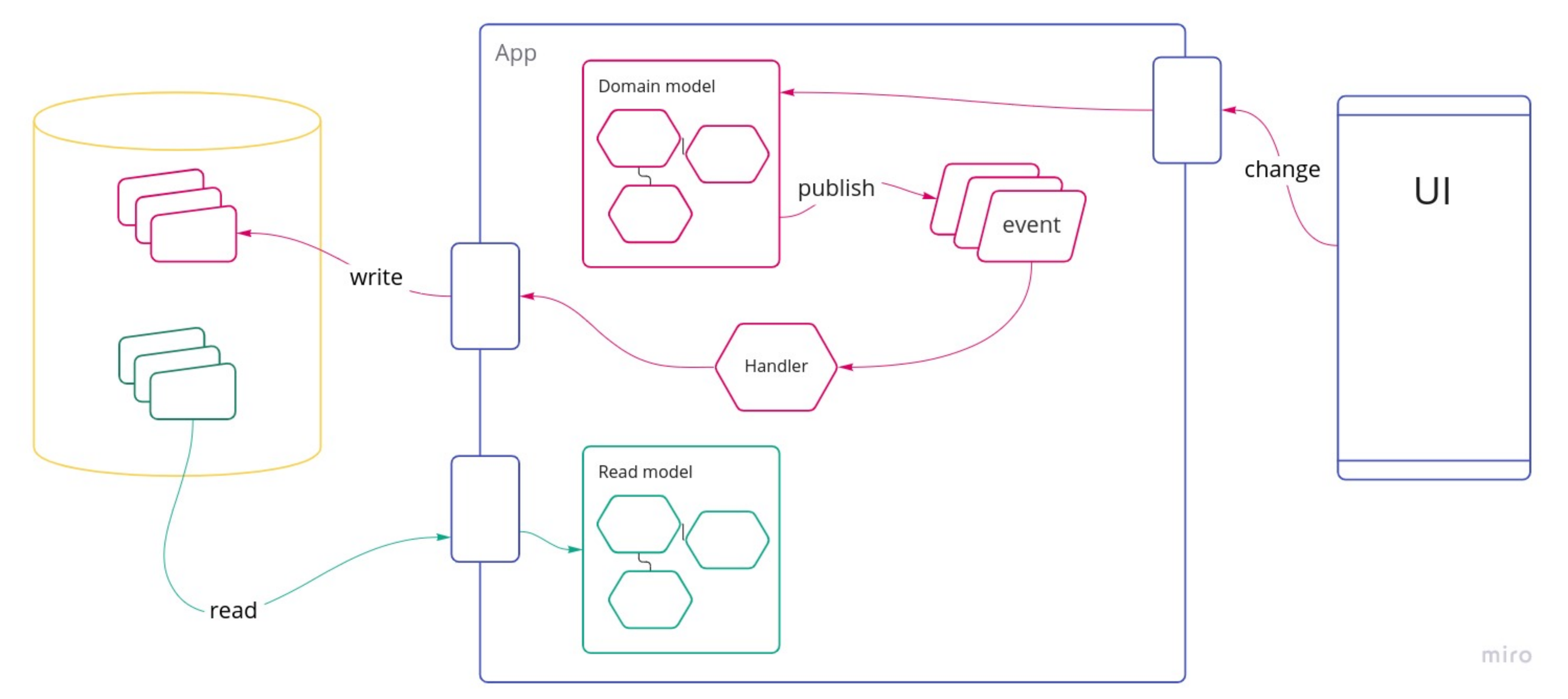
write
Handler
Read model
miro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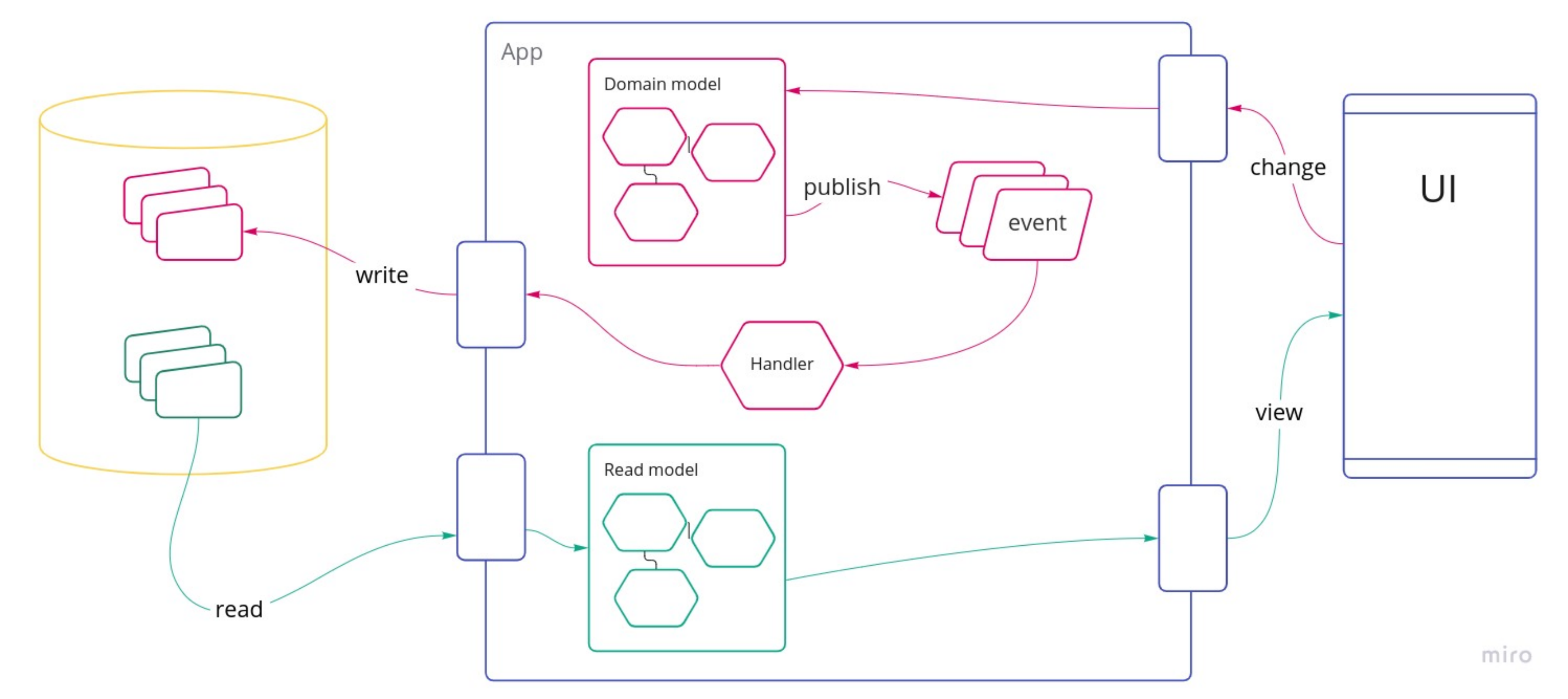
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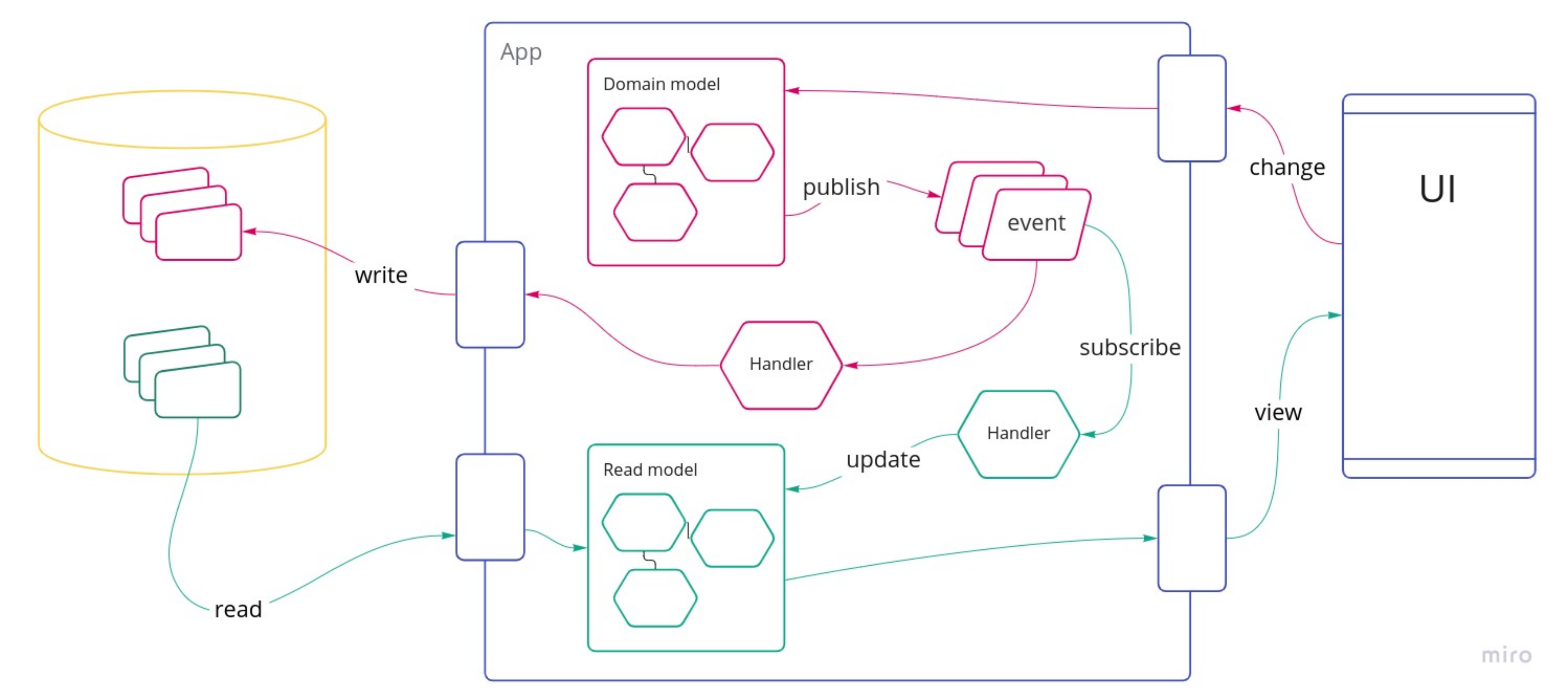
