

# FMSync

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

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CAA 2018, Tübingen

21 March 2018

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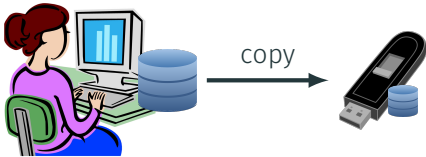
# Motivation

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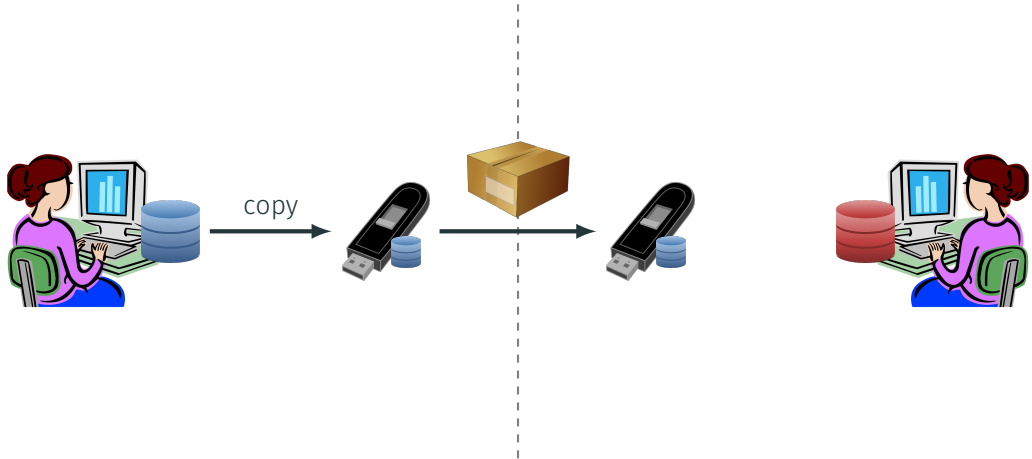
# Before FMSync: Sharing Data



