# FMSync

## An Open Source Solution for Synchronising Distributed Archaeological Databases in a Centralised Open Access System

Felix Kußmaul[1]

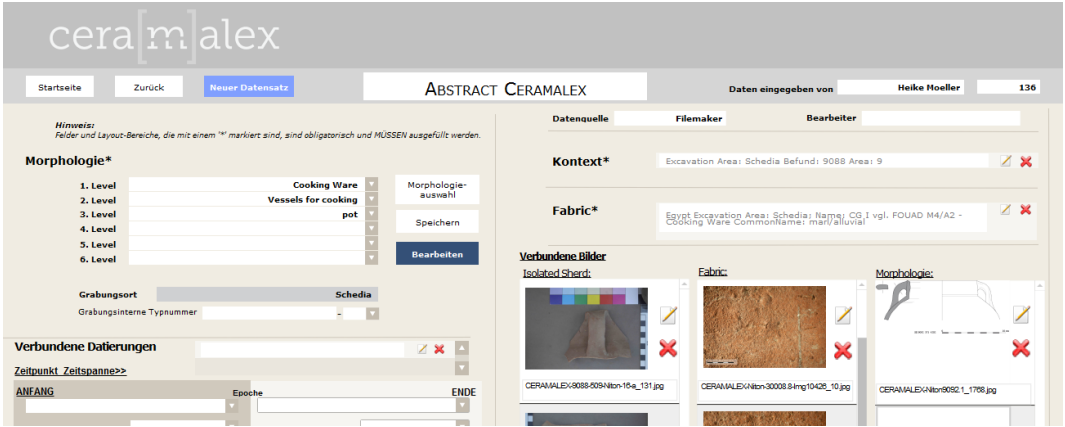
CAA 2018, Tübingen

21 March 2018

[1]Archäologisches Institut, Universität zu Köln

# Motivation

**FileMaker Pro** is widespread across archaeological projects, e. g.:



# Before FMSync: Sharing Data

FileMaker *A*

FileMaker *B*

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FileMaker *A*

FileMaker *B*

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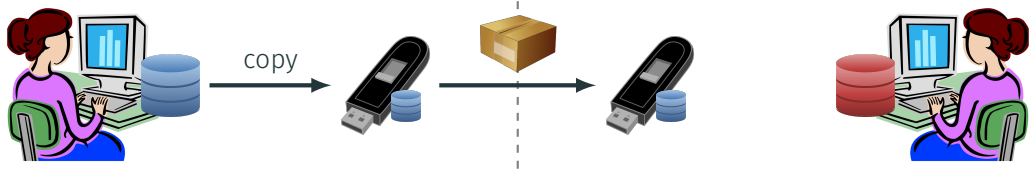

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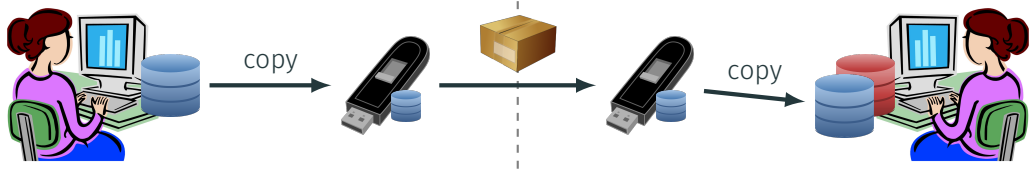

