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# Enterprise Application Patterns

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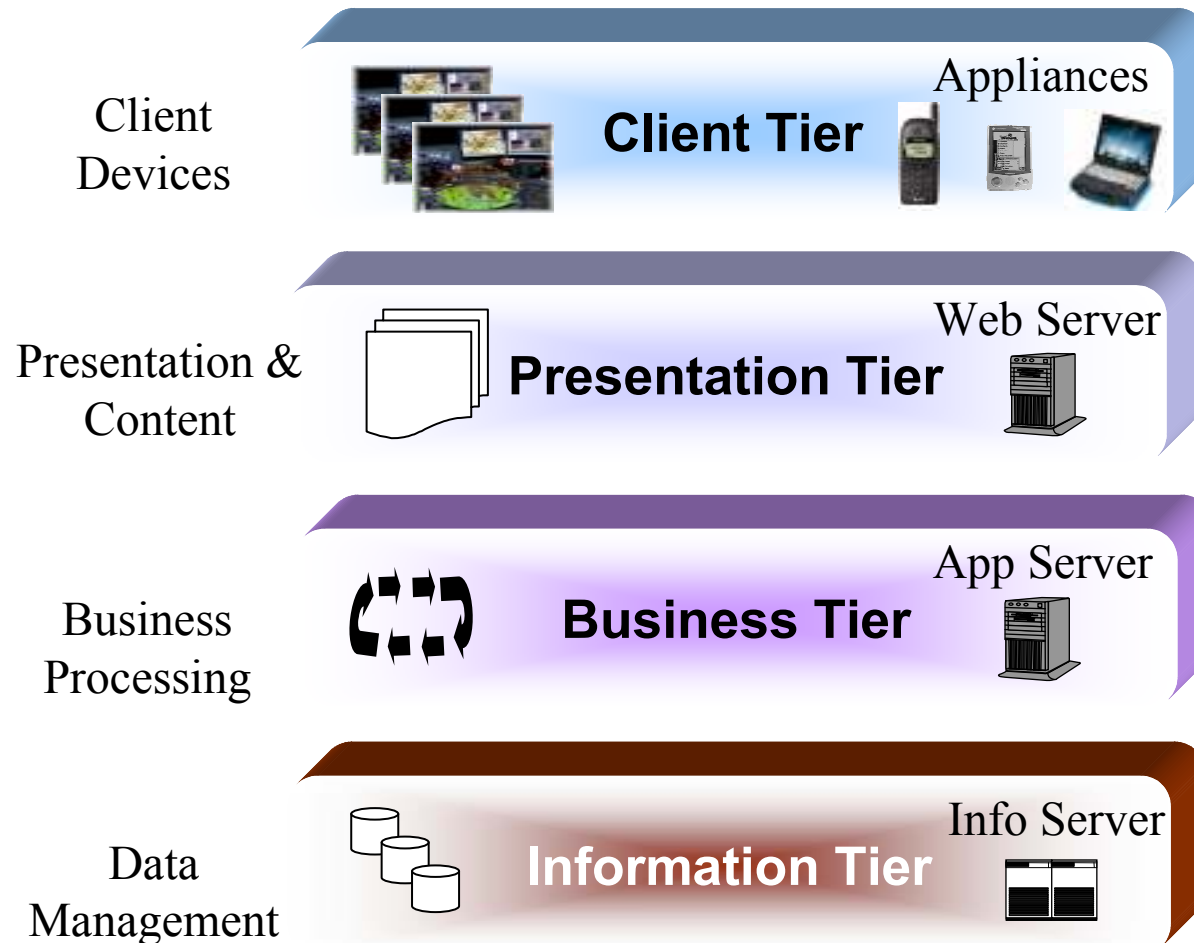
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# Typical Business Information System



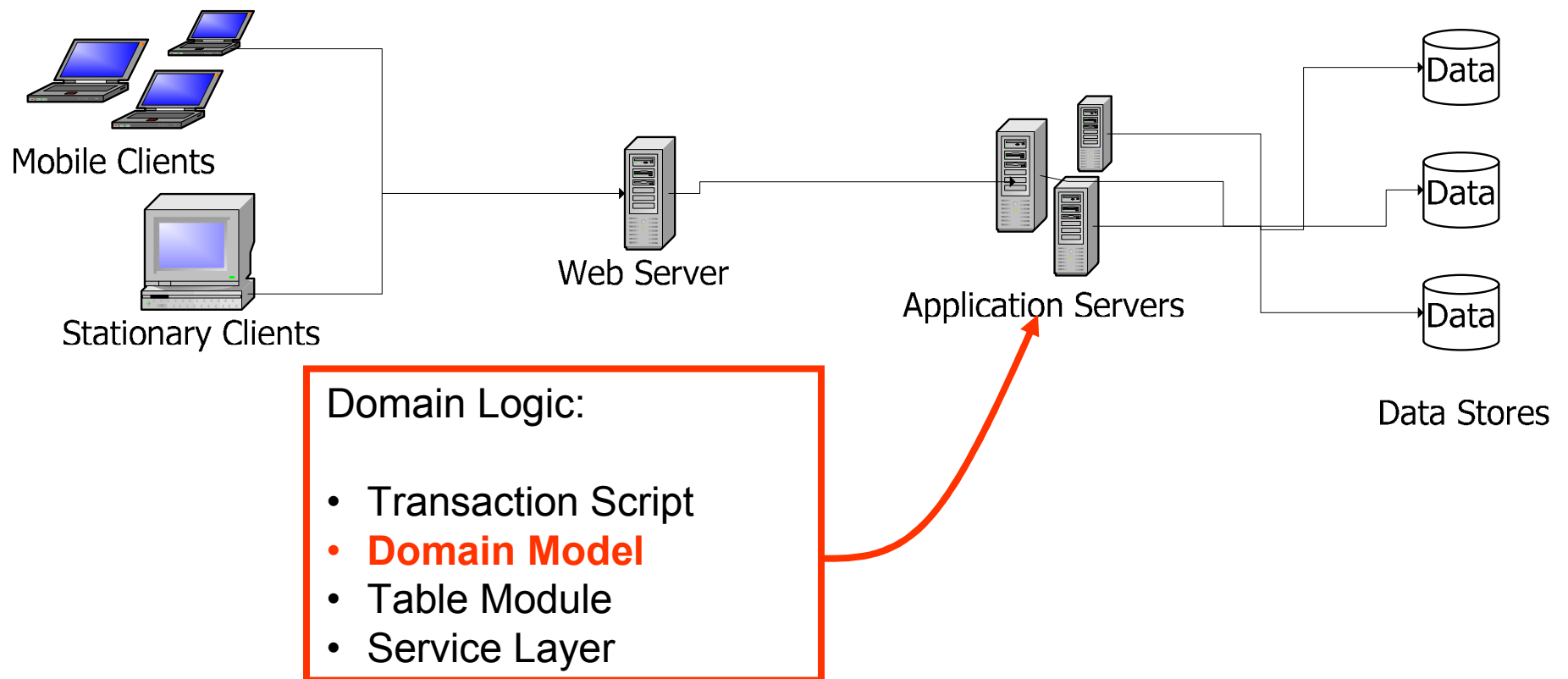
adapted from [M05]

