BAKI ALİ NEFT MƏKTƏBİ
BAKU HIGHER OIL SCHOOL

Mobile development and security

Session 10

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Lecturer

What is the Software Architecture and why we need it?

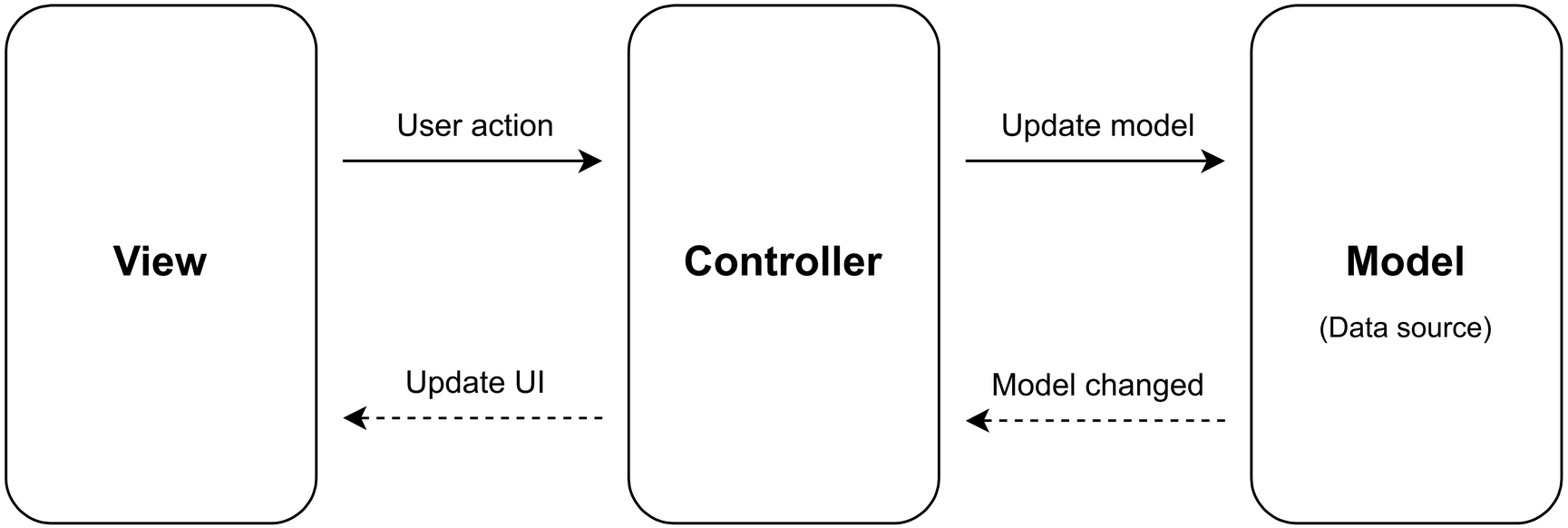
> The architecture of a software system is the shape given by those who build it. The purpose of that shape is to facilitate development, deployment, operation, and maintenance.

Robert.C.Martin, Clean Architecture

Architecture patterns

- MVC (Model View Controller)
- MVVM (Model View ViewModel)
- MVP (Model View Presenter)
- Clean Architecture

MVC (Model View Controller)



