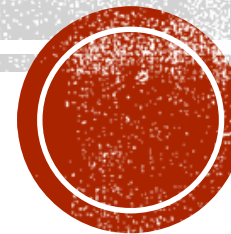


# РАЗВОЈ СОФТВЕРА 2

Команде и упити



# Command-Query Separation

## Command

Does something

Should modify state

Should not return a value



# Command-Query Separation

## Command

Does something

Should modify state

Should not return a value

## Query

Answers a question

Should not modify state

Always returns a value



# Command-Query Separation

## Command

Does something

Should modify state

Should not return a value  
*(ideally)*

## Query

Answers a question

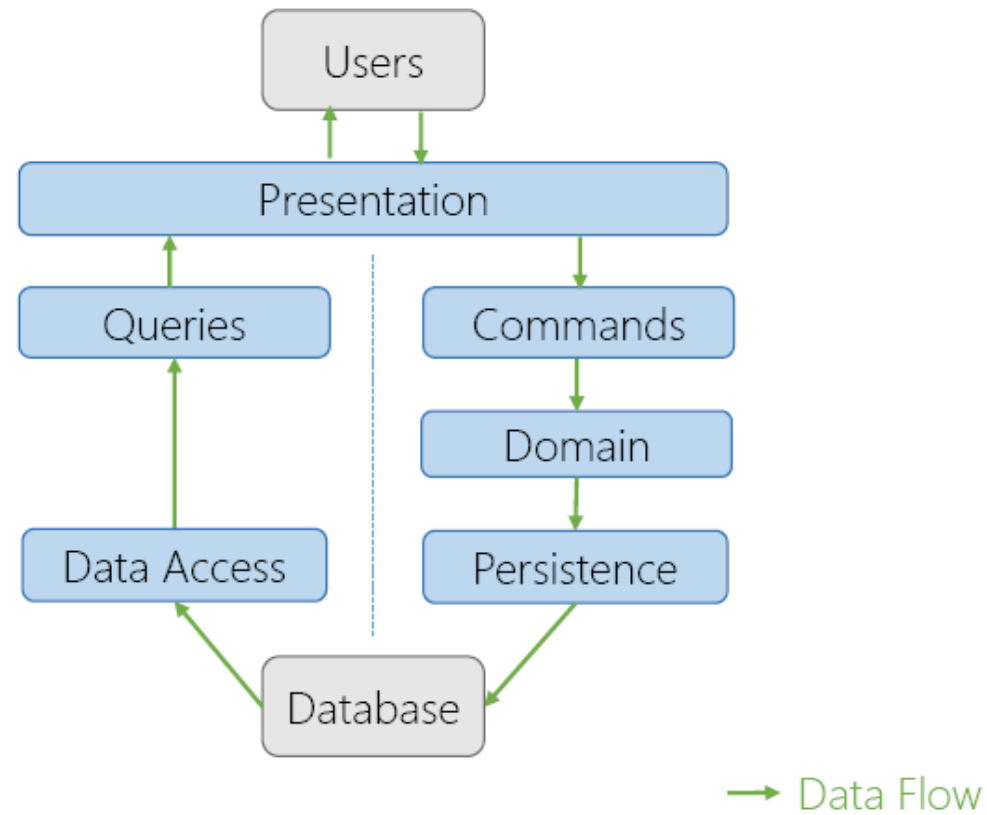
Should not modify state

Always returns a value

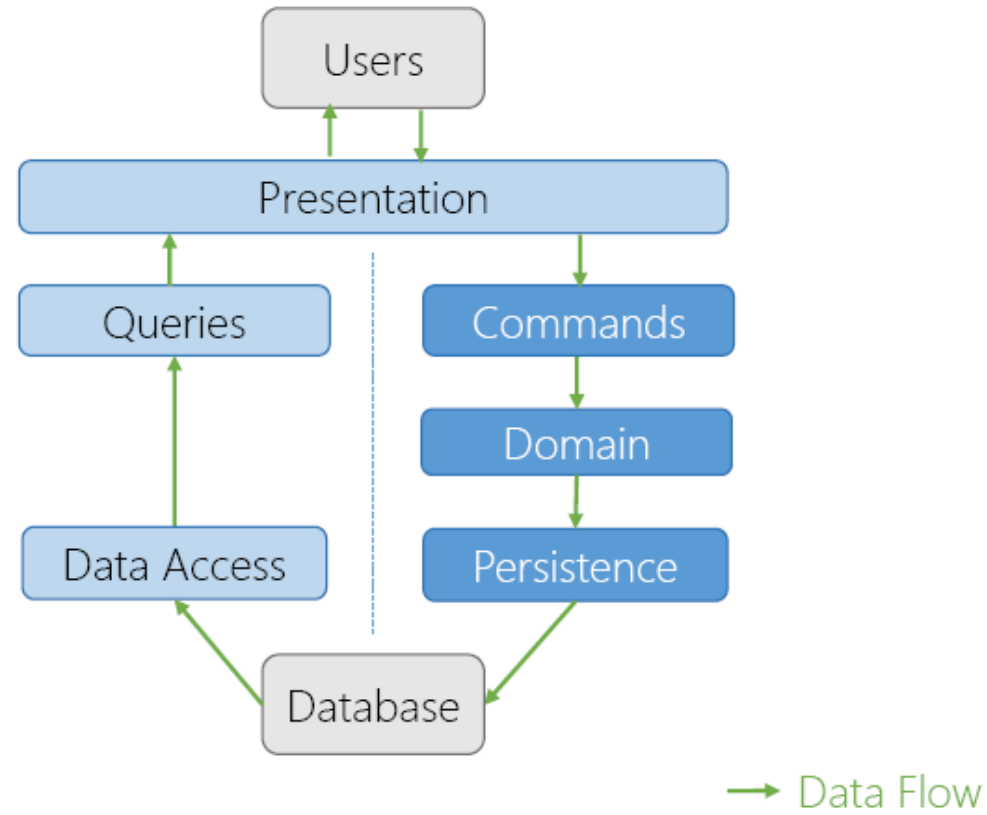
Avoid mixing the two!