# Enterprise Application Patterns

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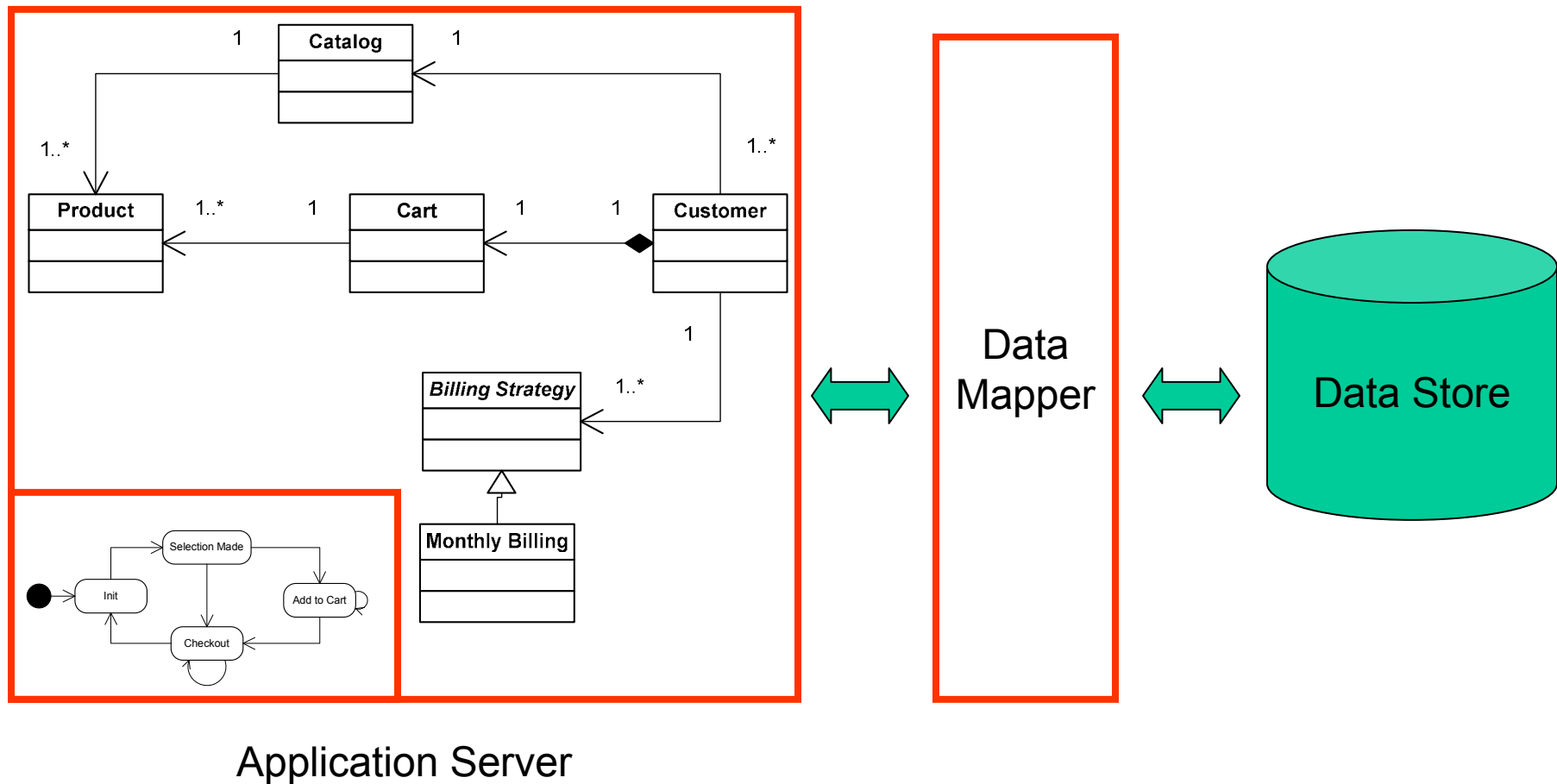
- How to build and integrate layers:
  - Client (access devices)
  - Presentation (handling of client requests)
  - Domain (application logic)
  - Data (databases, other data sources)
- What alternative approaches exist?
- What are the drivers and tradeoffs?
- What technologies to select?
- **Fowler: Patterns of Enterprise Application Architecture, Addison Wesley, 2003**