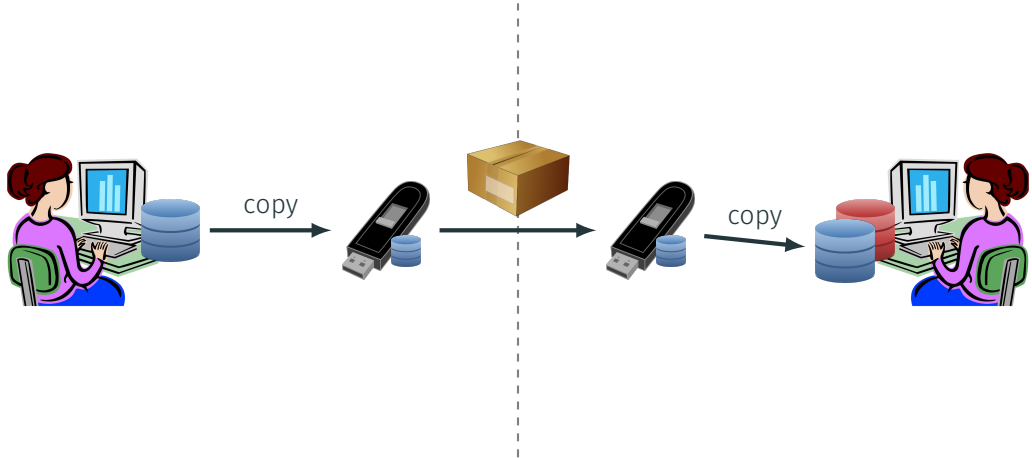
# Before FMSync: Sharing Data



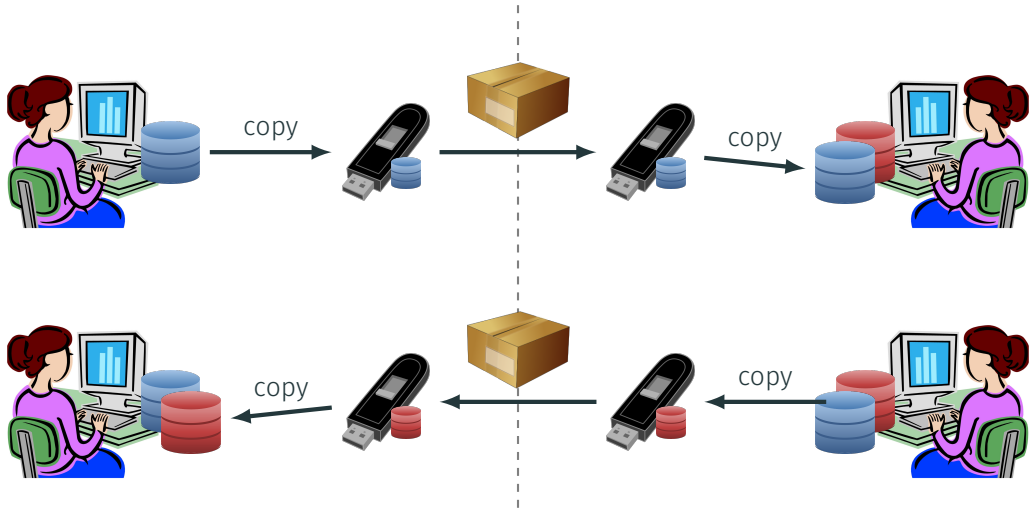
## Before FMSync: Sharing Data



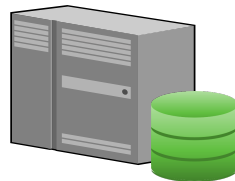
## Before FMSync: Sharing Data



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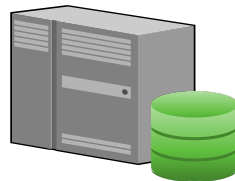


