

A modern conference room with large windows and a long table. The room is empty, with several office chairs arranged around the table. The view outside the windows shows a cityscape. The image has a warm, orange-toned overlay.

Basic Database Terminology

A modern conference room with large windows and a long table. The room is empty, with several black office chairs arranged around a long, dark wooden table. The windows are floor-to-ceiling, providing a view of a city skyline. The ceiling has a grid of recessed lights. The overall atmosphere is professional and clean.

Relational Schemas: Primary Key

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Sales				
purchase_number	date_of_purchase	customer_id	item_code	
1	9/3/2016	1	A_1	
2	12/2/2016	2	C_1	
3	4/15/2017	3	D_1	
4	5/24/2017	1	B_2	
5	5/25/2017	4	B_2	
6	6/6/2017	2	B_1	
7	6/10/2017	4	A_2	
8	6/13/2017	3	C_1	
9	7/20/2017	1	A_1	
10	8/11/2017	2	B_1	

Relational Schemas: Primary Key

Customers				
customer_id	first_name	last_name	email_address	number_of_complaints
1	John	McKinley	john.mackinley@365careers.com	0
2	Elizabeth	McFarlane	e.mcfarlane@365careers.com	2
3	Kevin	Lawrence	kevin.lawrence@365careers.com	1
4	Catherine	Winnfield	c.winnfield@365careers.com	0

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Items						
item_code	item	unit_price_usd	company_id	company	headquarters_phone_number	
A_1	Lamp	20	1	Company A	+1 (202) 555-0196	
A_2	Desk	250	1	Company A	+1 (202) 555-0196	
B_1	Lamp	30	2	Company B	+1 (202) 555-0152	
B_2	Desk	350	2	Company B	+1 (202) 555-0152	
C_1	Chair	150	3	Company C	+1 (229) 853-9913	
D_1	Loudspeakers	400	4	Company D	+1 (618) 369-7392	

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Relational Schemas: Primary Key

- these tables have a tabular shape

Relational Schemas: Primary Key

- these tables have a tabular form
- a relational schema can be applied to represent them

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sales per customer of our company

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the dates of a few purchases may coincide

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the ID of a customer may appear a few times

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there is a possibility to see the same item code a few times

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all the numbers in this column will be different

Relational Schemas: Primary Key

primary key

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Relational Schemas: Primary Key

- Primary Key

Relational Schemas: Primary Key

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Relational Schemas: Primary Key

- Primary Key

may be composed of a set of columns

Relational Schemas: Primary Key

Primary Key

may be composed of a set of columns

e.g. “purchase_number” + “date_of_purchase”

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Relational Schemas: Primary Key

Primary Key

one-column primary key = all purchases will be recorded under a different number

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Relational Schemas: Primary Key

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a column (or a set of columns) whose value exists and is unique for every record in a table is called a **primary key**

- each table can have one and only one primary key
- in one table, you cannot have 3 or 4 primary keys

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- cannot contain null values!

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Relational Schemas: Primary Key

Relational Schemas: Primary Key

Sales

purchase number

date_of_purchase

customer_id (FK)

item_code (FK)

Relational Schemas: Primary Key

Sales

purchase number

date_of_purchase

customer_id (FK)

item_code (FK)

Table name: Sales

Primary key: purchase number

Other fields: date_of_purchase, customer_id, item_code

Relational Schemas: Primary Key

Sales

purchase number

date_of_purchase

customer_id (FK)

item_code (FK)

=

Sales

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- each table can have one and only one primary key
- in one table, you cannot have 3 or 4 primary keys
- primary keys are the unique identifiers of a table
- cannot contain null values!
- not all tables you work with will have a primary key

Relational Schemas: Primary Key

relational schema

Sales

purchase number

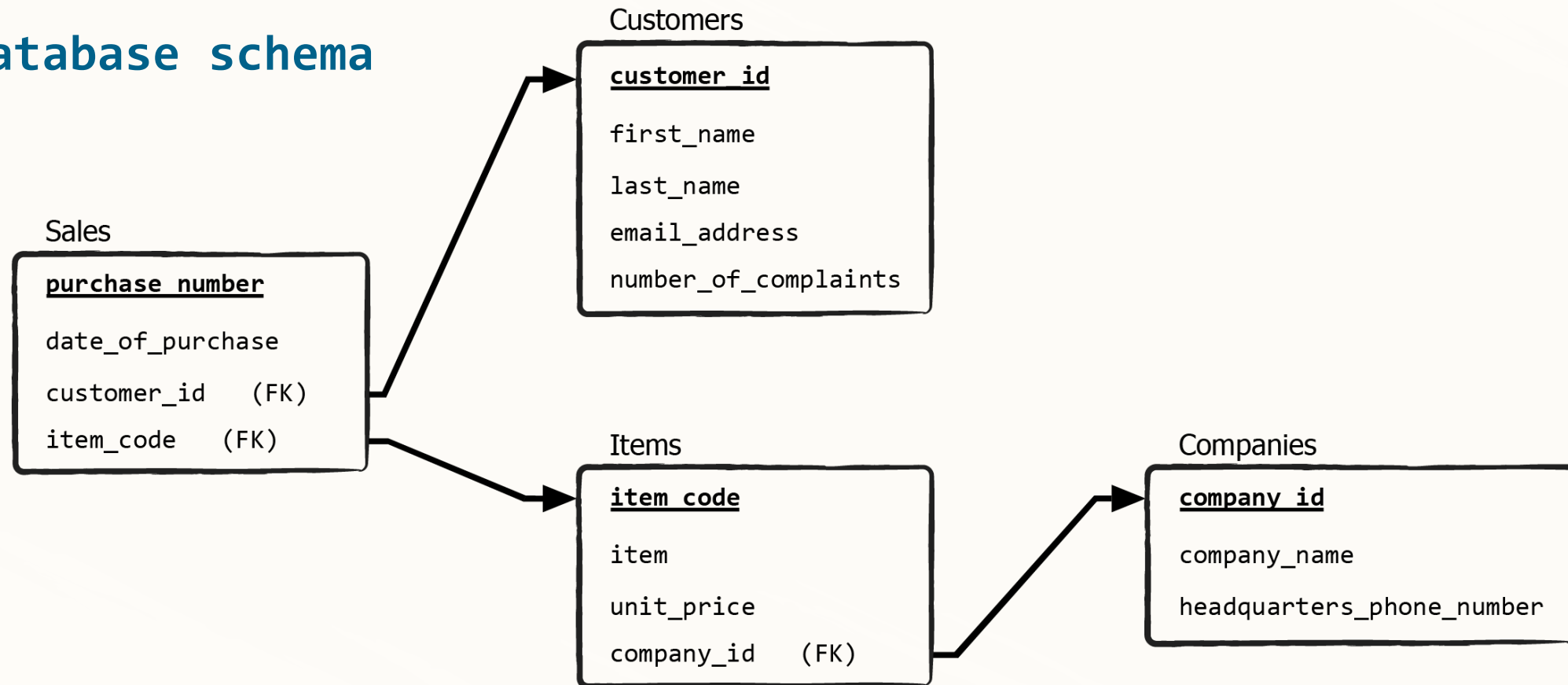
date_of_purchase

customer_id (FK)

item_code (FK)

Relational Schemas: Primary Key

database schema



Relational Schemas: Primary Key

database schema
(relational schemas)