MVC

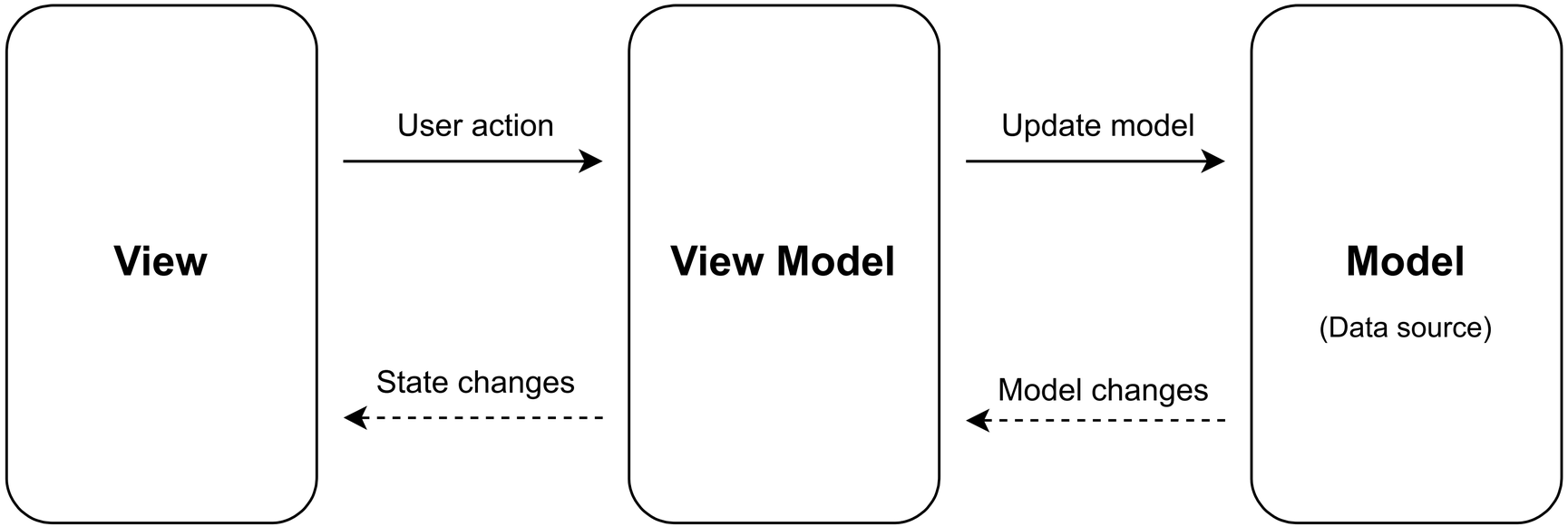
🙂 Pros

- It provides a clean separation of concerns
- The development of the various components can be performed parallelly.
- Promotes DRY (code reuse)

😐 Cons

- Increased complexity
- There is a need for multiple programmers to conduct parallel programming.
- Poor handling of view state logic
- The difficulty of using MVC with the modern user interface

MVVM (Model View ViewModel)



MVVM

🙂 Pros

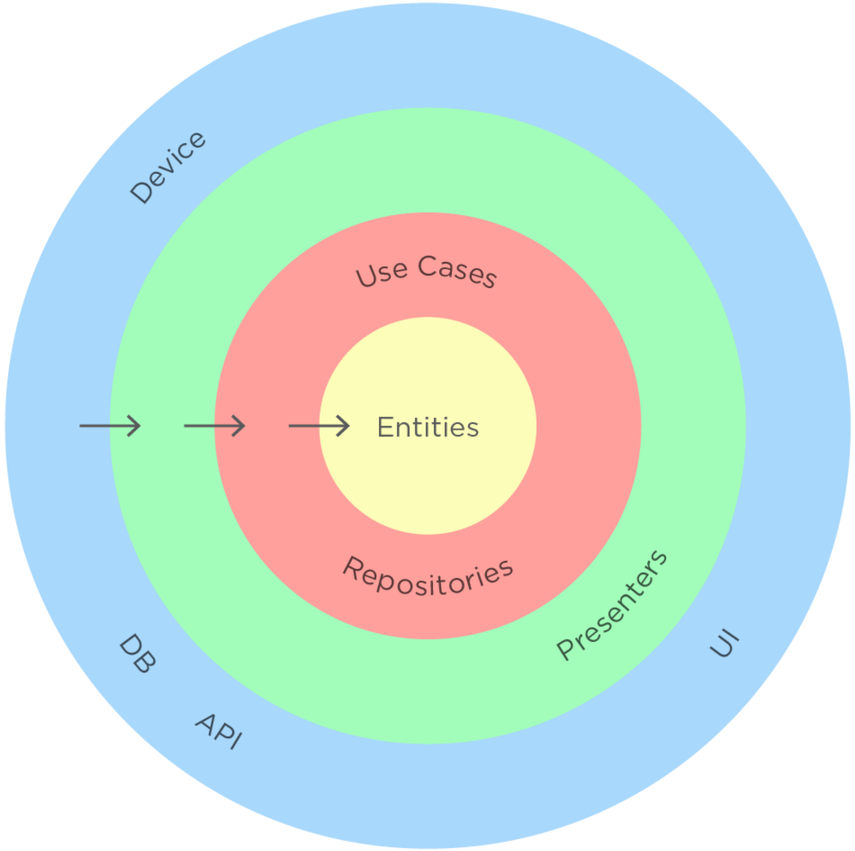
- Business logic is decoupled from UI
- Easy to reuse components
- Easy to maintain and test (TDD)

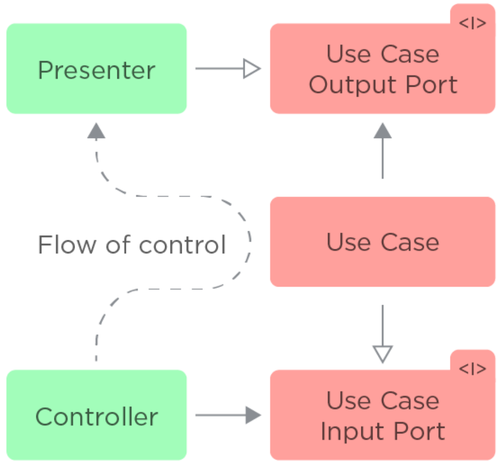
😐 Cons

- MVVM can be overkill for simple UIs
- Managing view models and their state in nested views and complex UI is difficult

What is Clean Architecture?