# Before FMSync: Publishing Data

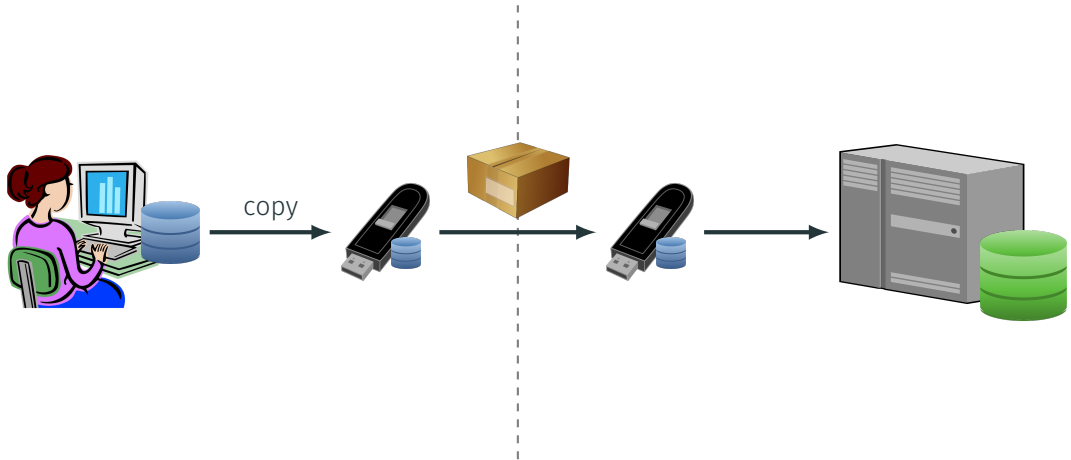




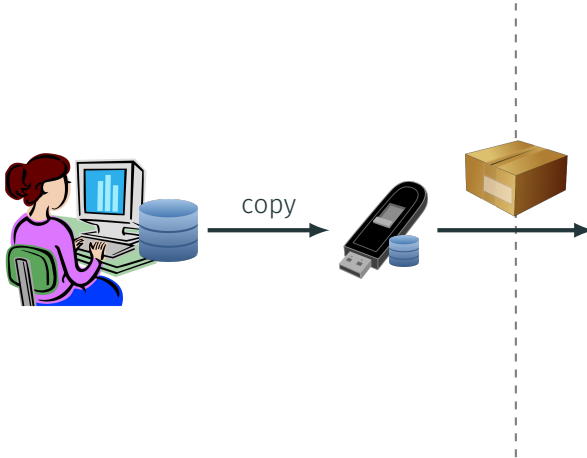
## Before FMSync: Publishing Data



# Before FMSync: Publishing Data



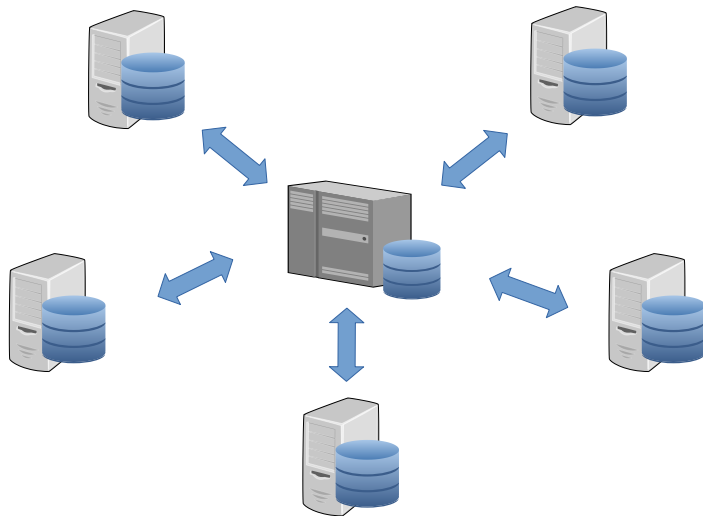
# Before FMSync: Publishing Data



## Approach

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# FMSync: Topology



# Wait a second!

Yo, Felix! 'Tis nuthin nu.

<https://www.fmpromigrator.com/order/index.html>

*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/>



## Purchase Quote

				Quote Date	2018-03-09
				Quote Number	
				Expiration	2018-04-08
	Product	QTY	Unit Price	Extended Price	
FM160277LL	FileMaker Server 16 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



open source (license!), free, platform independent (java)

# Why underestimation is bad

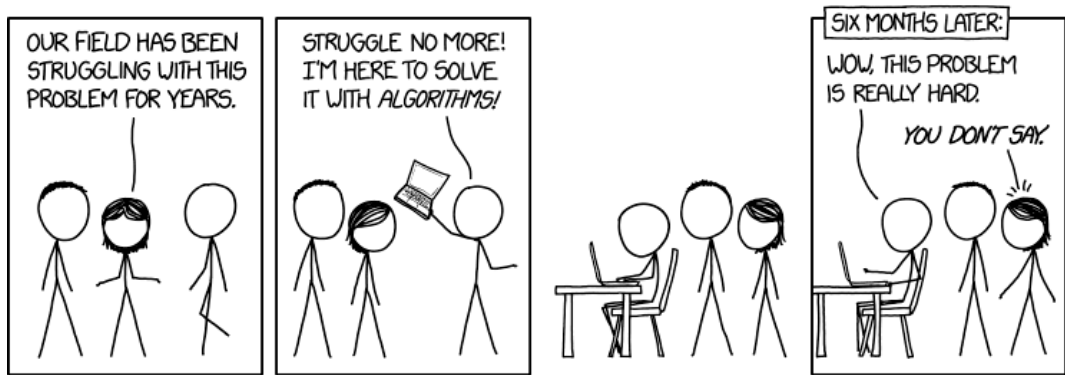


Figure 1: I can relate to this. [xkcd.com/1831]

# Implementation

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Inhalt...

bisschen zur zentralisierung

# Foreign Key Difficulty

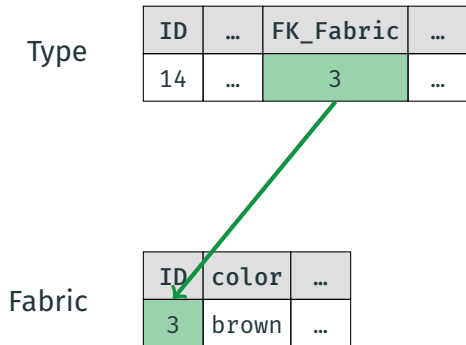
Type

ID	...	FK_Fabric	...
14	...	3	...