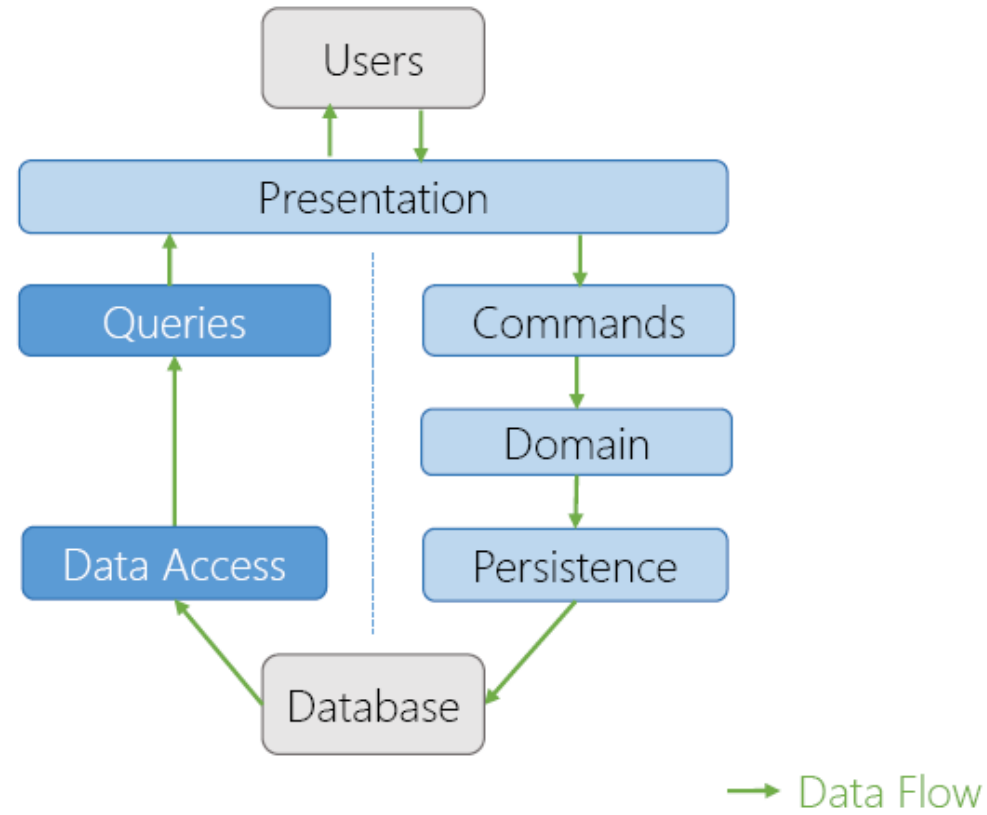
# CQRS Architectures

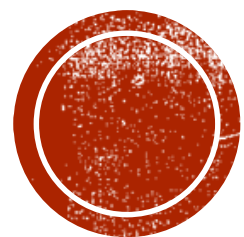


# CQRS Architectures



# CQRS Architectures



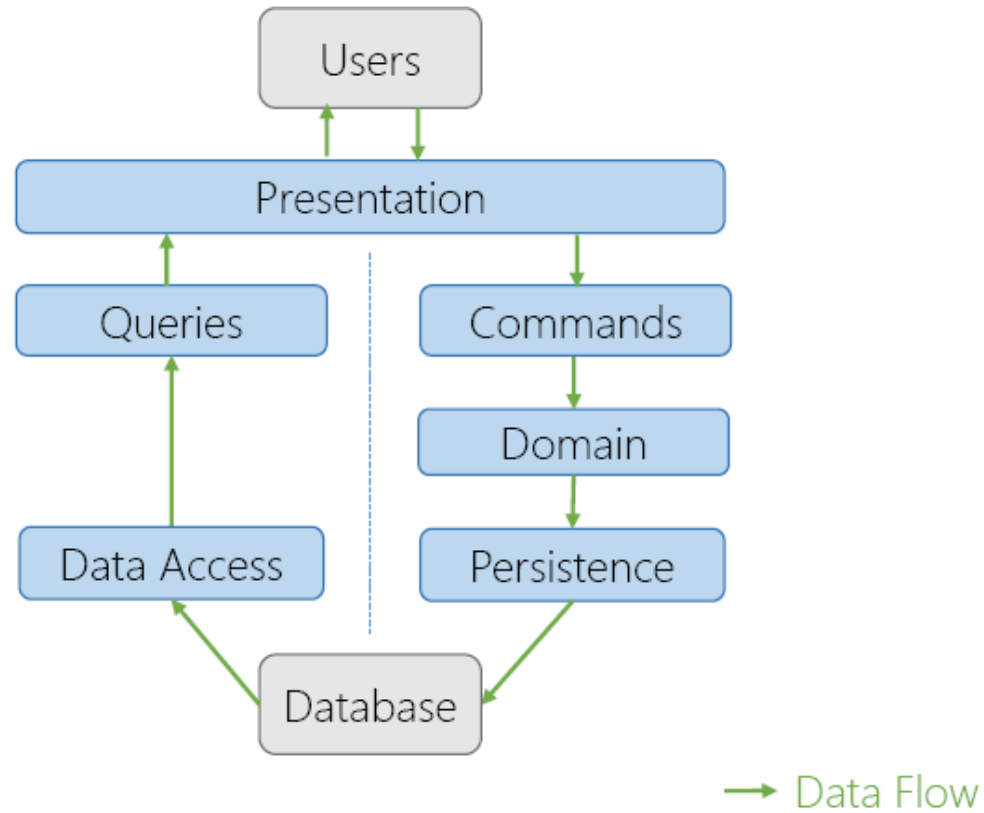


# ТИПОВИ АРХИТЕКТУРЕ СА РАЗДВАЈАЊЕМ КОМАНДИ И УПИТА

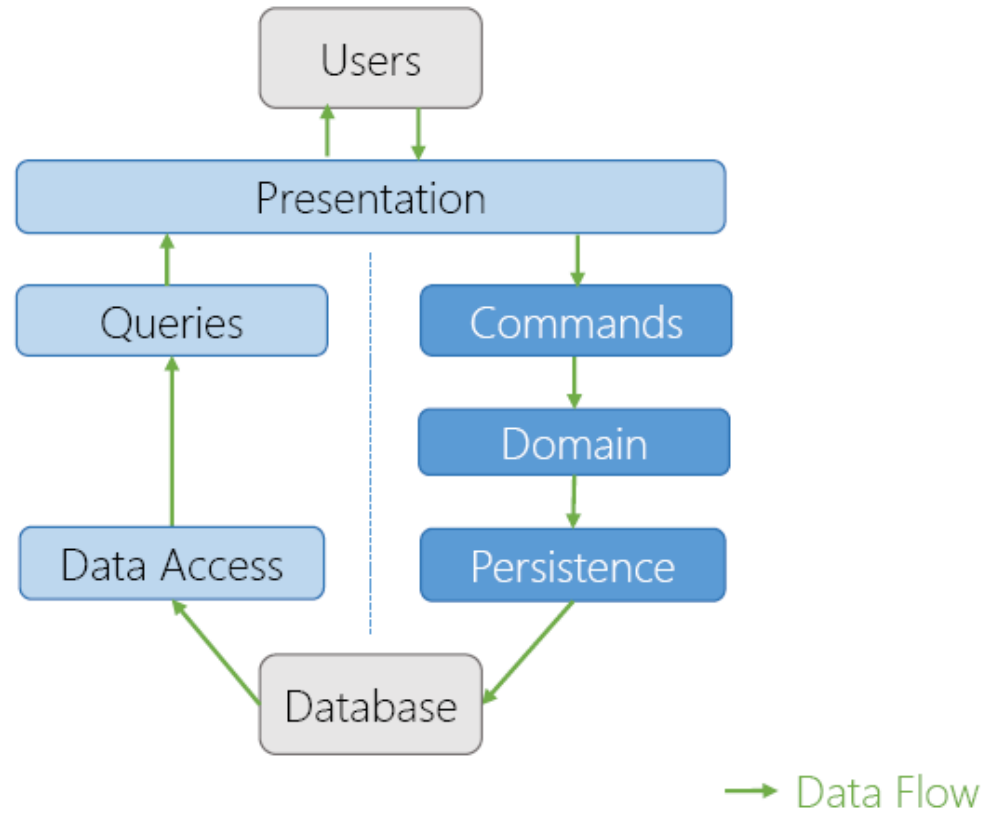