Clean architecture modules





Covered principles

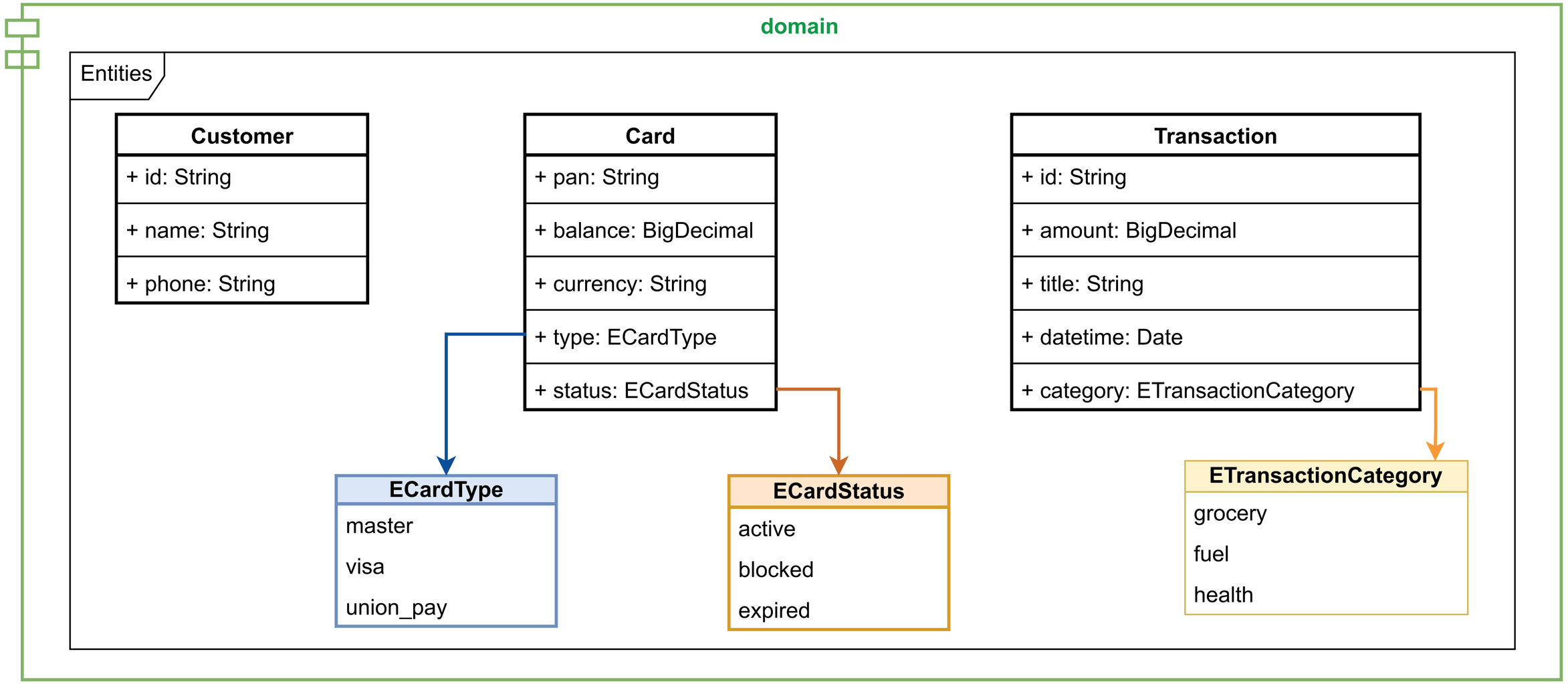
- SOLID
- Abstraction Principle
- Dependency Rule
- Single source of truth (SSOT)