# Enterprise Application Patterns

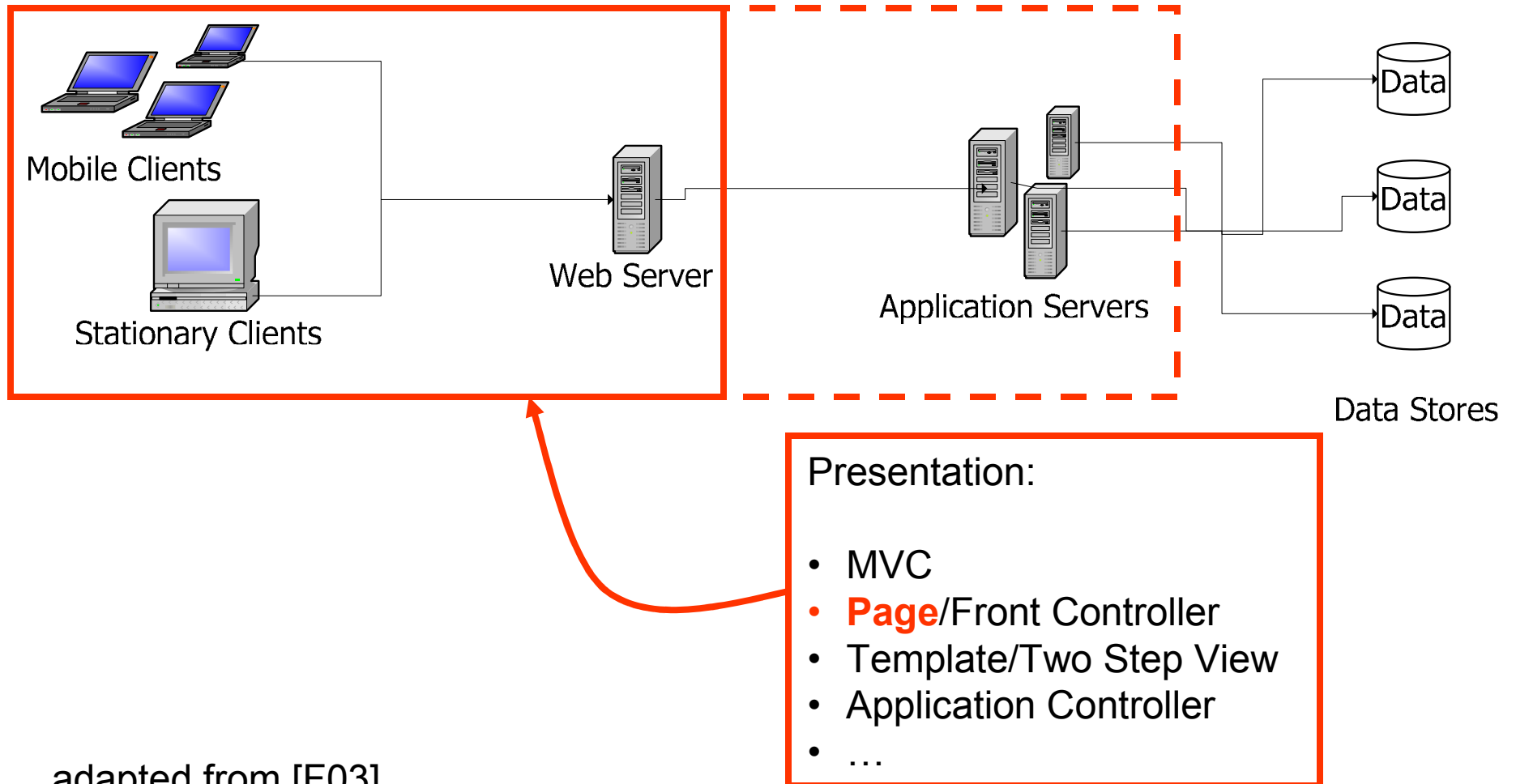


adapted from [F03]

# Example: Domain Model

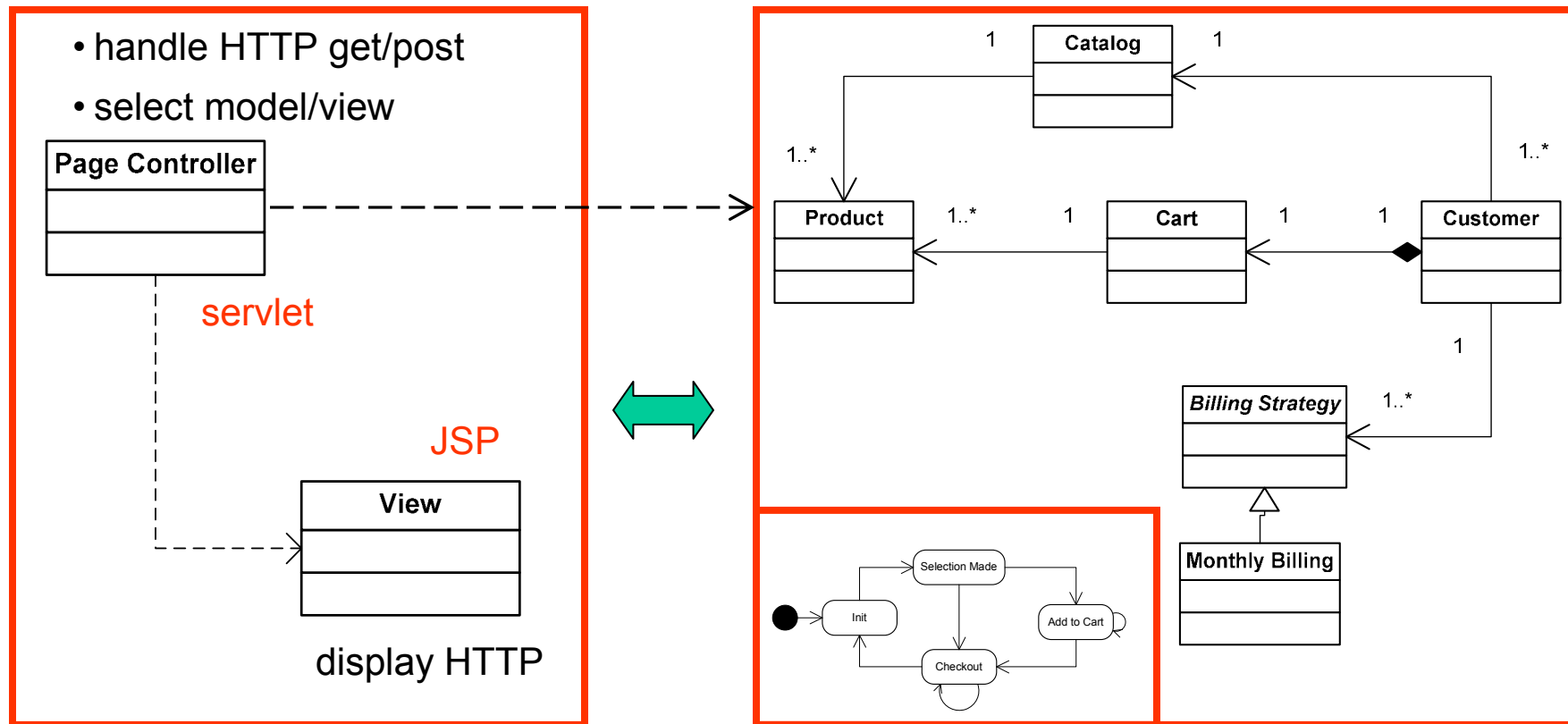


# Enterprise Application Patterns



adapted from [F03]