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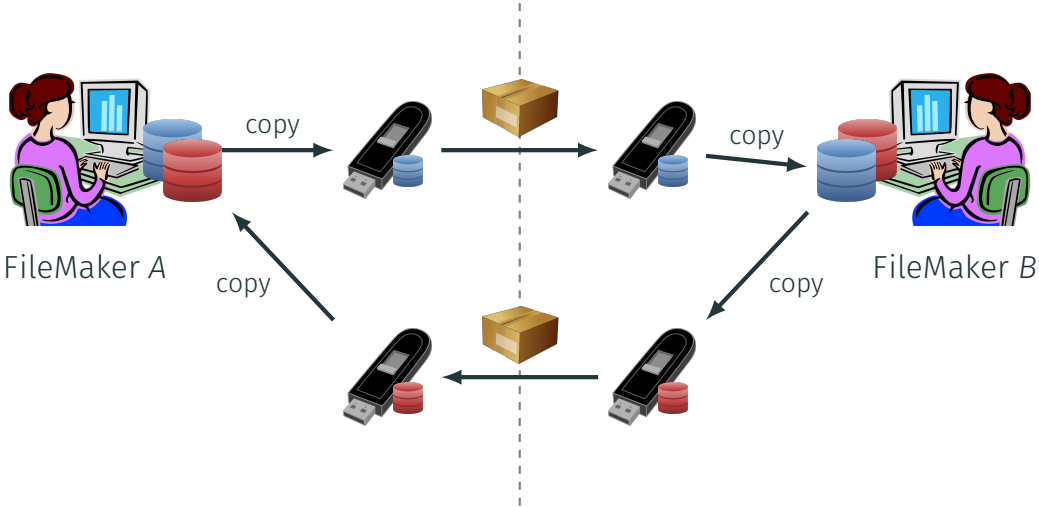
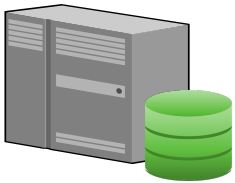


# Before FMSync: Publishing Data

FileMaker



MySQL / Oracle / ...

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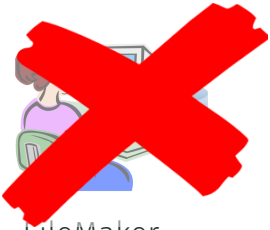
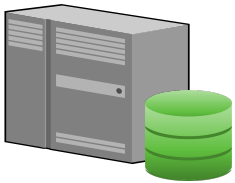


FileMaker



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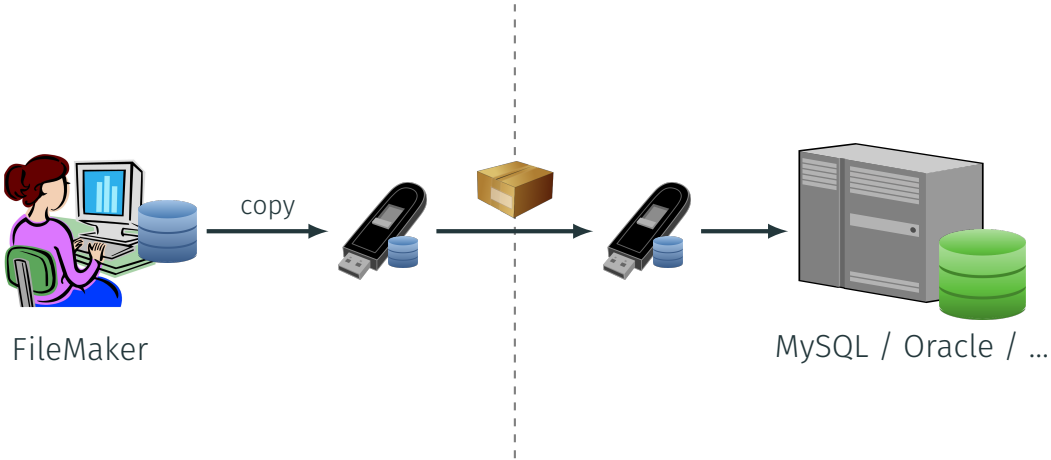


# Before FMSync: Publishing Data

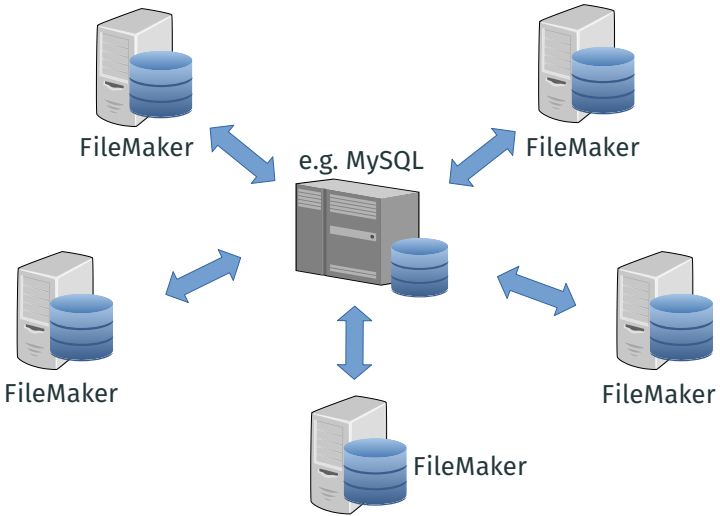
FileMaker

copy

...