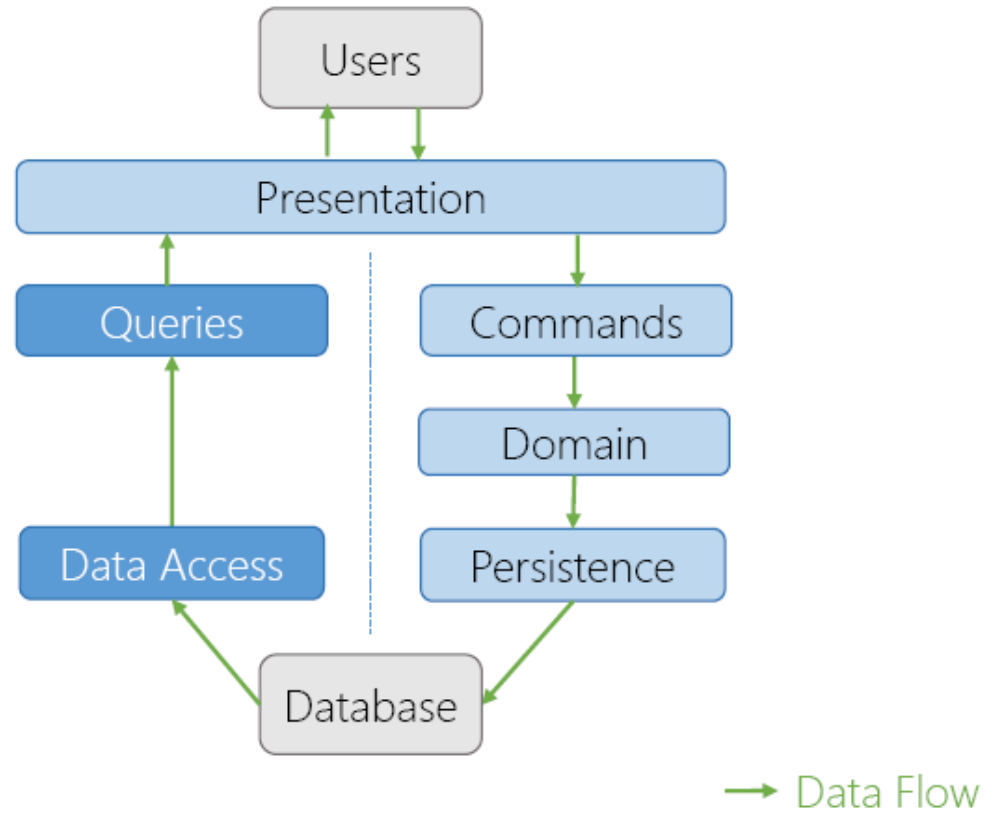
# CQRS Type 1 – Single Database



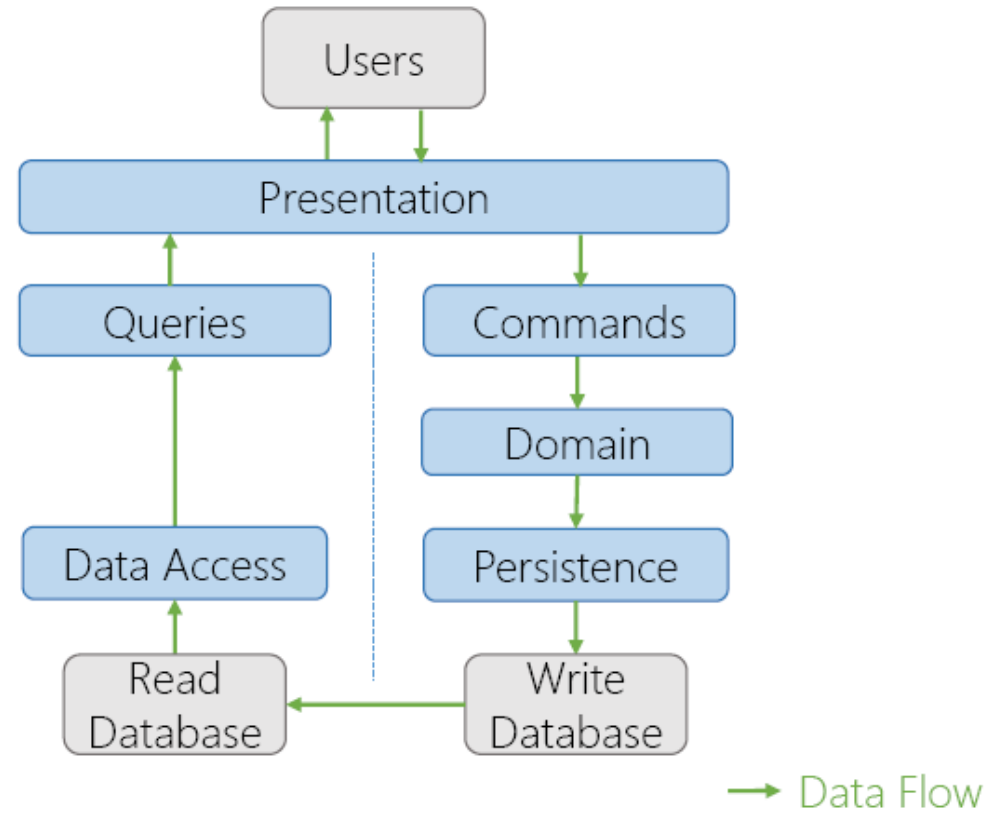
# CQRS Type 1 – Single Database



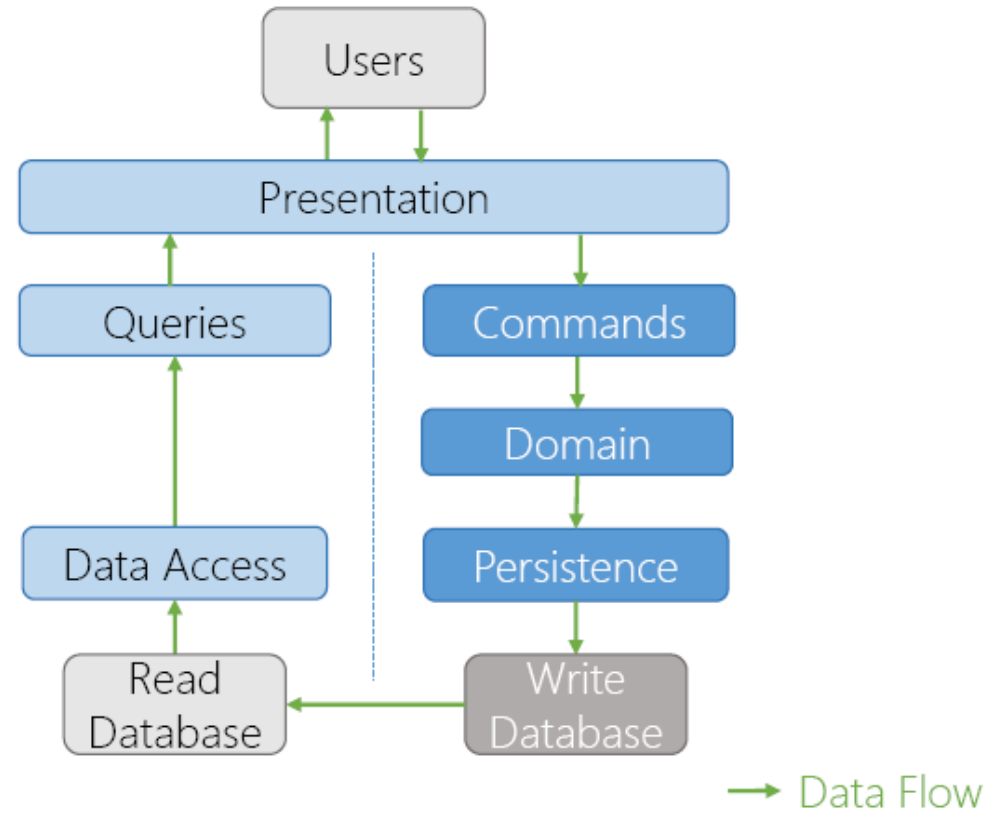
# CQRS Type 1 – Single Database



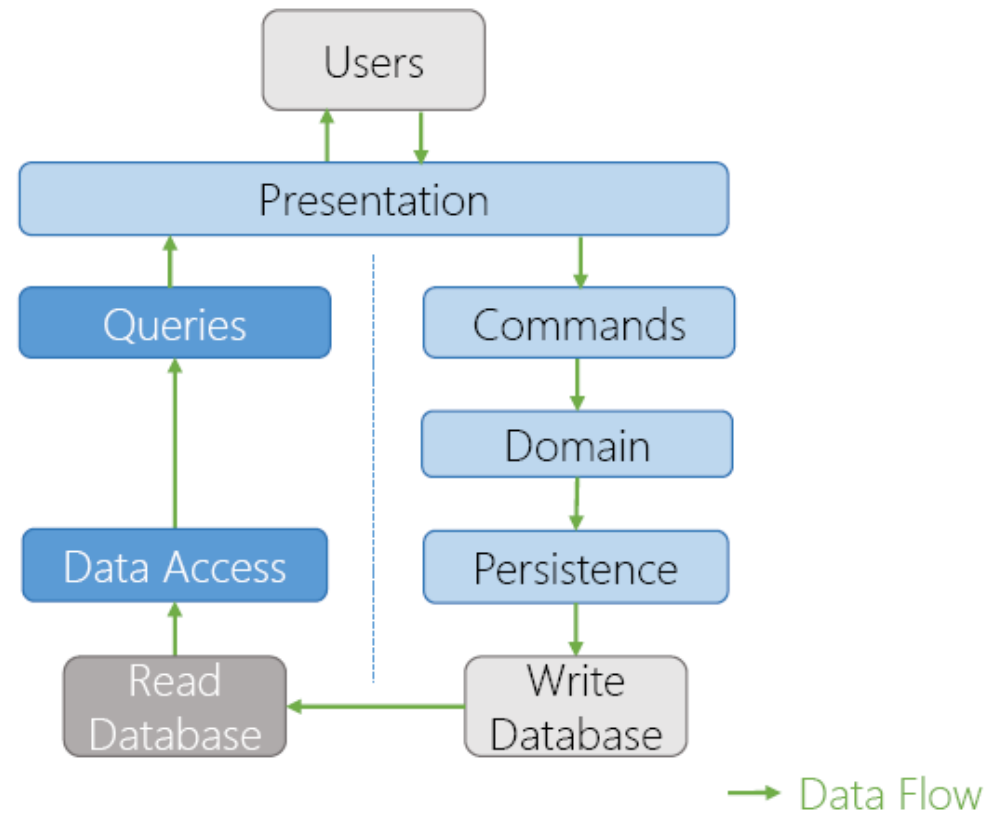