# Example: Page Controller

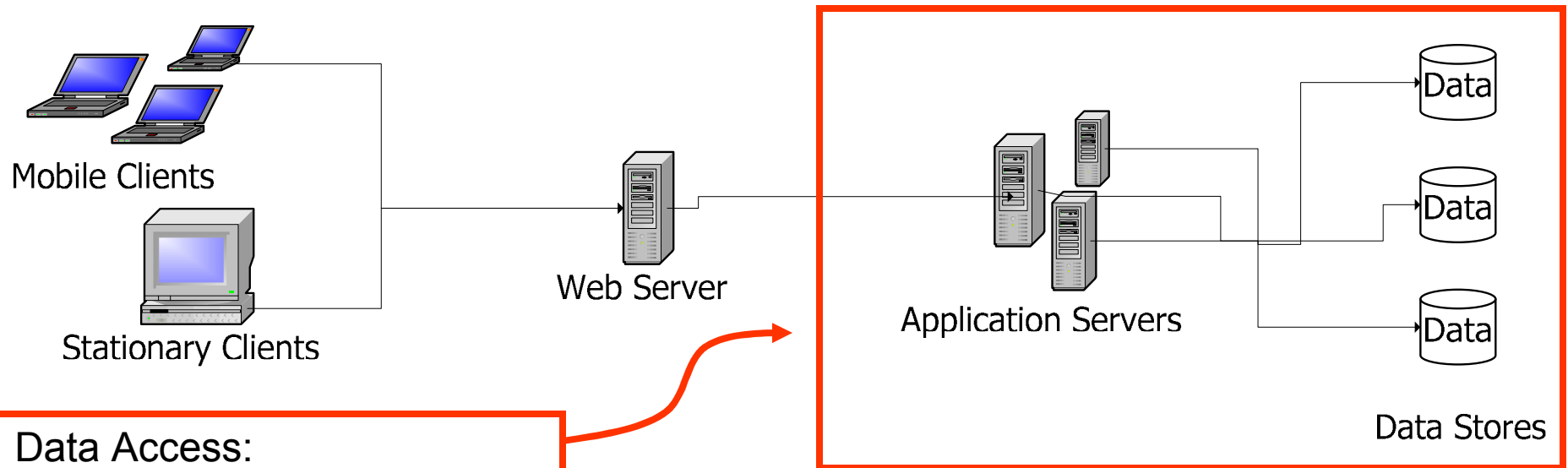


Application Server

adapted from [F03]

# Enterprise Application Patterns

adapted from [F03]



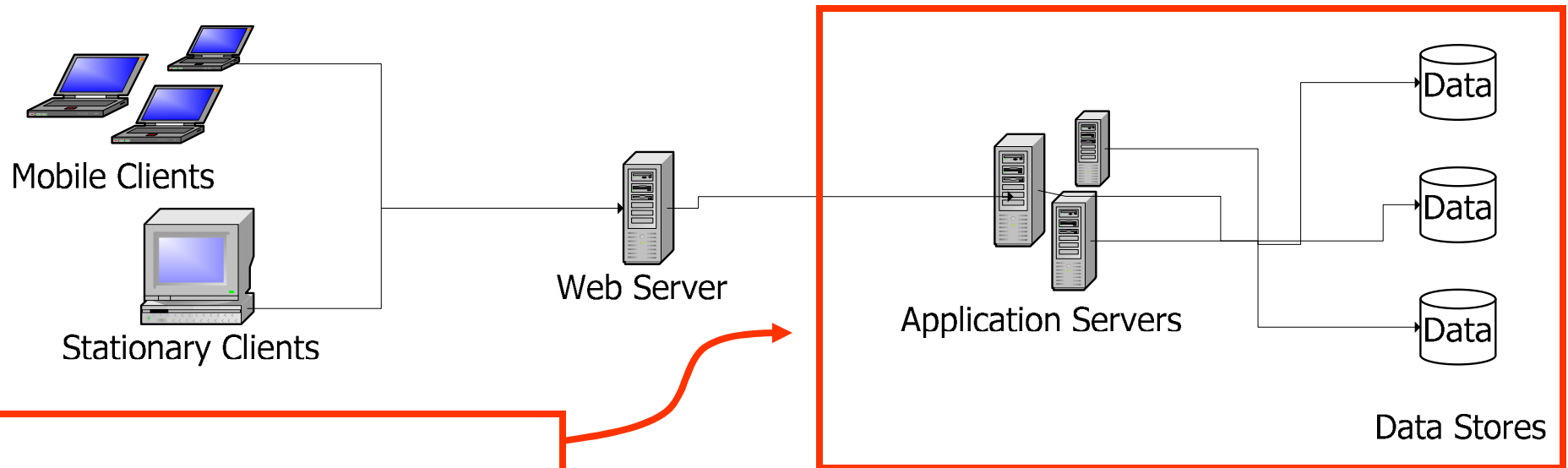
## Data Access:

- Table/Row Data Gateway
- Active Record
- **Data Mapper**
- Unit of Work
- Identity Map
- Lazy Load

- Identity Field
- Foreign Key Mapping
- Association Table Mapping
- Dependent Mapping
- Embedded Value
- Lazy Load

- Serialized LOP
- Single/ Class/ Concrete Table Inheritance
- Inheritance Mappers