# Approach

# FMSync: Topology



# Wait a second!

Yo, Felix! 'Tis nuthin nu.

> ***SymmetricDS*** *supports [...] Oracle, MySQL, MariaDB, PostgreSQL, MS SQL Server (including Azure), IBM DB2 (UDB, iSeries, and zSeries), H2, HSQLDB, Derby, Firebird, Interbase, Informix, Greenplum, SQLite, Sybase ASE, Sybase ASA (SQL Anywhere), Amazon Redshift, MongoDB, and VoltDB databases.*
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> `https://www.symmetricds.org/`

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`https://www.symmetricds.org/`

FileMaker
An Apple Subsidiary

**Purchase Quote**

| | |
|---|---|
| Quote Date | **2018-03-09** |
| Quote Number | |
| Expiration | **2018-04-08** |

| | Product | QTY | Unit Price | Extended Price |
|---|---|---|---|---|
| FM160277LL | FileMaker Server 16<br>FLT Perpetual Volume License + 1 Year Maintenance (10 users) | 1 | US$4,284.00 | US$4,284.00 |
| | | | Subtotal: | US$4,284.00 |
| | | | Shipping: | US$0.00 |
| | | | Estimated Tax: | US$0.00 |
| | | | Total: | US$4,284.00 |

- Proprietary, badly written software
- Still totally not worth the price

# Our Solution

... is better than the existing ones, since

- it is open source (GPL 3 license)
- it is free
- it allows open access scenarios
- it is Java-based, thus platform-independent and flexible
- it is user-friendly
- it allows to already keep data in sync while collecting

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# Why underestimation is bad

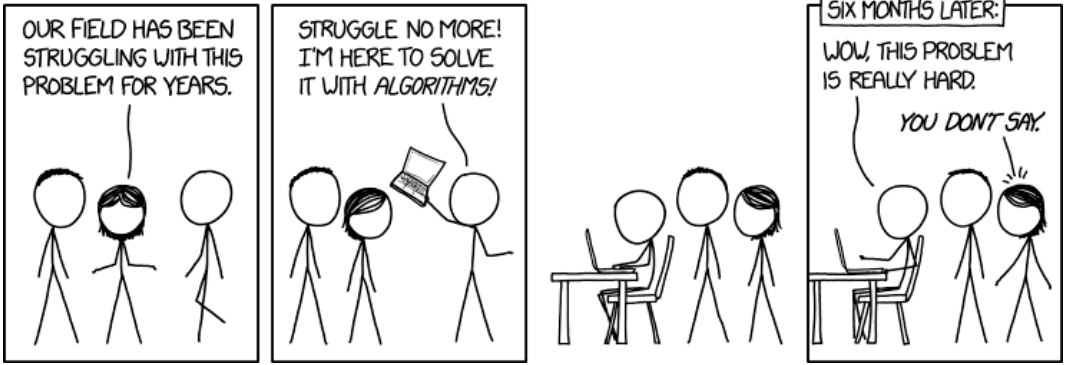



Figure 1: I can relate to this. [xkcd.com/1831]

# Implementation

# screenshot

Inhalt...