Fabric

ID	color	...
3	brown	...

# Foreign Key Difficulty



# Foreign Key Difficulty

Type

ID	...	FK_Fabric	...
14	...	3	...

Fabric

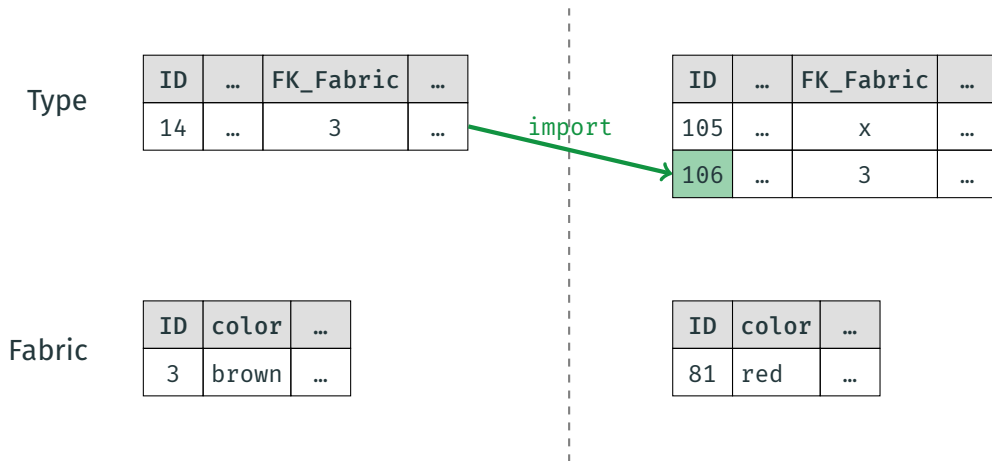
ID	color	...
3	brown	...

ID	...	FK_Fabric	...
105	...	x	...

ID	color	...
81	red	...



# Foreign Key Difficulty



# Foreign Key Difficulty

Type

ID	...	FK_Fabric	...
14	...	3	...

ID	...	FK_Fabric	...
105	...	x	...
106	...	3	...

Fabric

ID	color	...
3	brown	...

import

ID	color	...
81	red	...
82	brown	...

# Foreign Key Difficulty

Type

ID	...	FK_Fabric	...
14	...	3	...

Fabric

ID	color	...
3	brown	...

ID	...	FK_Fabric	...
105	...	x	...
106	...	3	...

ID	color	...
81	red	...
82	brown	...

# Foreign Key Difficulty

Type

ID	...	FK_Fabric	...
14	...	3	...

Fabric

ID	color	...
3	brown	...

ID	...	FK_Fabric	...
105	...	x	...
106	...	3	...

ID	color	...
81	red	...
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# Foreign Key Difficulty

Type

ID	...	FK_Fabric	...
14	...	3	...

Fabric

ID	color	...
3	brown	...

...

ID	...	FK_Fabric	...
105	...	x	...
106	...	3	...

ID	color	...
81	red	...
82	brown	...

# Foreign Key Difficulty: Solution

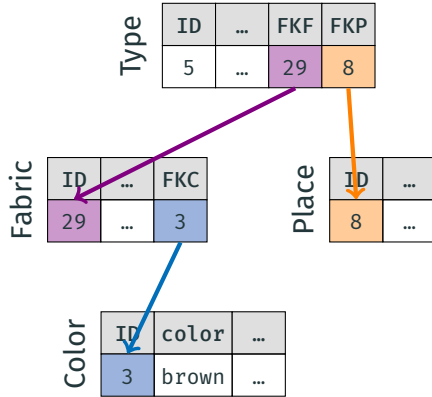
Type	ID	..	FKF	FKP
	5	..	29	8

Fabric	ID	..	FKC
	29	..	3

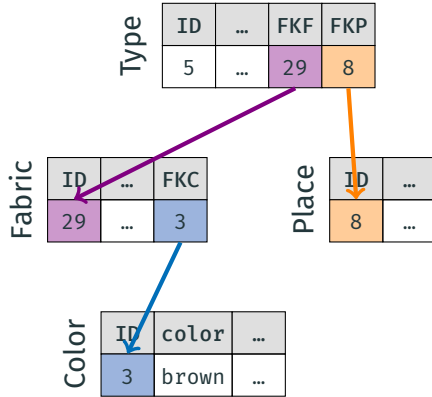
Place	ID	..
	8	..