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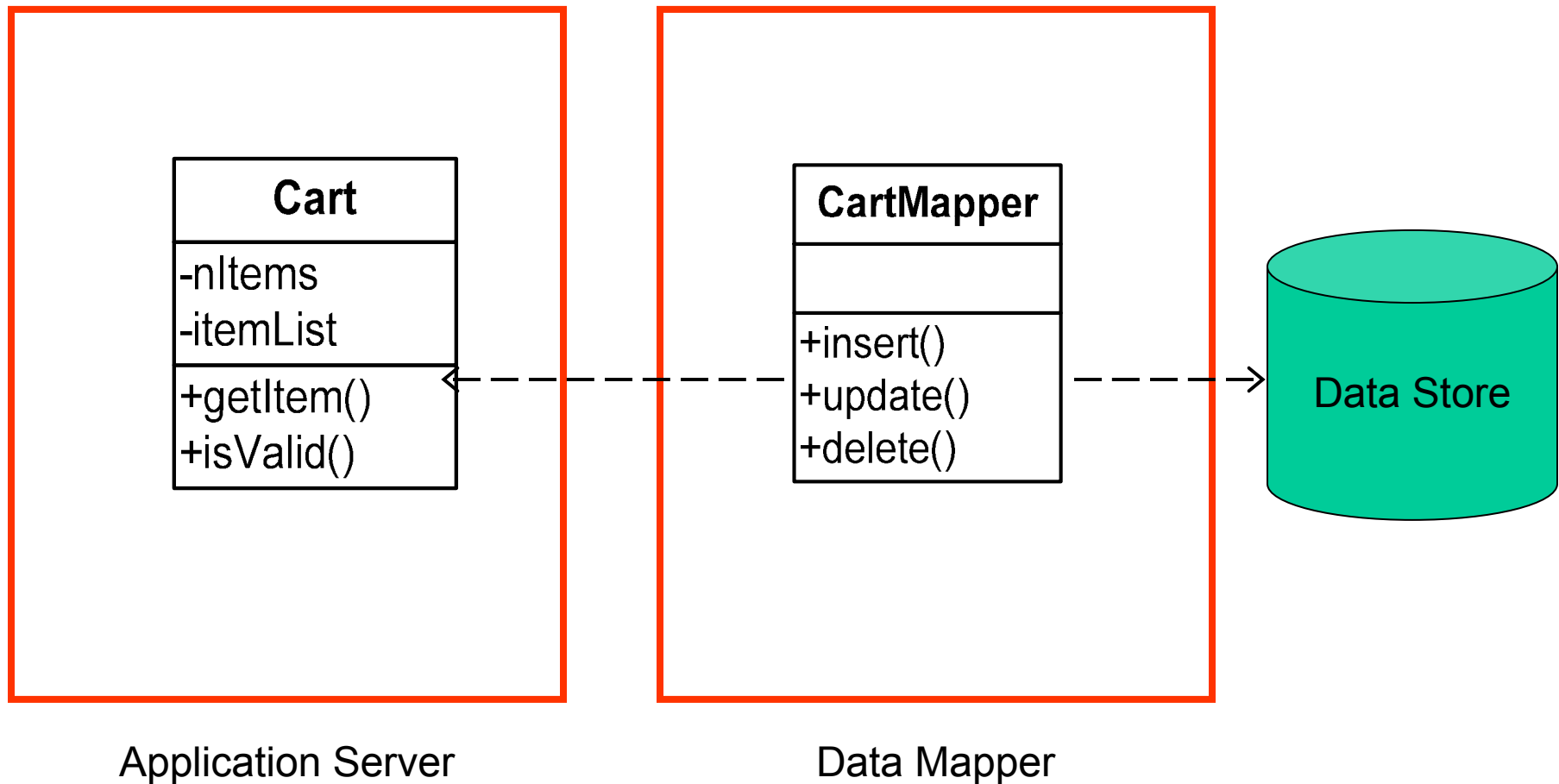


## Data Access:

- Metadata Mapping
- Query Object
- Repository

adapted from [F03]

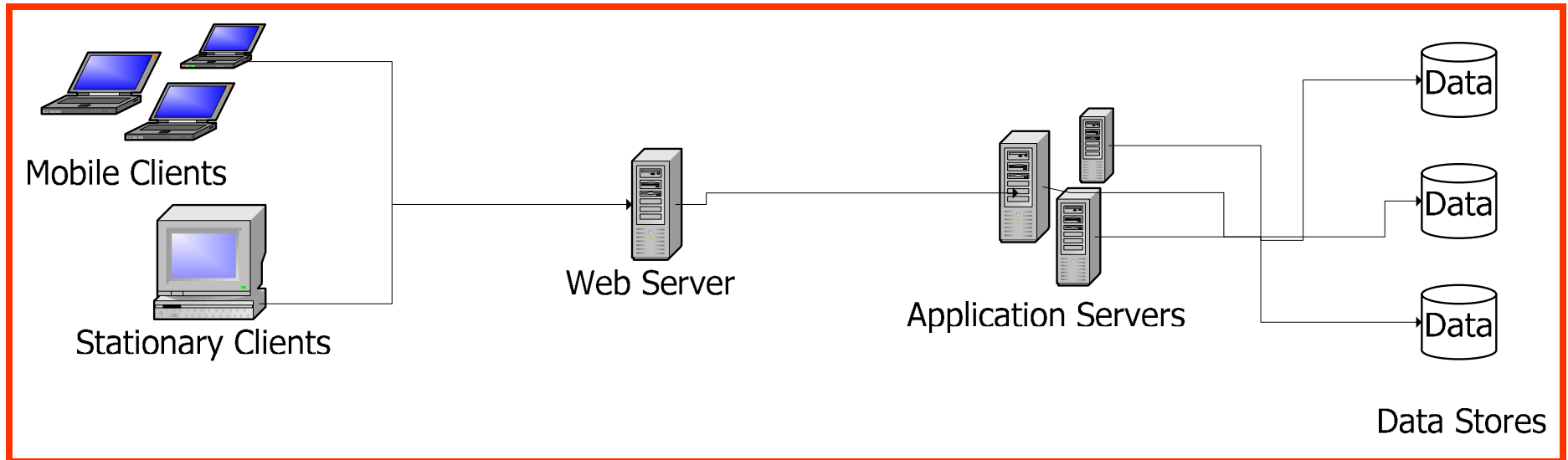
# Example: Data Mapper



adapted from [F03]

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adapted from [F03]