Clean architecture

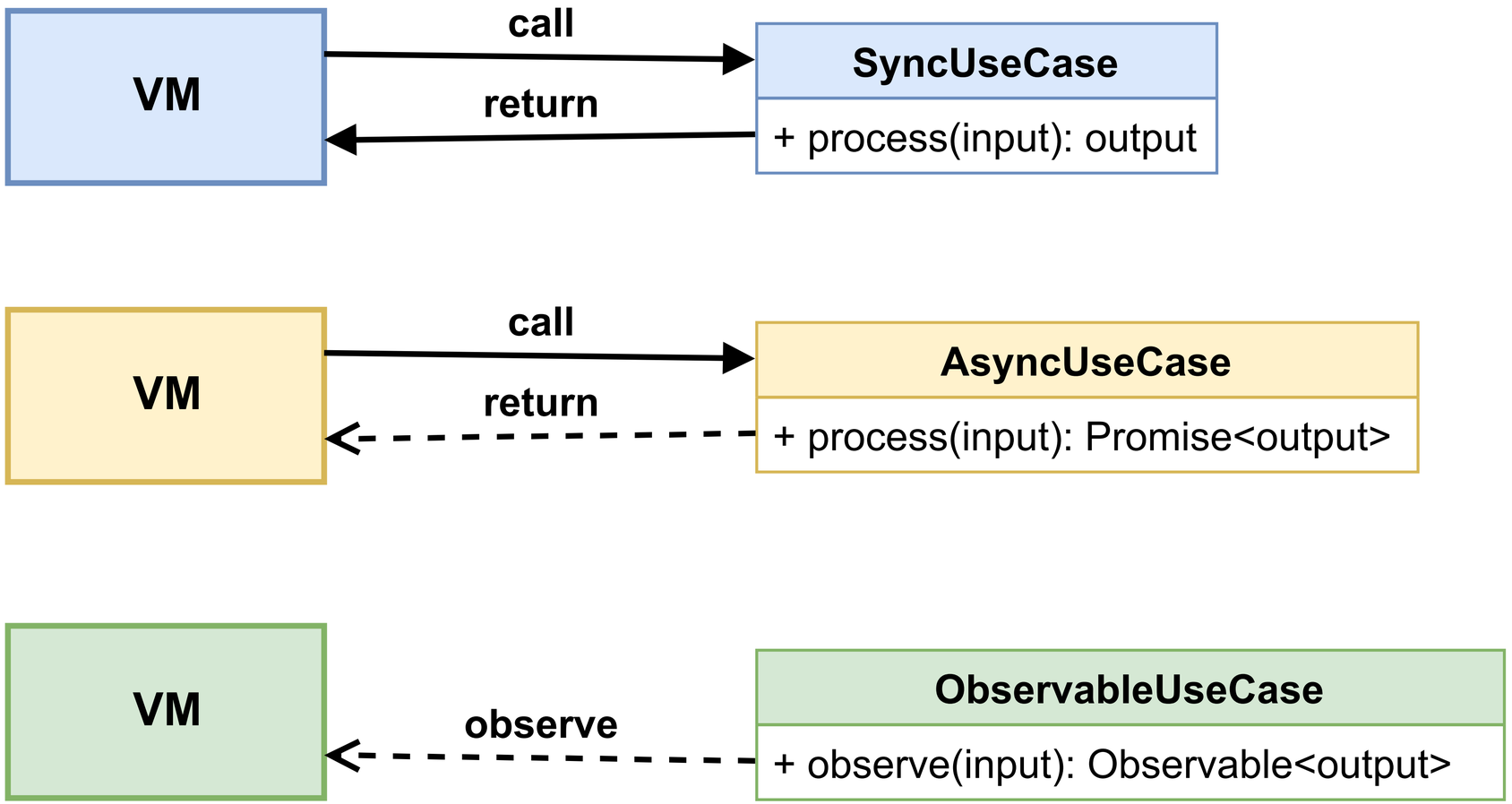
🙂 Pros

- Framework independence (Database, User interfaces)