# sync!!

bisschen zur sync

# Foreign Key Difficulty

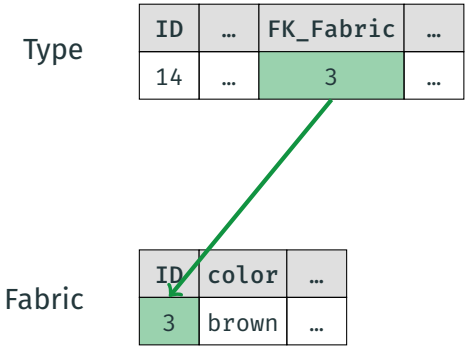
Type

| ID | … | FK_Fabric | … |
|---|---|---|---|
| 14 | … | 3 | … |

Fabric

| ID | color | … |
|---|---|---|
| 3 | brown | … |

# Foreign Key Difficulty



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| ID | … | FK_Fabric | … |
|---|---|---|---|
| 14 | … | 3 | … |

| ID | … | FK_Fabric | … |
|---|---|---|---|
| 105 | … | x | … |

Fabric

| ID | color | … |
|---|---|---|
| 3 | brown | … |

| ID | color | … |
|---|---|---|
| 81 | red | … |

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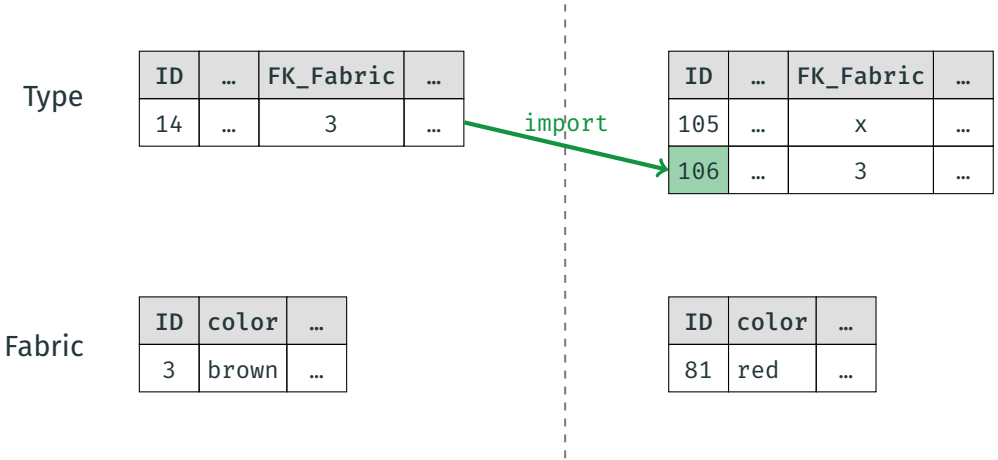

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import

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| ID | … | FK_Fabric | … |
|---|---|---|---|
| 105 | … | x | … |
| 106 | … | 3 | … |

| ID | color | … |
|---|---|---|
| 81 | red | … |
| 82 | brown | … |

# Foreign Key Difficulty: Solution

Type

| ID | … | FKF | FKP |
|---|---|---|---|
| 5 | … | 29 | 8 |

Fabric

| ID | … | FKC |
|---|---|---|
| 29 | … | 3 |

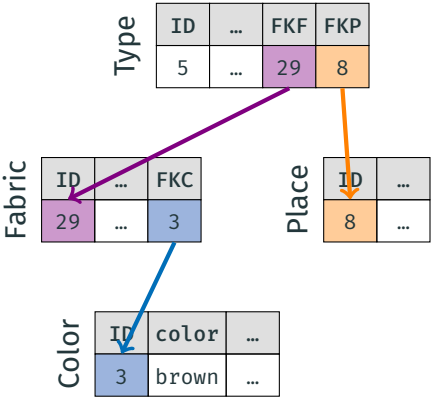
Place

| ID | … |
|---|---|
| 8 | … |

Color

| ID | color | … |
|---|---|---|
| 3 | brown | … |

# Foreign Key Difficulty: Solution



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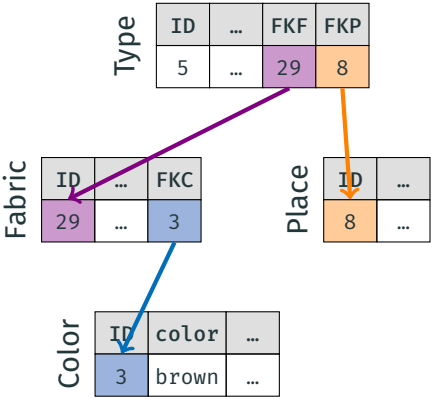