# CQRS Type 2 – Read/Write Databases



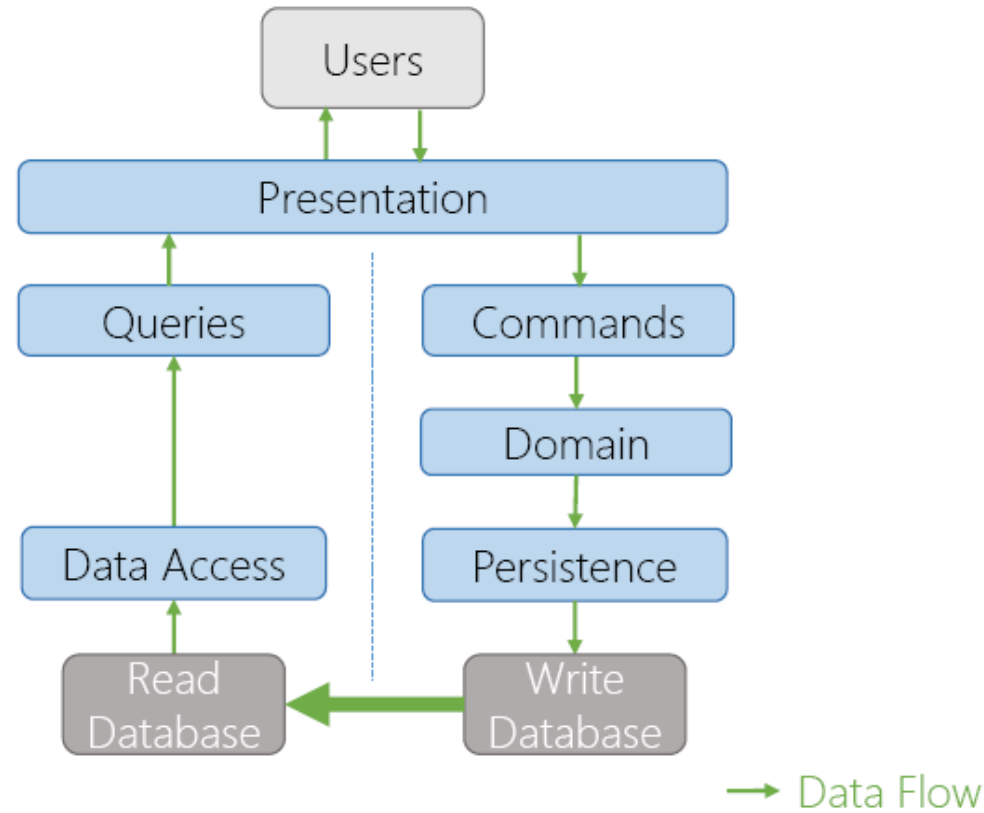
# CQRS Type 2 – Read/Write Databases



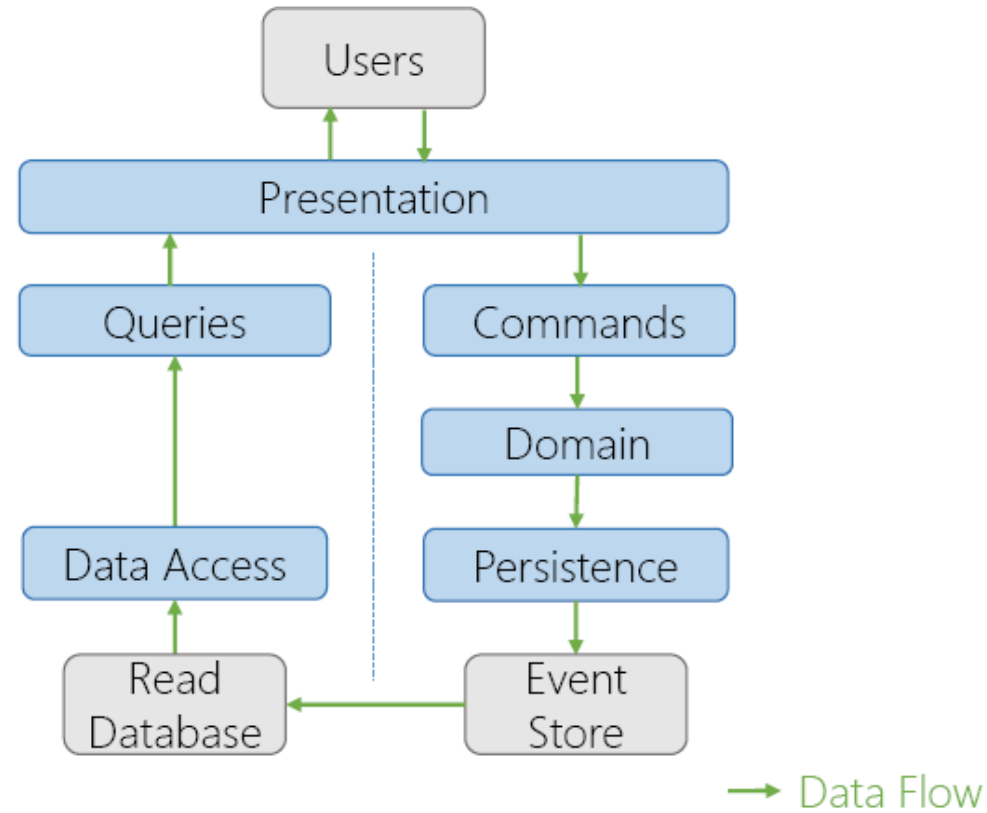
# CQRS Type 2 – Read/Write Databases



# CQRS Type 2 – Read/Write Databases

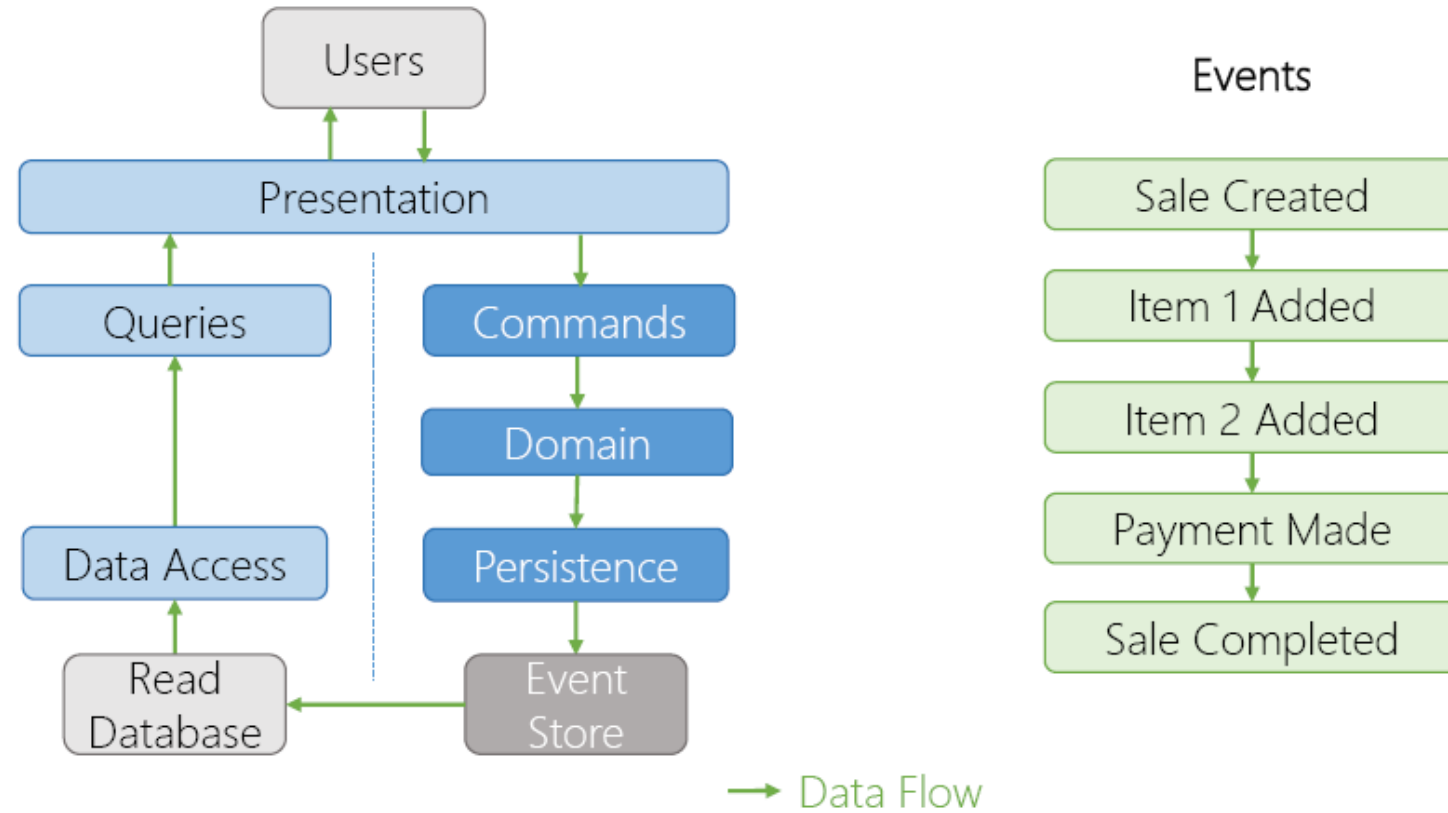


