Shaping tables

DATA MODELING IN POWER BI

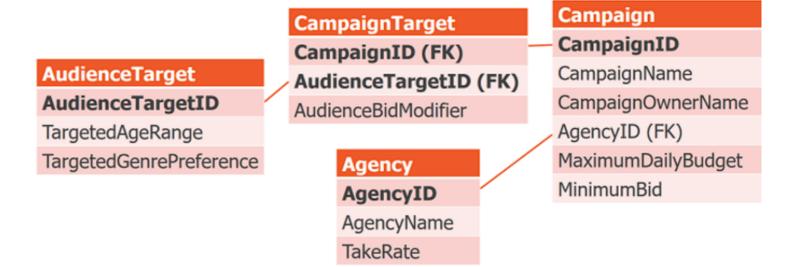


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Database normalization

- A set of logical rules and processes to follow for data modeling
- Organizing a database
- Goals of normalization
 - Remove redundant data
 - Achieve a design which is a good representation of the real world
- Tables are connected through relationships in Power BI

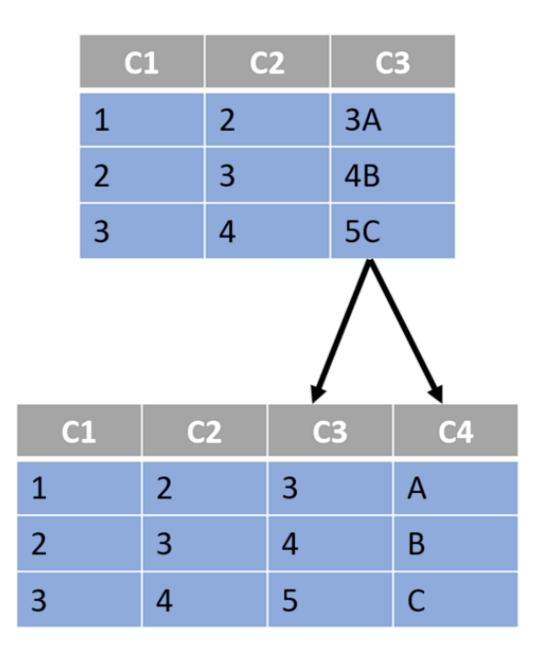


Data shaping in Power Query

- Power Query includes several data shaping operations to get closer to a normalized data model.
- Key techniques:
 - 1. Column splitting
 - 2. Column extraction
 - 3. Query merging
 - 4. Query appending
- There are additional techniques as well!

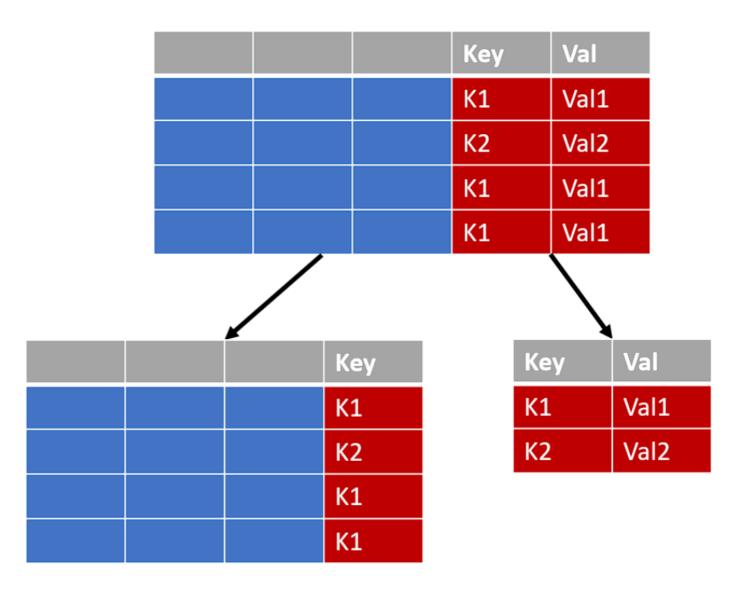
1. Column splitting

- Break out one column into multiple columns
- Split criteria
 - Delimiter
 - Number of characters
 - Position in string
 - Lower vs. upper casing
 - Digit vs. non-digit



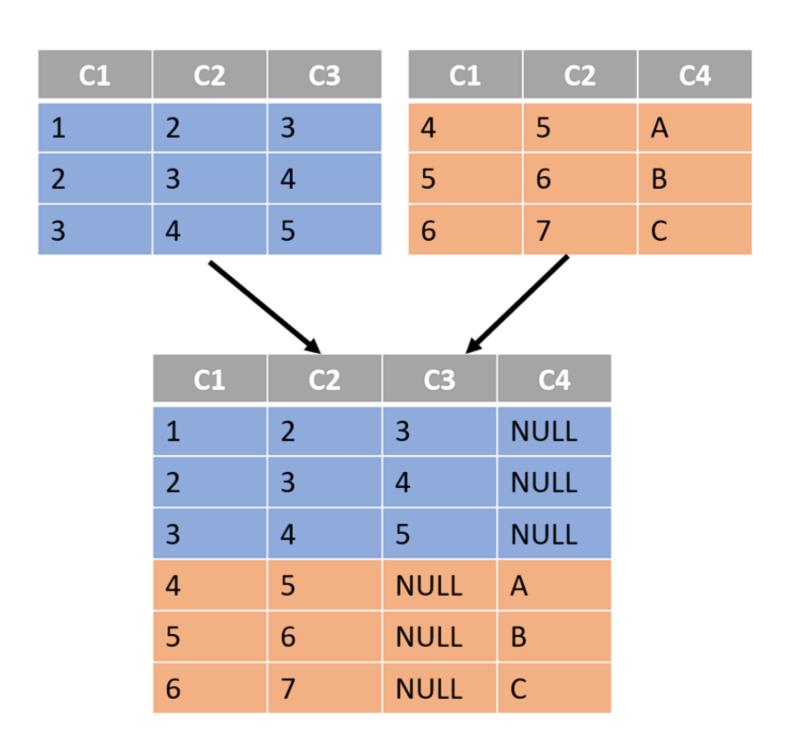
2. Column extraction

- Take columns from one table and break them out into another table
- Keep a key on the original table to know which values fit together
- Result: keep distinct rows, shrinking total data model size and reducing redundancy



3. Query appending

- Combine contents of two or more tables into a single table
- Match rows based on column names, adding NULL for missing columns
- Equivalent to a UNION ALL statement in SQL



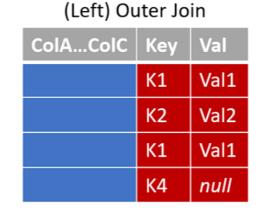
4. Query merging

- Join together two existing tables based on values from one or more columns¹
- Types of joins:
 - Inner join
 - Left outer join
 - Right outer join
 - Full outer join

ColA	ColB	ColC	Key
			K1
			K2
			K1
			K4

Key	Val
K1	Val1
K2	Val2
К3	Val3

Inner Join				
ColAColC	Key	Val		
	K1	Val1		
	K2	Val2		
	K1	Val1		



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ColAColC	Key	Val		
	K1	Val1		
	K2	Val2		
	K1	Val1		
	K4	null		
null	К3	Val3		

Full Outer Join

¹ This won't be covered in the exercises; check other DataCamp courses on joining tables for more detail



Let's practice!

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Merging and appending queries

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Let's practice!

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