- Isolation
- Testability

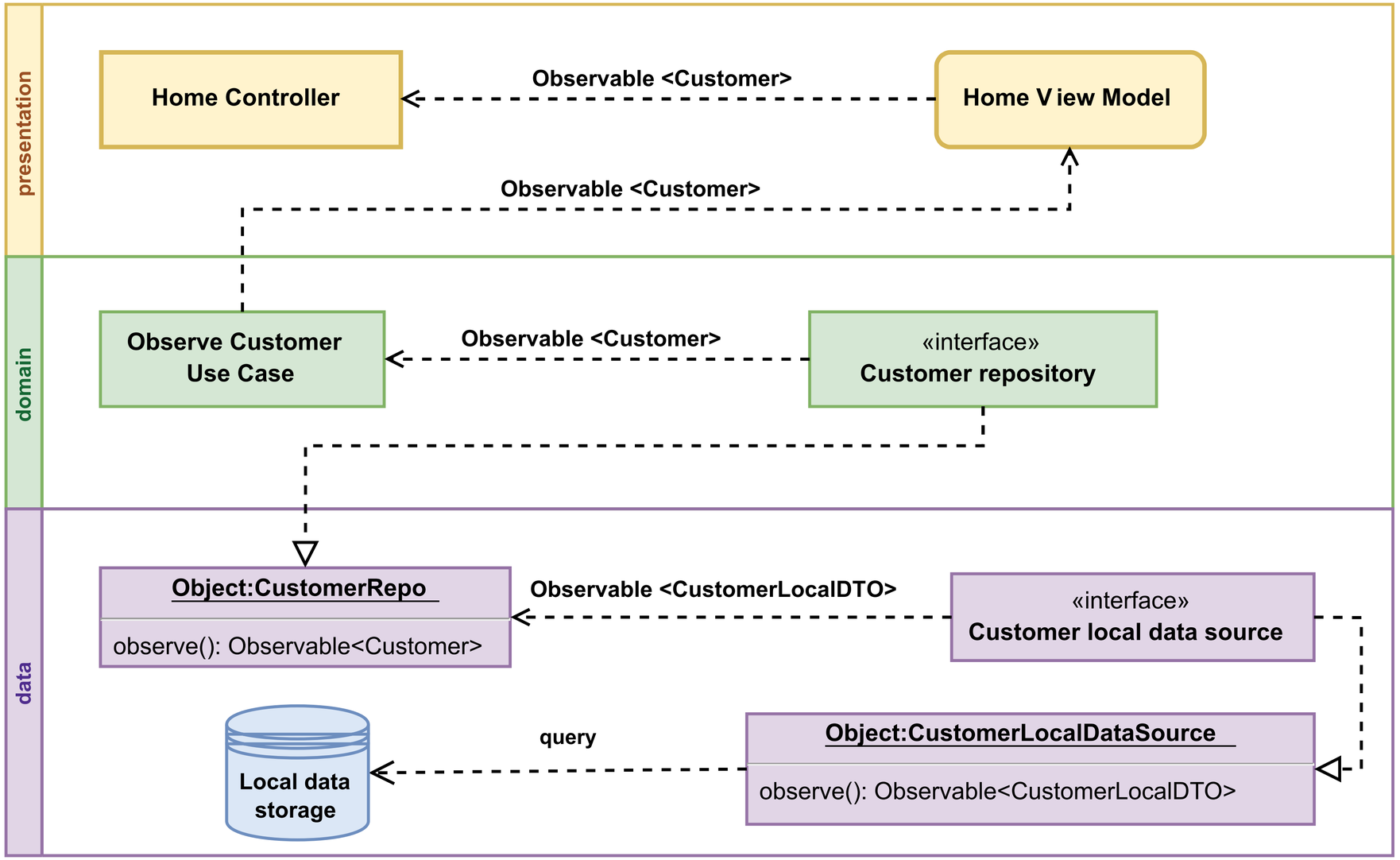
Entity classes



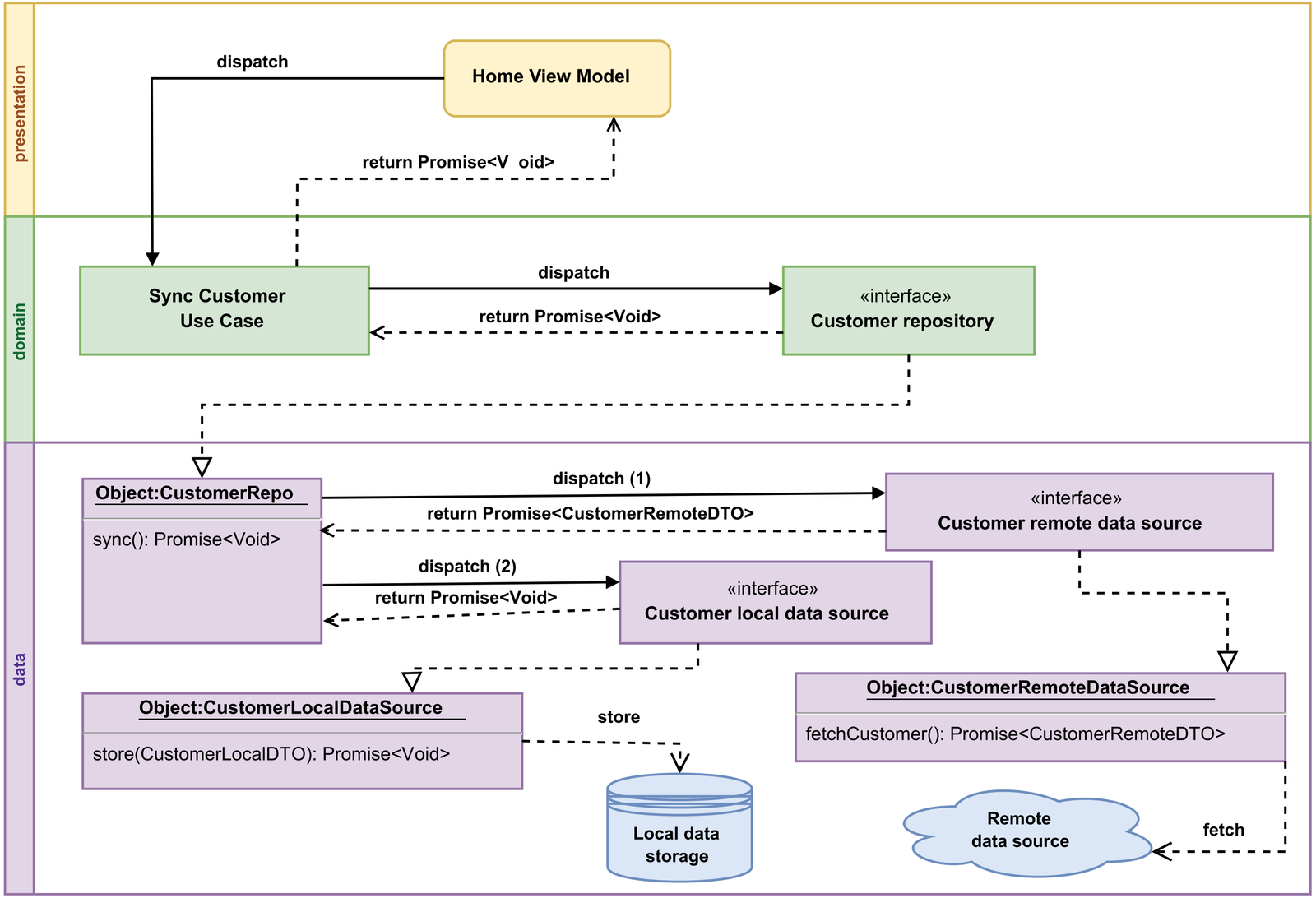