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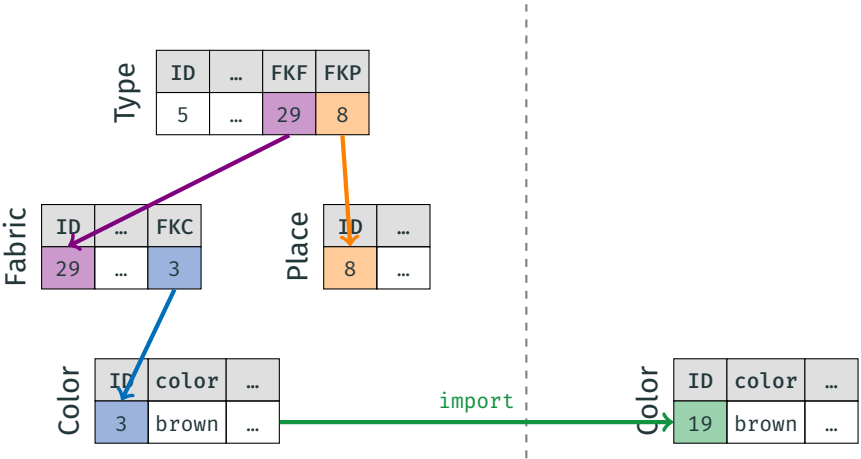

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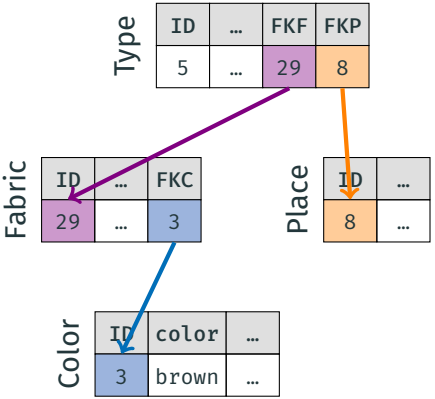


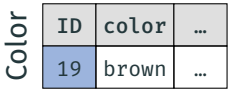

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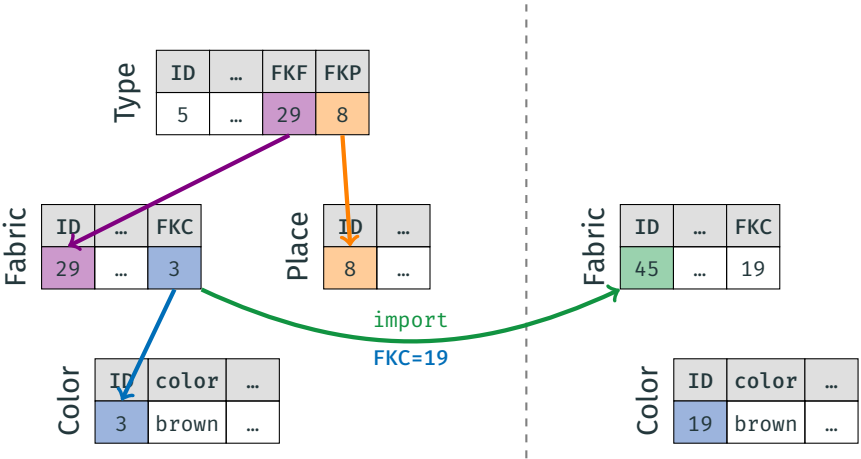