Color	ID	color	..
	3	brown	..

# Foreign Key Difficulty: Solution

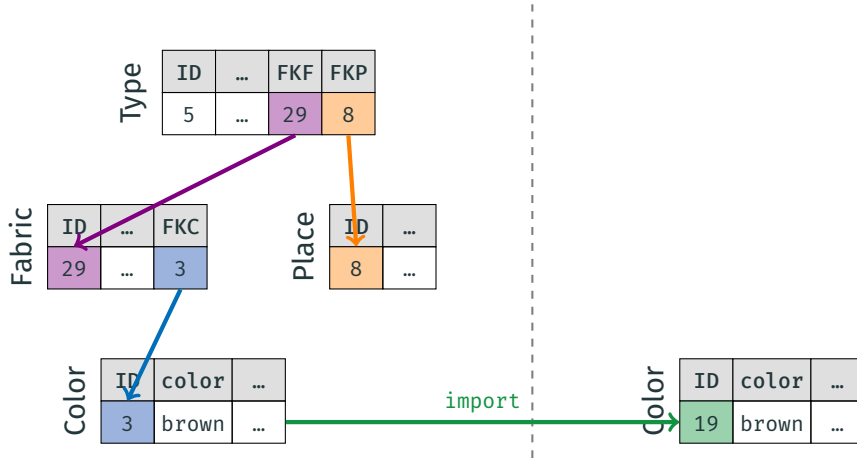


# Foreign Key Difficulty: Solution

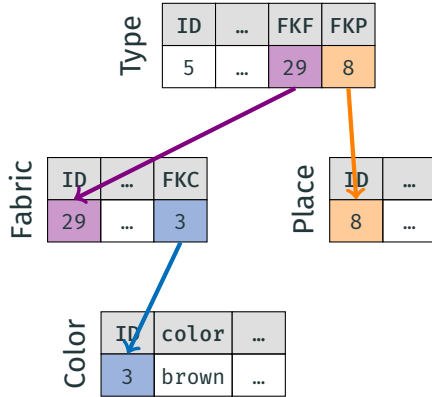




# Foreign Key Difficulty: Solution

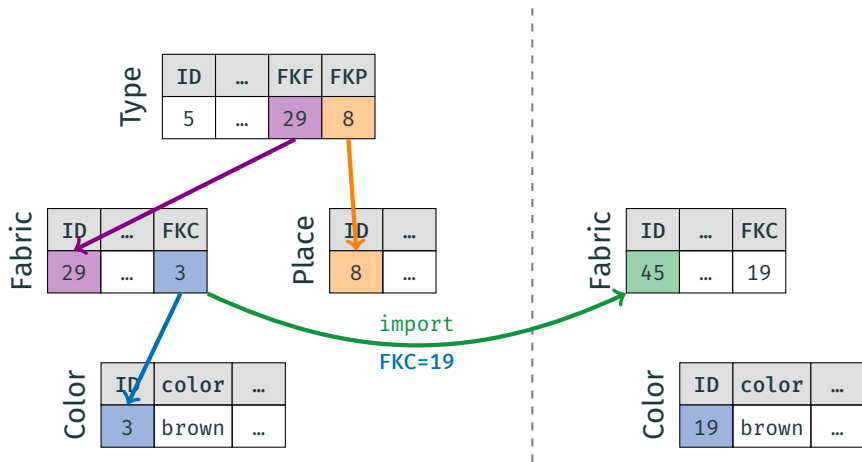


# Foreign Key Difficulty: Solution

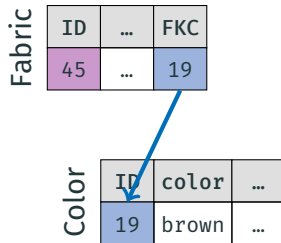
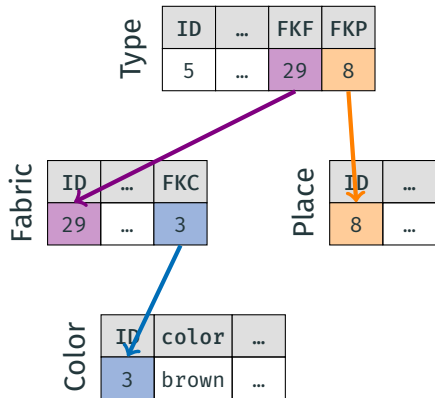


ID	color	...
19	brown	...