Types of data flow



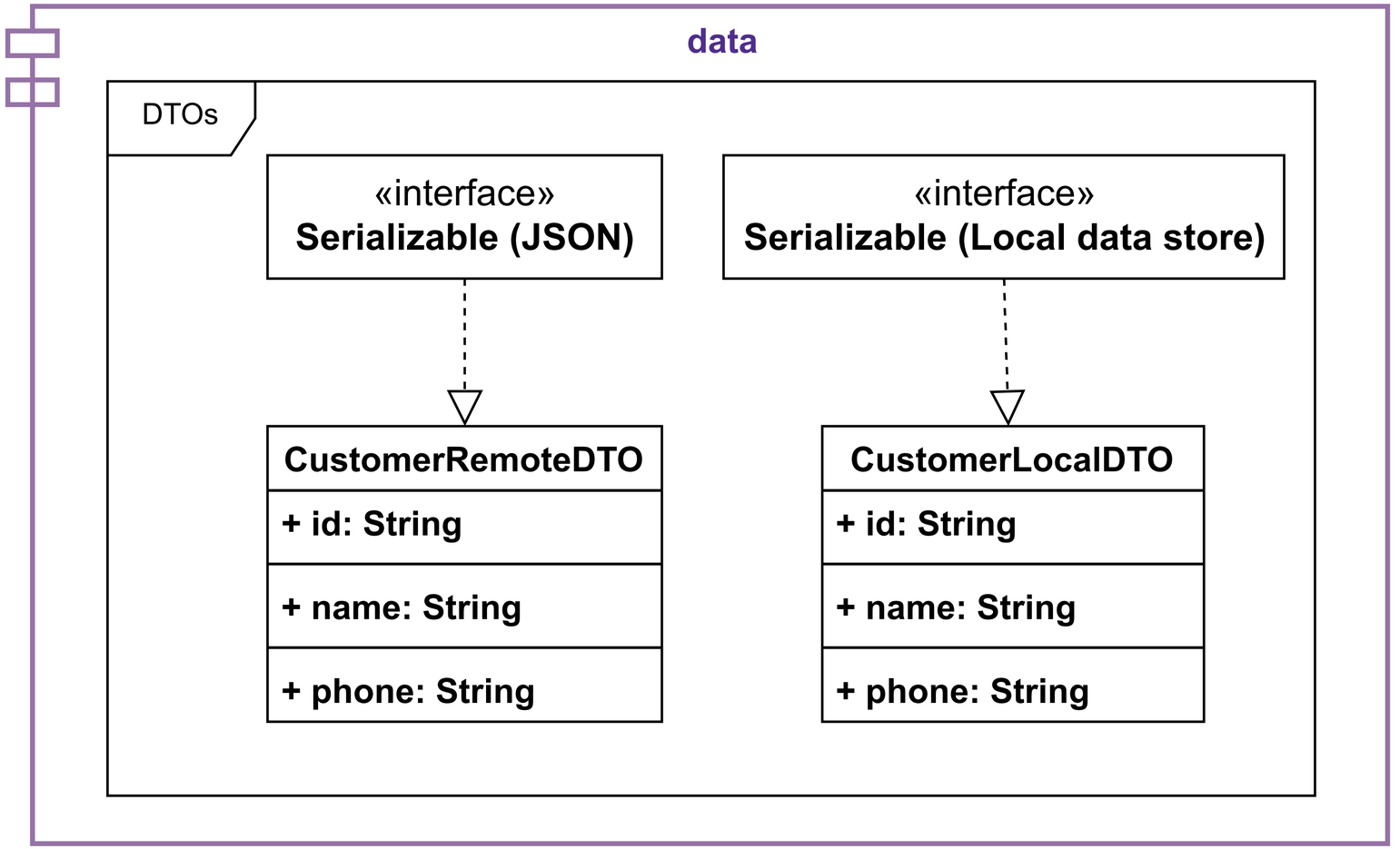
Observe customer data



