

Data Source Architecture Pattern

TEAM INFDEV

Hogeschool Rotterdam
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Data Source
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Pattern

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Lesson 2 extra
overview
overview

Design
Pattern

- Impedance Mismatch
- Object Relational mapping
- Table Data Gateway
- Row Data Gateway
- Active Record
- Data Mapper

- Software systems may require persistent data (i.e. data that persists between program executions).
- In general, distributing low-level data access logic throughout a program is not a good idea (design).

Data Access Layer

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- A better design for your application is one that includes a data access layer which encapsulates the details of the underlying persistence.
- This layer must abstracts the low-level details of persistent storage.
- It also provides an interface that is usually a better match for the style of programming used in the domain logic. For example, the data access layer might provide an OO interface onto relational data.

Impedance Mismatch

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- There are a set of difficulties that are common when implementing a data access layer:
 - Object-oriented concepts such as encapsulation, access modifiers and inheritance cannot sometimes directly be mapped or supported by RDBMS

Impedance Mismatch

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 - Data type differences between programming languages and databases. For instance a string and the different type of collations in RDBMS.
 - Structural and integrity differences. Data in one table are structured as tuples and organized the same way as the header. Using constraints in RDBMS helps to avoid data inconsistency. In your application it's not an easy task to implement such a constraint. You can use exceptions for instance to imitate the behaviour of some constraints but not all of them.

Object Relational Mapping (ORM)

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- ORM is a programming technique for converting data between incompatible type systems in object-oriented programming languages.
- Hides details of SQL queries from OO logic.

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