App
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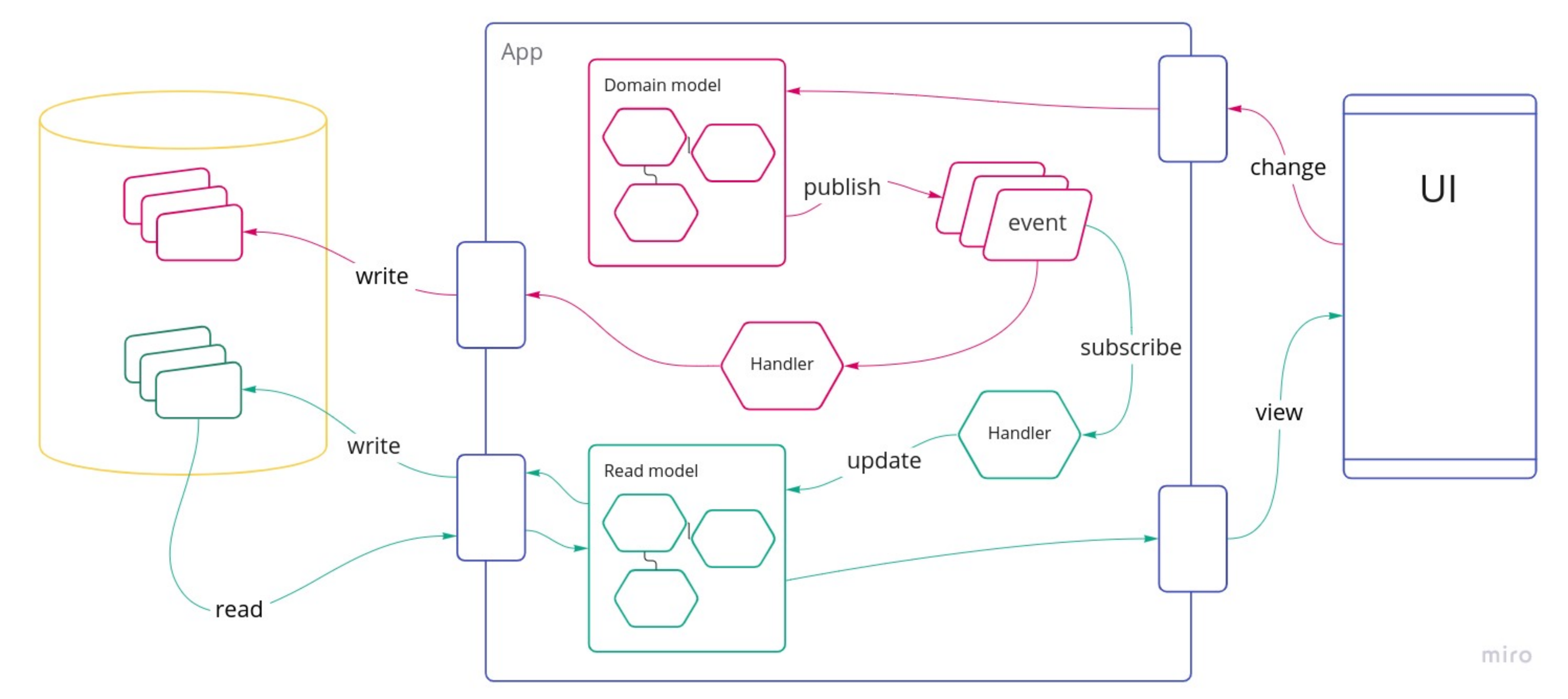
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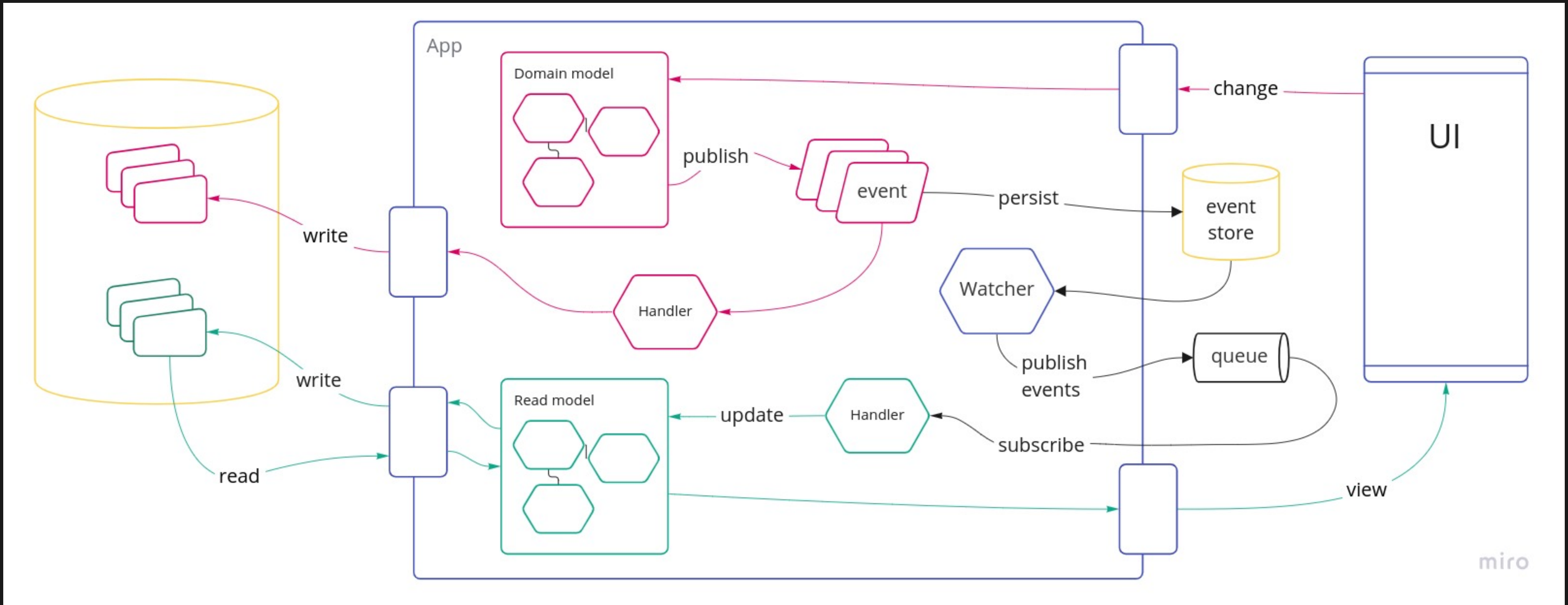
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write
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queue
Read model
update
Handler
subscribe
read
view

👍

- domain model not compromised for reads
- scale reads and writes independently

🤔

- complexity 📈
- (eventual) consistency

RESOURCES

- Martin Fowler: CQRS (blog post)
- Architecture Patterns with Python (book)
- Implementing Domain-Driven Design (book)
- Designing data-intensive applications (book)

QUESTIONS?

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@lens on Slack