

Report 9: Database normalization

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1 Which normal form does the employee database satisfy? Why?

Here is the employee table:

emp_no	birth_date	first_name	last_name	gender	hire_date
10001	1953-09-02	Georgi	Facello	M	1986-06-26
10002	1964-06-02	Bezalel	Simmel	F	1985-11-21
10003	1959-12-03	Parto	Bamford	M	1986-08-28
10004	1954-05-01	Chirstian	Koblick	M	1986-12-01
10005	1955-01-21	Kyoichi	Maliniak	M	1989-09-12

All columns in the table except for **emp_no** are only dependent on **emp_no**; in other words, one **emp_no** value maps to exactly one value in each other column.

Therefore, the employee table is in 3NF.

2 Produce a 3NF of the Order form document by normalization

Note that:

- Order date depends on order number
- Customer name, phone, address and city depend on the customer himself (one city for each customer)
- Product description and price depend on product ID
- Product quantity depends on both order number and product ID (one quantity for each combination of order number and product ID)
- Finally, customer number depends on order number (one customer for each order)

We split each set of dependent columns into one table, and receive the following tables:

- “Orders” table, containing these columns:

- Order number
 - Order date
 - Customer number
- “Customers” table:
 - Customer number
 - Customer name
 - Customer phone
 - Customer address
 - City
- “Products” number:
 - Product ID
 - Product description
 - Product price
- “Order detail” table:
 - Order number
 - Product ID
 - Product quantity

Figure 1: Tables