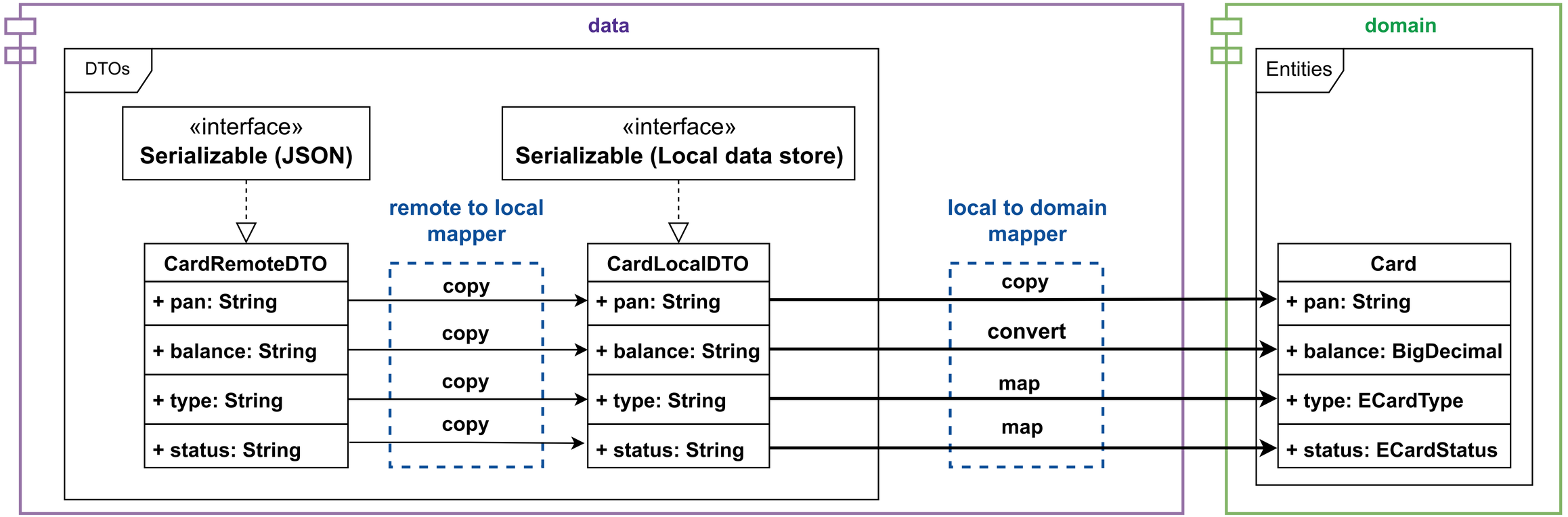
Sync customer data



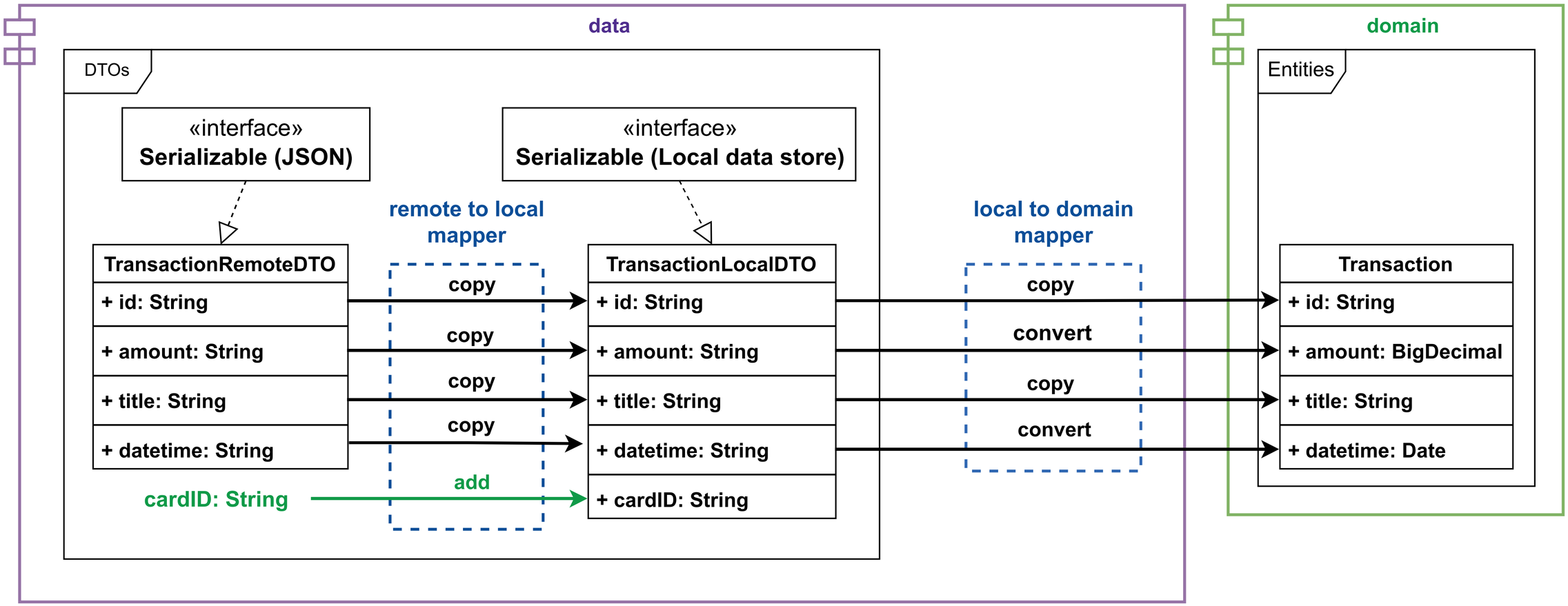
Data mapping (contd.)



