

In-class exercise, week 10

In this exercise we are going to create (a small part of) a database for an online store.

Product categories

To make the navigation as easy as possible, the customer wants to use a hierarchy of categories for their products, e.g.:

Electronics
Electronics / Computers and tablets
Electronics / Computers and tablets / Desktops (leaf)
Electronics / Computers and tablets / Tablets (leaf)
Electronics / Computers and tablets / Accessories (leaf)
Electronics / TV and video
Electronics / TV and video / TVs (leaf)
Electronics / TV and video / Projectors (leaf)
Home and Kitchen
Home and Kitchen / Furniture (leaf)
Home and Kitchen / Kitchen appliances (leaf)
etc.

For each category we need to store:

- title,
- optional description.

Products

For each product we need to store:

- title,
- optional description,
- base price (retail price without VAT before discount),
- VAT in percents,
- optional discount in percents,
- stock quantity.

Each product in the store belongs to exactly one leaf category.

Tasks

1. Create a relational schema of the database. (Use erdplus.com to draw the schema.)
2. The customer has changed their mind and wants products to belong to multiple categories. Each product will belong to one "main" category and optionally some additional ones.
Change the relational schema to support this extra requirement.
3. Use the modified relational schema, and write the SQL statements to create the tables. (Do not use any automatic tools for this task.)
4. Create an empty SQLite3 database and execute the SQL statements from the previous task.
5. Populate the database: create at least 2 categories and at least 5 products in the shop. Let at least one of the products to belong to multiple categories.