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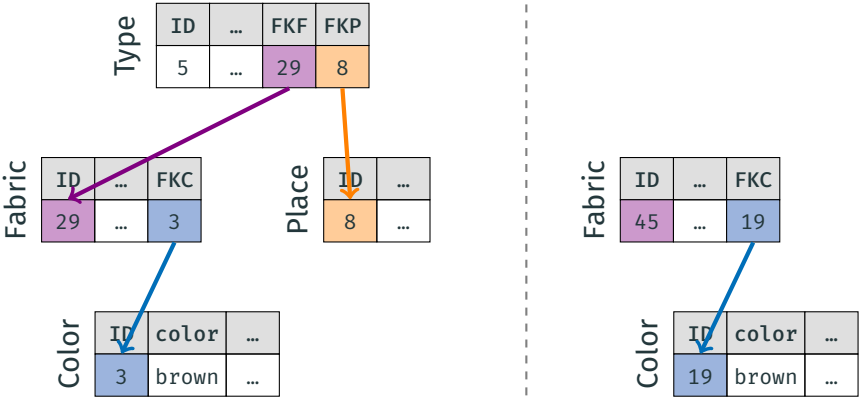

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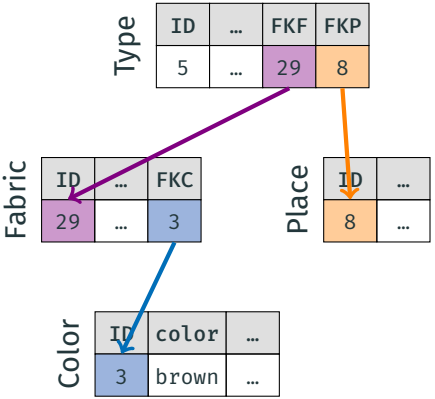


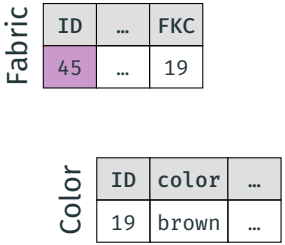

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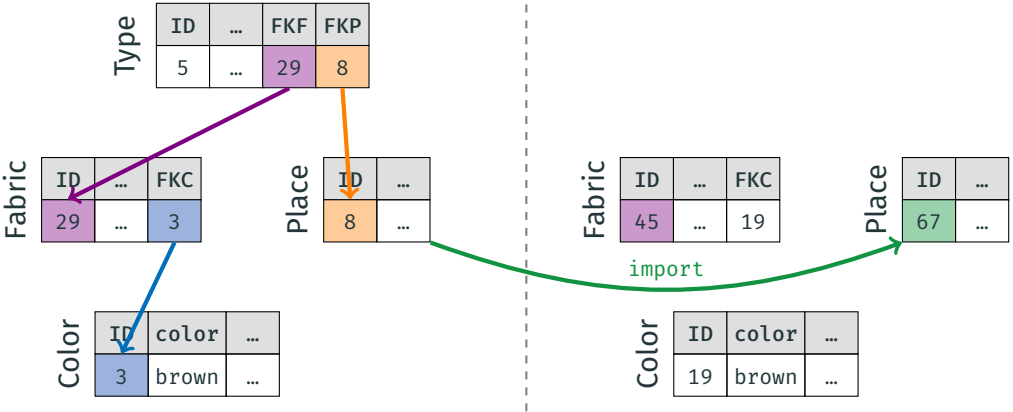

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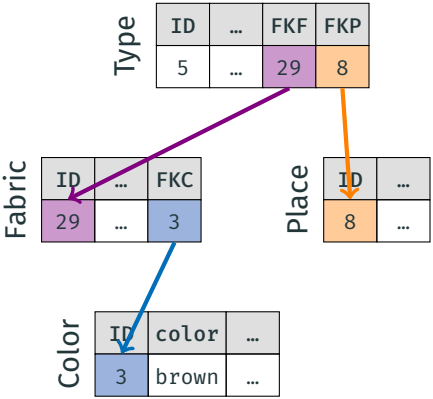