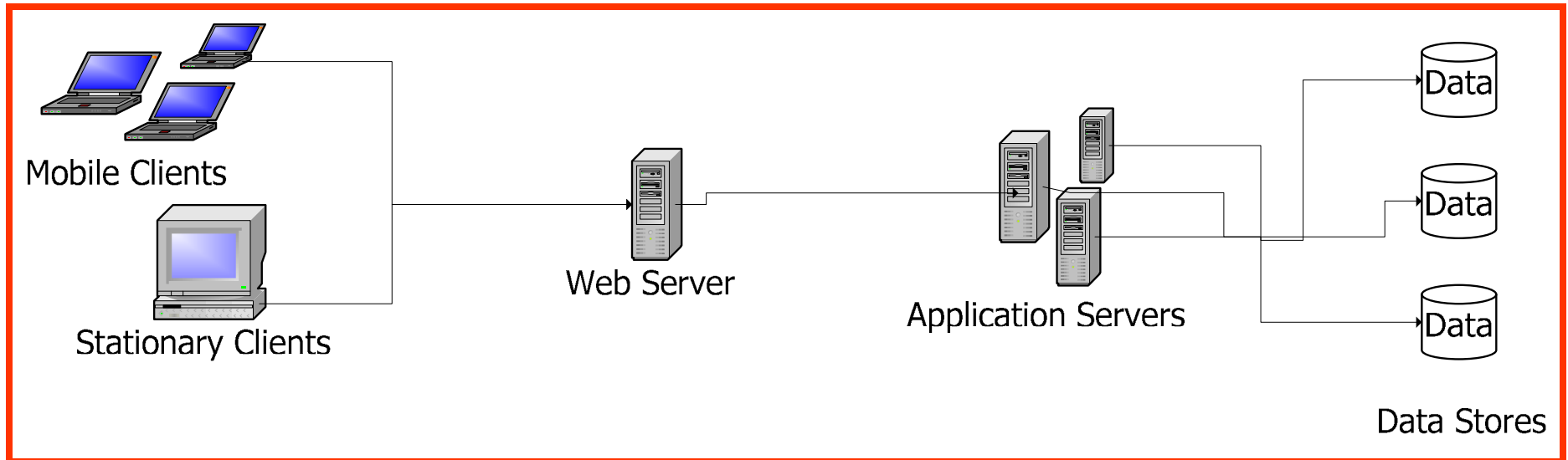


## Distribution, Concurrency, State:

- Remote Facade
- Data Transfer Object
- Client/Server/Database Session State
- Optimistic/Pessimistic Offline Lock
- Coarse Grained/Implicit Lock

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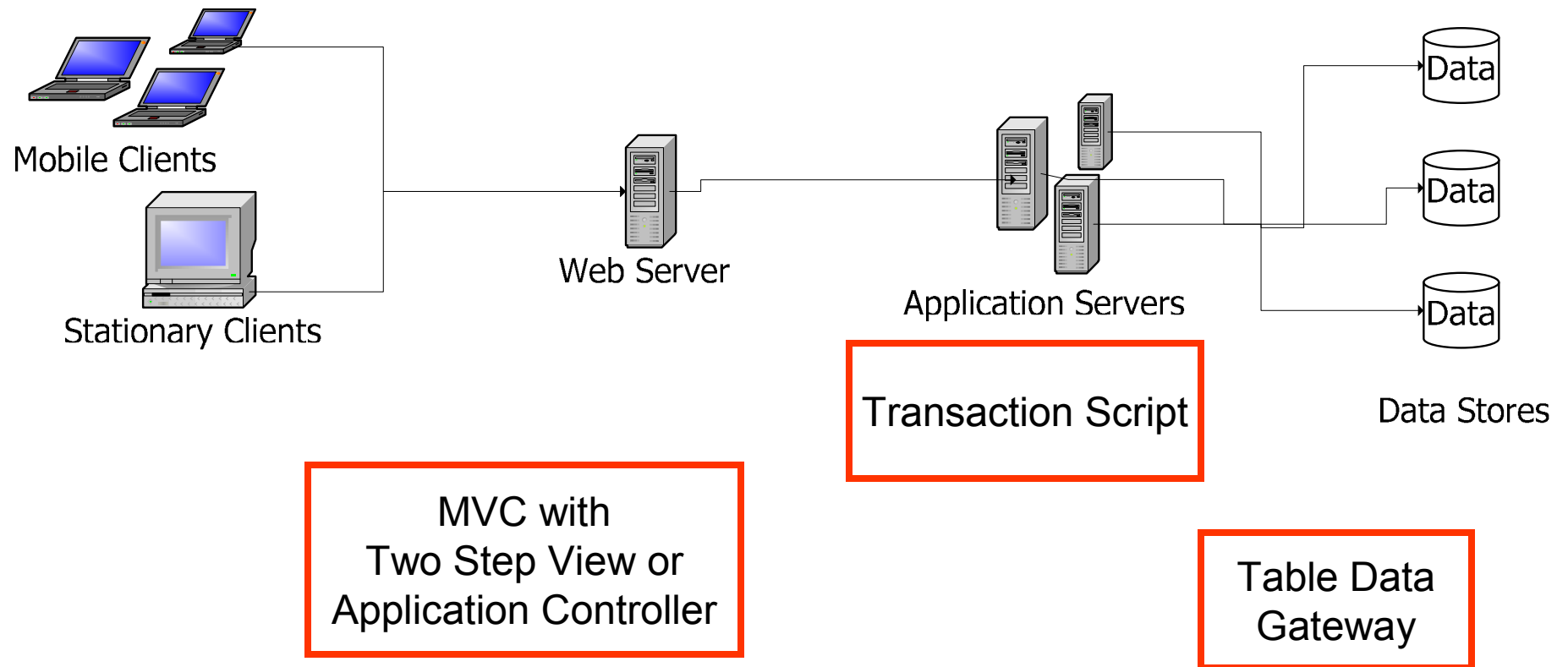
adapted from [F03]



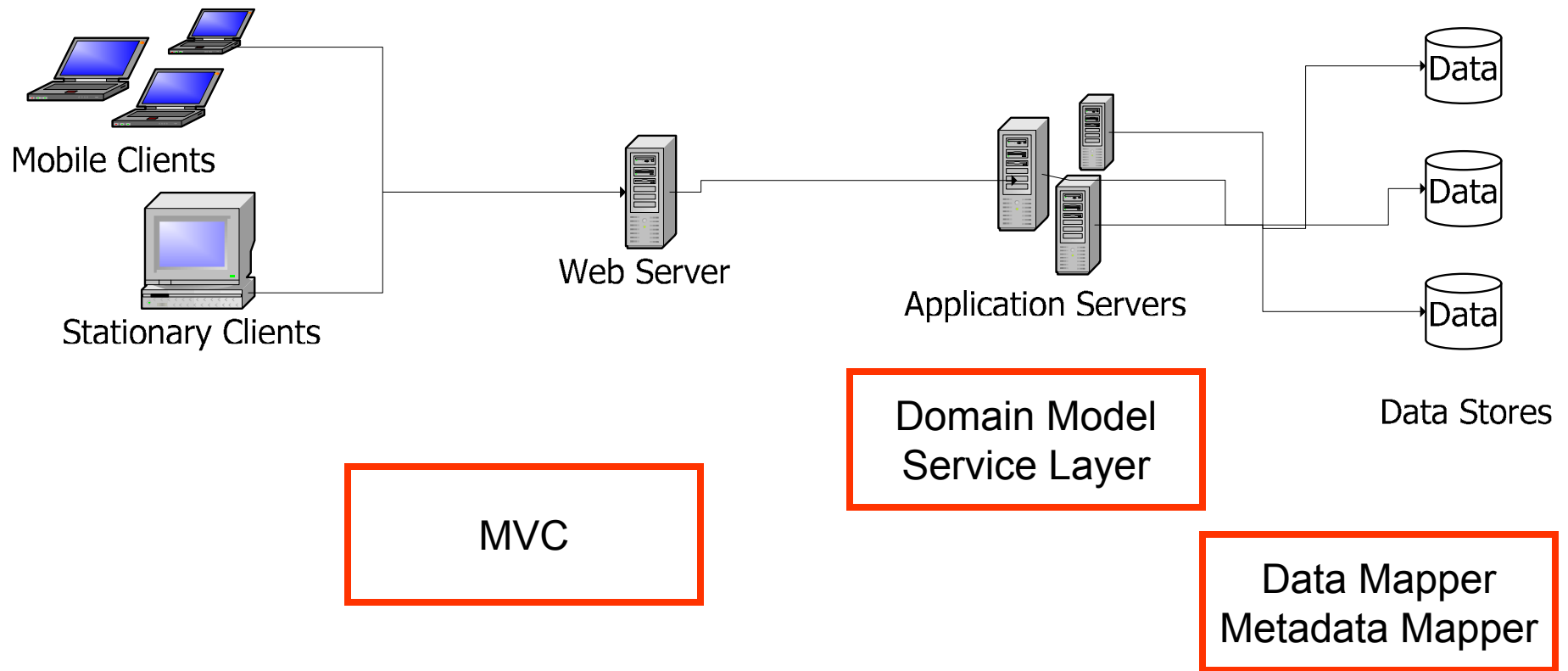
Base:

- Gateway
- Mapper
- Layer Supertype
- Separated Interface
- Registry
- Value Object
- Money
- Special Case
- Plugin
- Service Stub
- Record Set

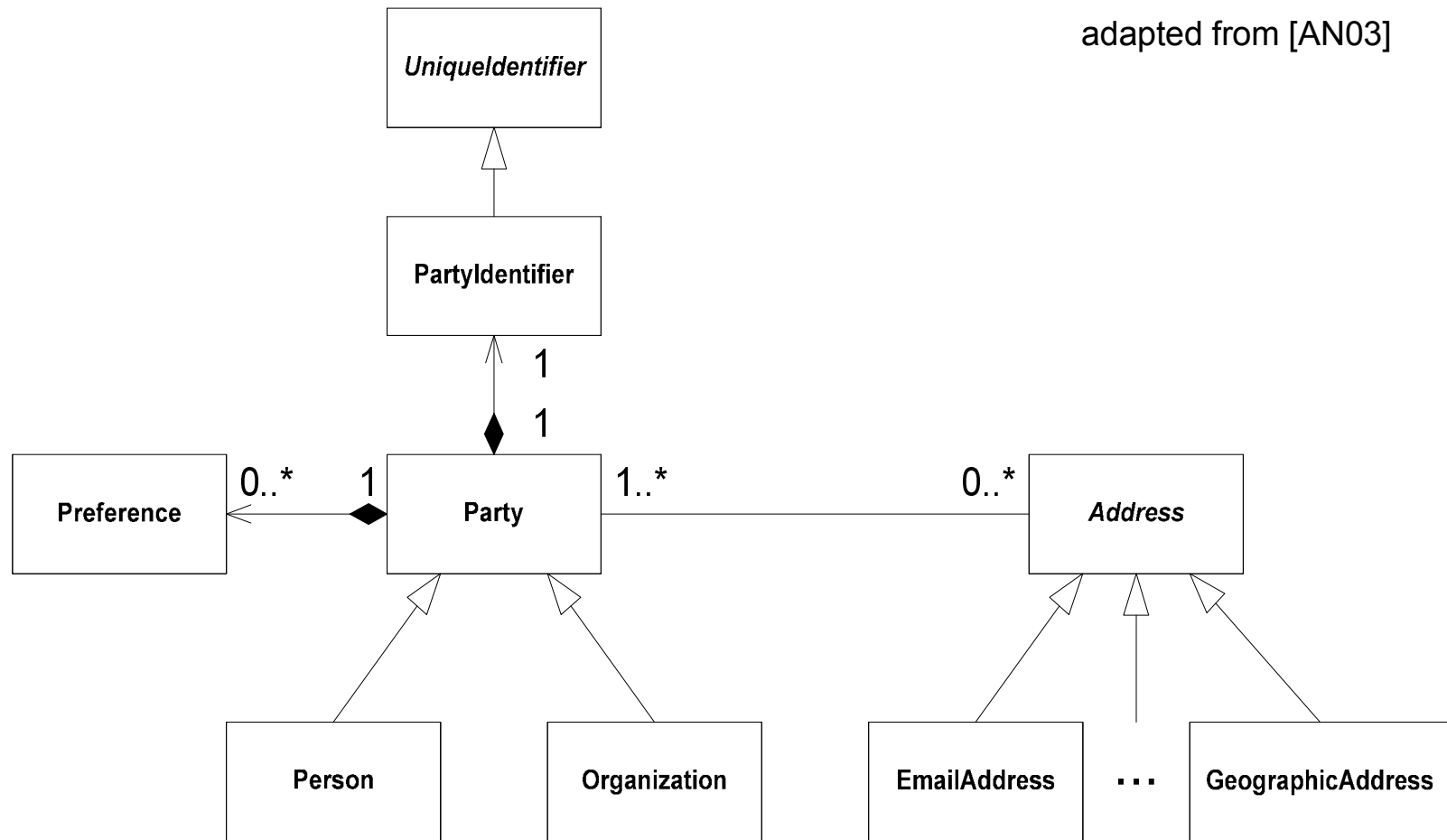
# Configuration Example: Simple Application