# CQRS Type 3 – Event Sourcing

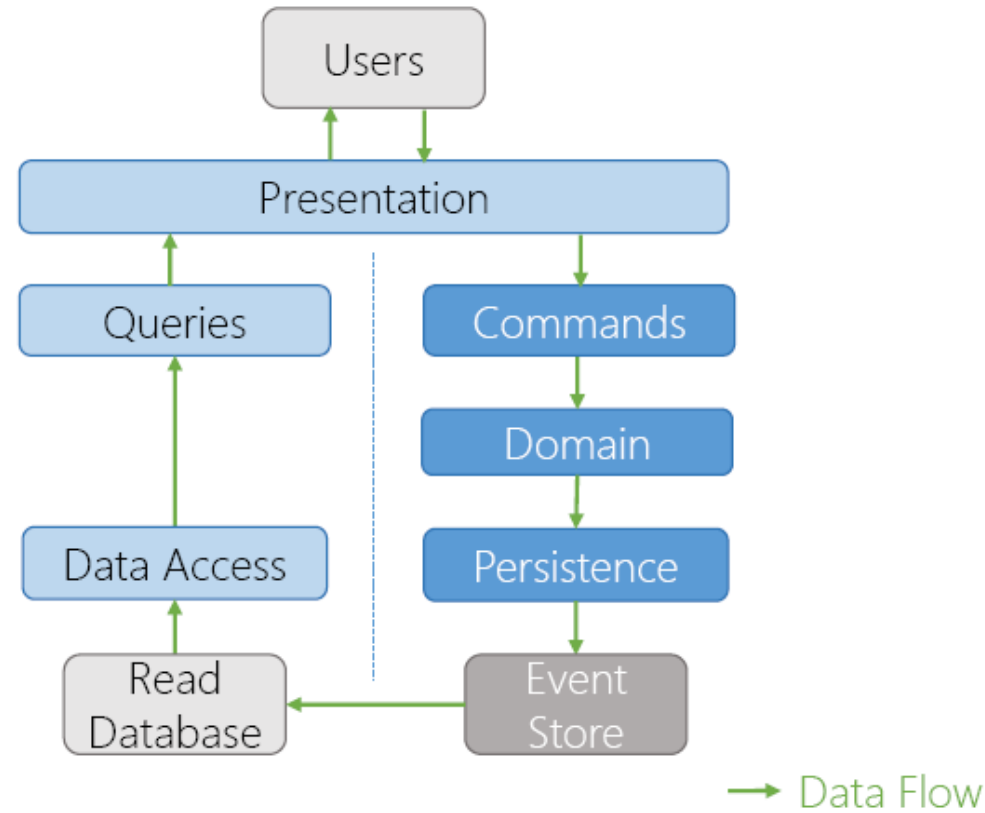




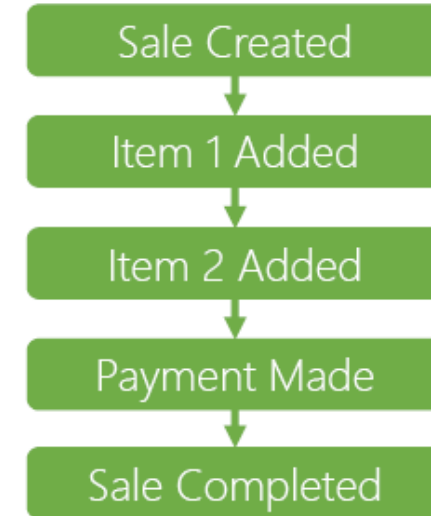
# CQRS Type 3 – Event Sourcing



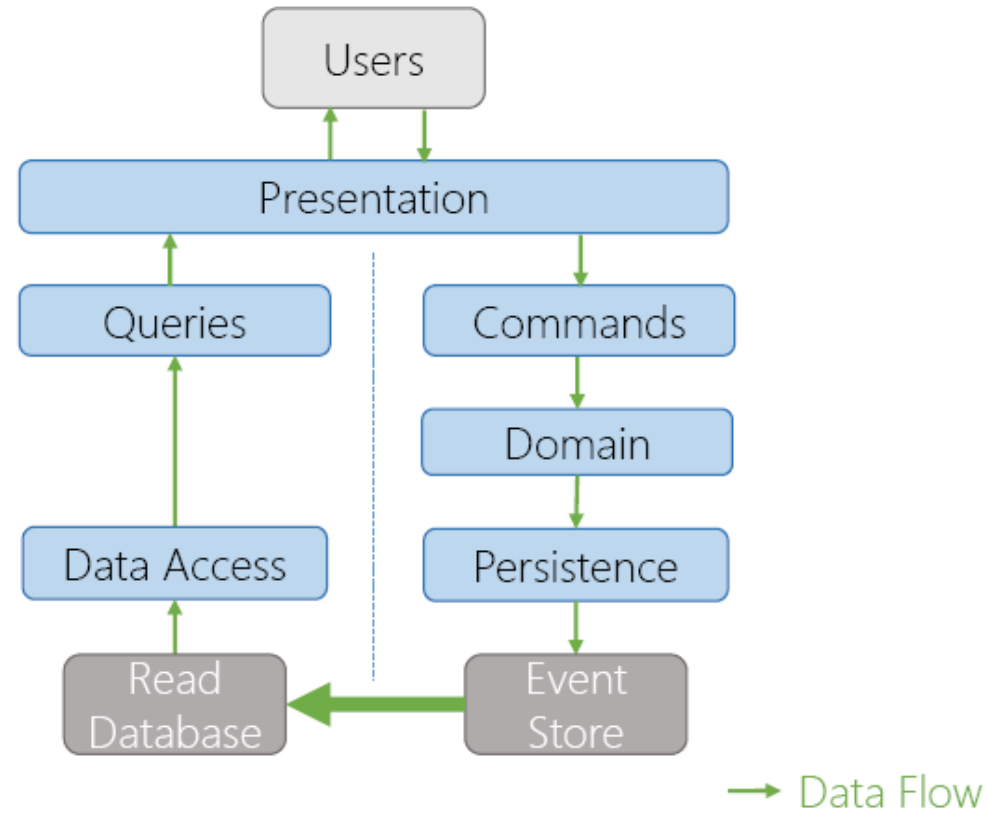
# CQRS Type 3 – Event Sourcing



## Events

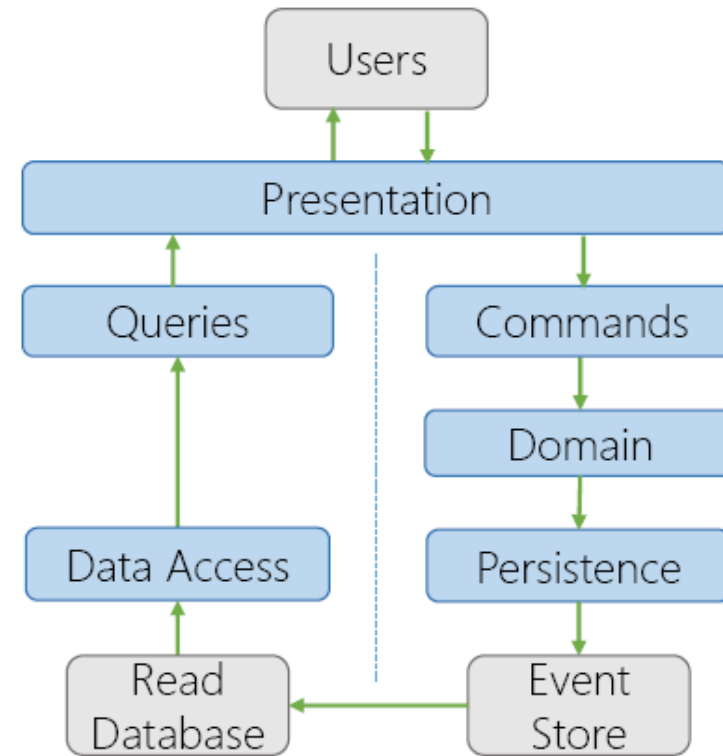


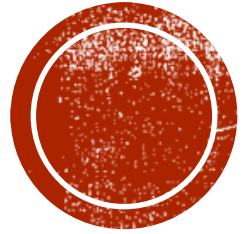
# CQRS Type 3 – Event Sourcing



# CQRS Type 3 – Event Sourcing

Complete audit trail  
Point-in-time reconstruction  
Replay events  
Rebuild production database





# ПРЕДНОСТИ И НЕДОСТАЦИ РАЗДВАЈАЊА КОМАНДИ И УПИТА



# Why Use CQRS?

## Pros

More efficient design

Simpler within each stack

Optimized performance



# Why Use CQRS?

## Pros

More efficient design

Simpler within each stack

Optimized performance

## Cons

Inconsistent across stacks

Type 2 is more complex

Type 3 might be overkill



# НАПОМЕНА

Највећи део материјала ове презентације је преузет из презентације **Clean Architecture**, аутора Matthew Renze, која је доступна на адреси:  
<https://matthewrenze.com/wp-content/uploads/presentations/clean-architecture.pdf>