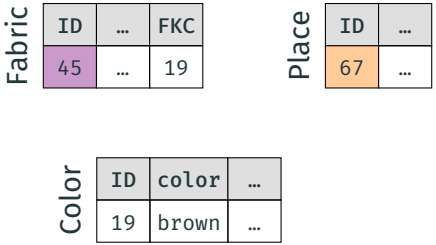

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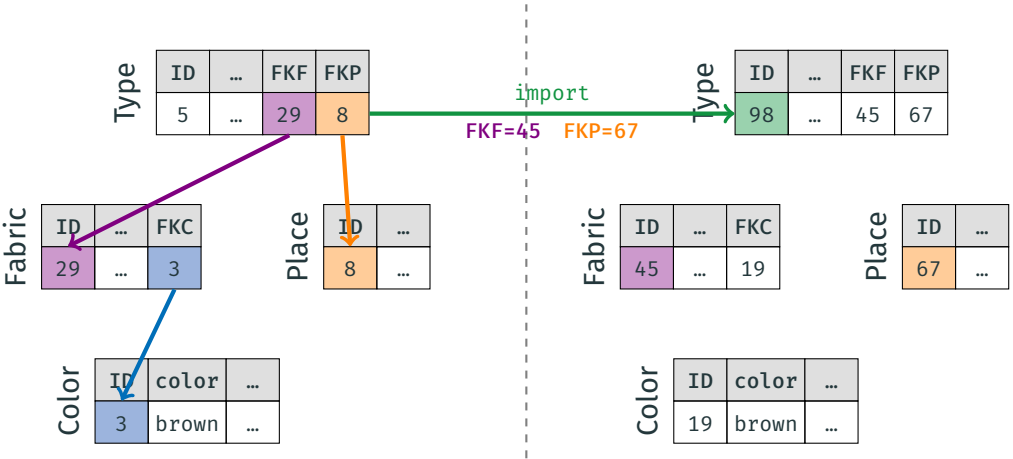

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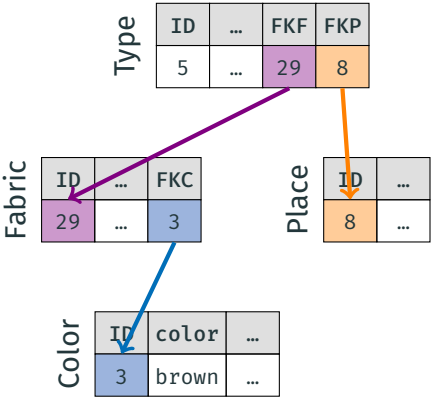


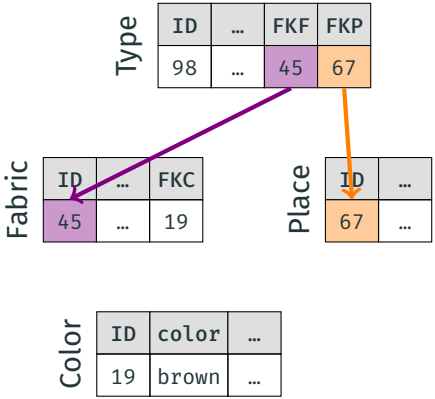

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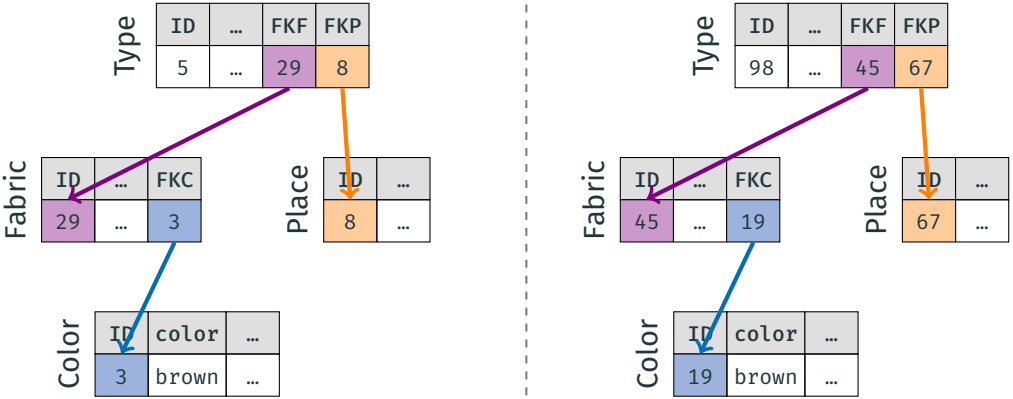

Thank you very much for your attention!

https://github.com/horle/fmsync Questions?

# FMSync

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