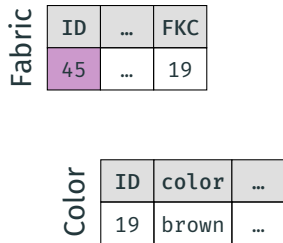
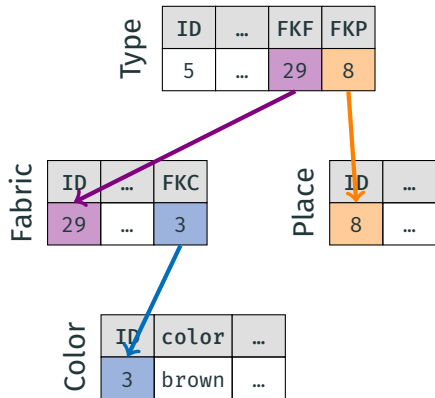
# Foreign Key Difficulty: Solution



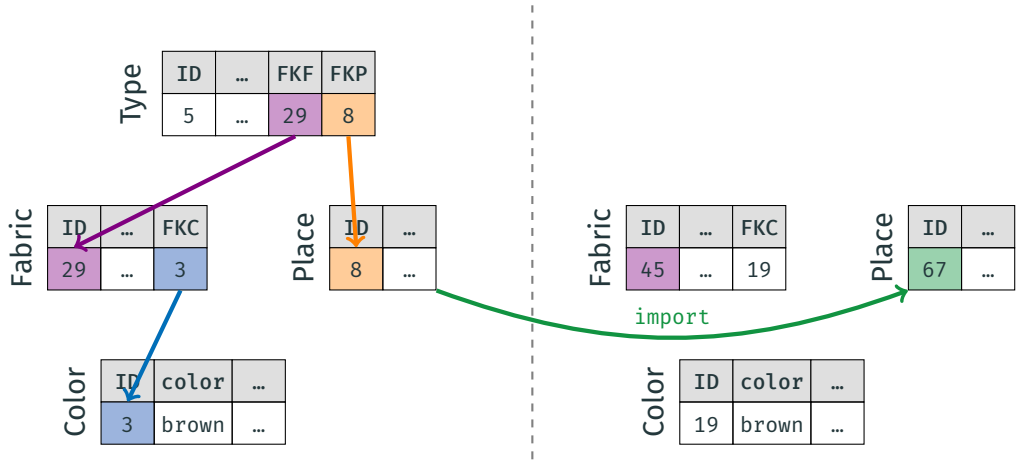
# Foreign Key Difficulty: Solution



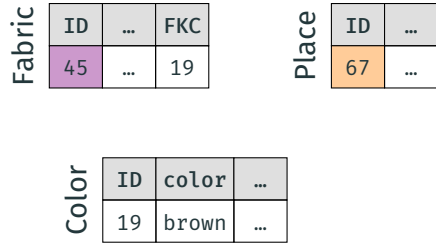
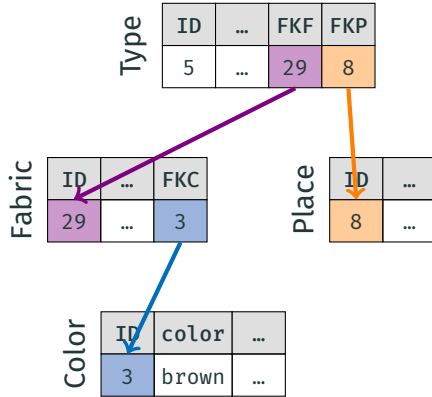
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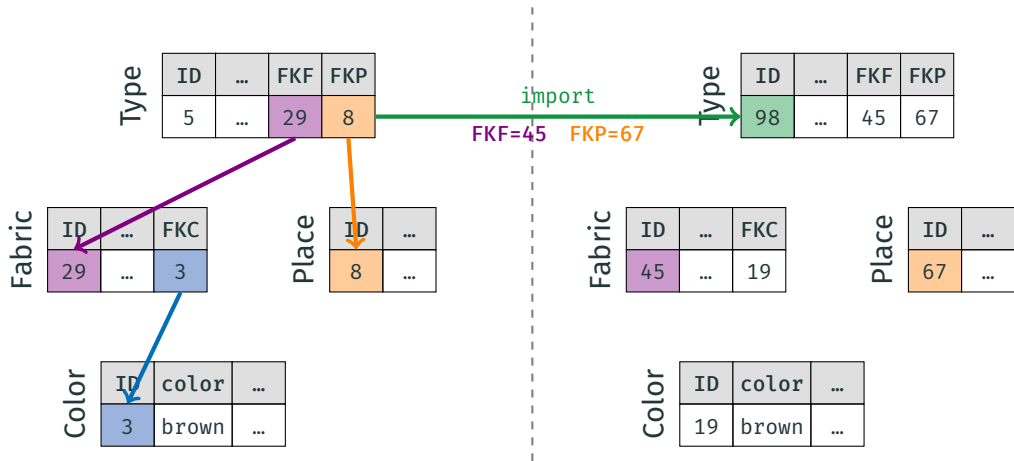
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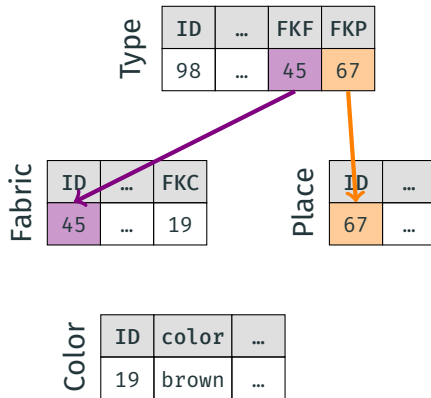