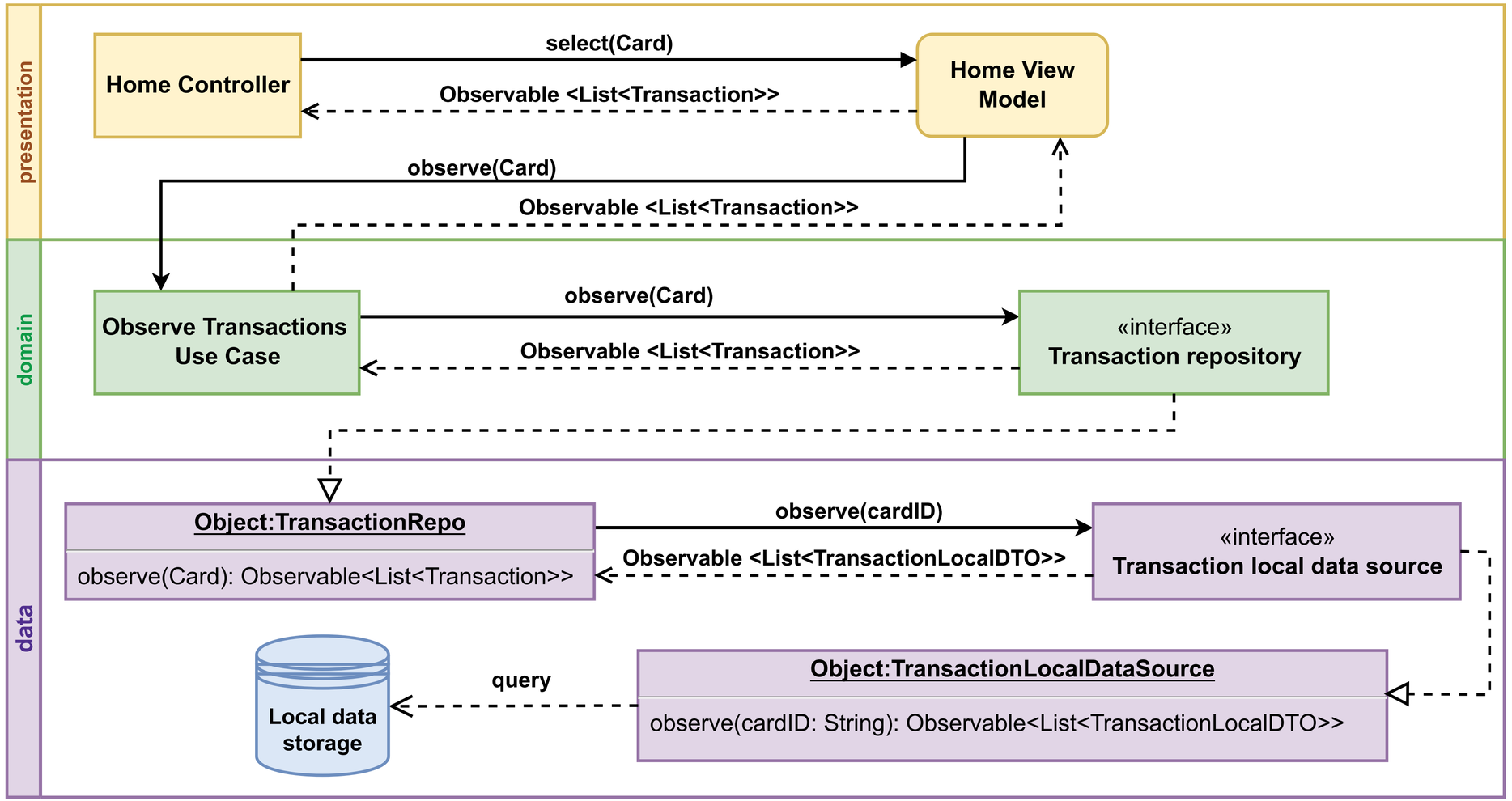
Data mapping



Data mapping



Observe transaction data



Clean architecture

😐 Cons

- Adaptation period of newcomers

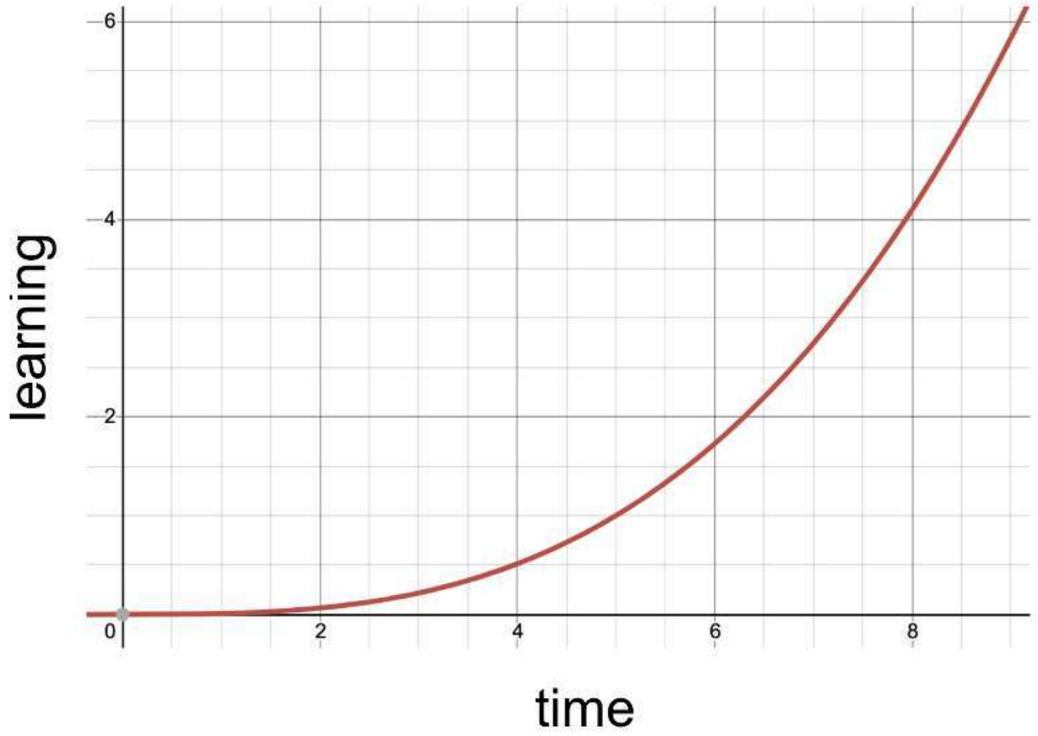
- More coding

  Interfaces

  Data models

  DTOs

  Mappers



References

- **Guide app architecture** - https://developer.android.com/topic/architecture
- **Modularization** - https://developer.android.com/topic/modularization

End of the session