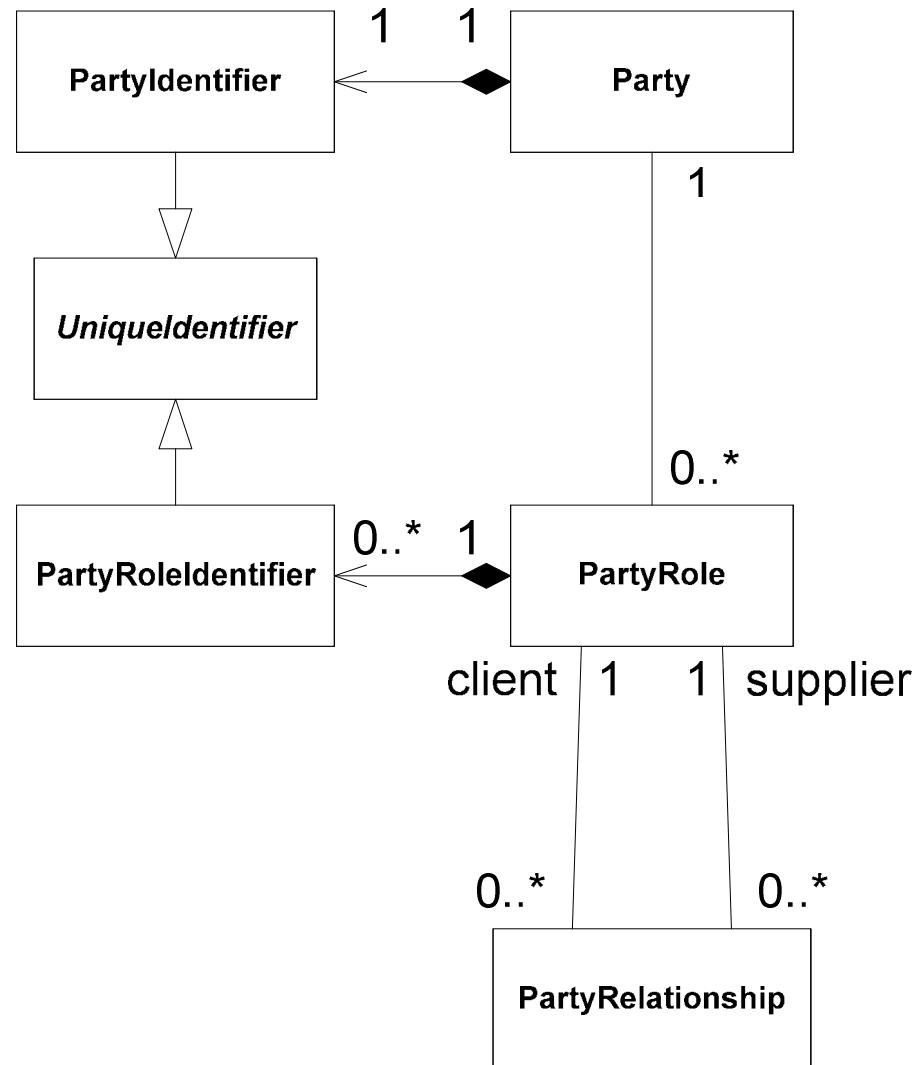
# Configuration Example: Complex Application



# Archetype Example: Person (partial)

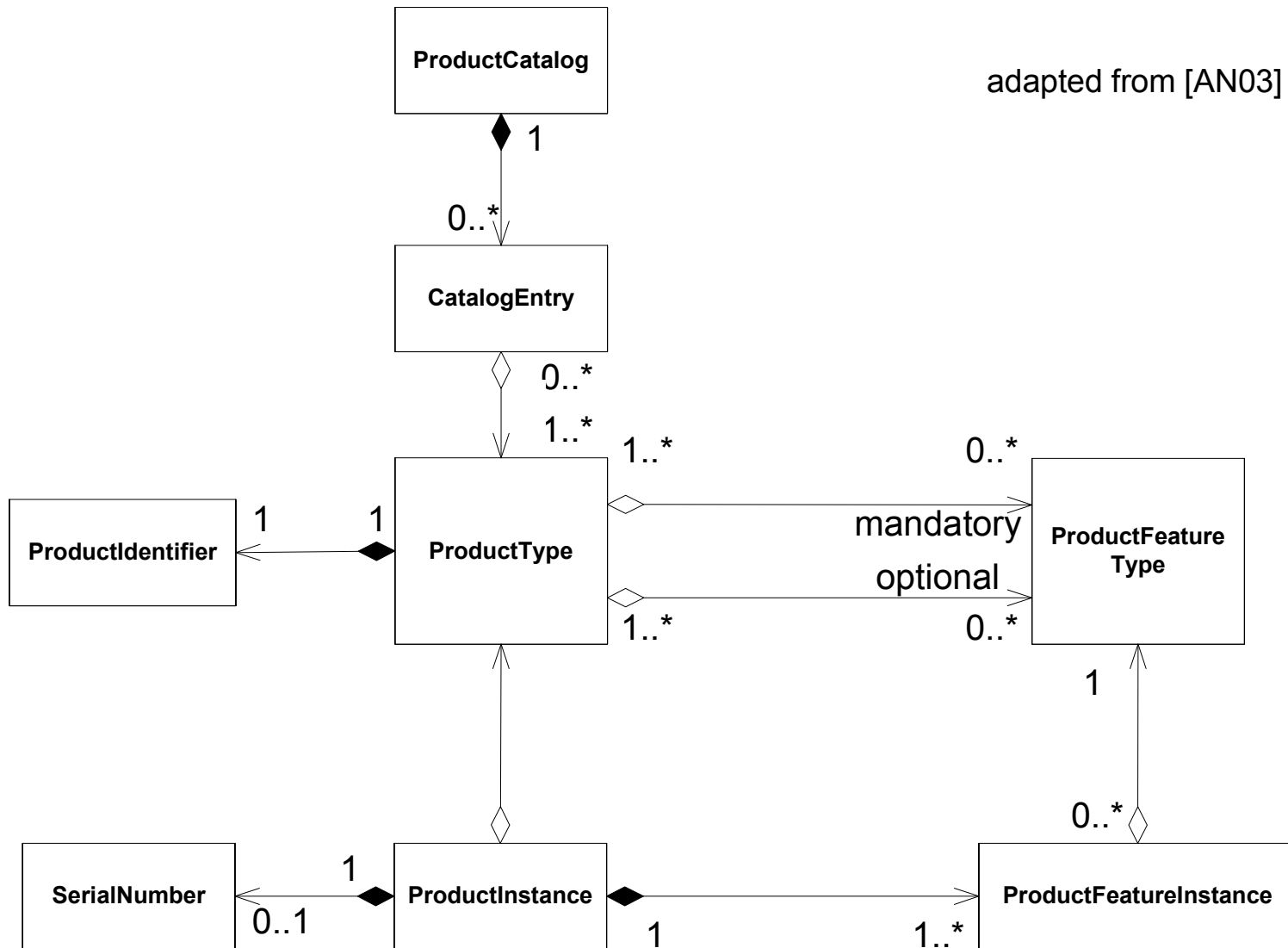


# Archetype Example: PartyRole (partial)



adapted from [AN03]

# Archetype Example: ProductCatalog (partial)



## Example: Party – Role – Relationship – Policy Model\*

**\* courtesy of Matthew Arrott; adapted from [AN03]**