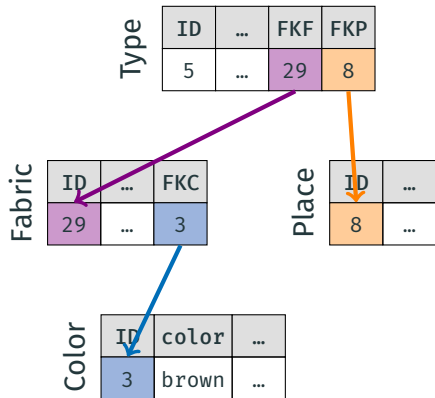


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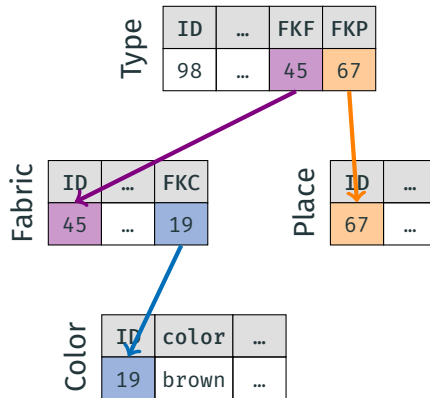
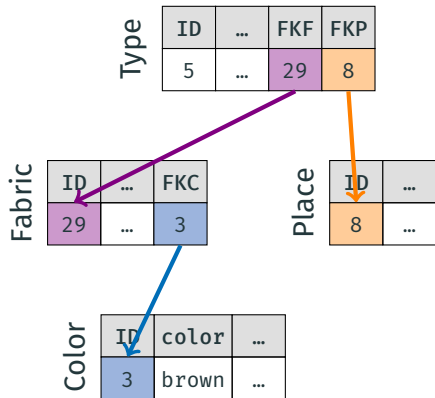




# Foreign Key Difficulty: Solution



# Foreign Key Difficulty: Solution



Thank you very much for your attention!

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

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