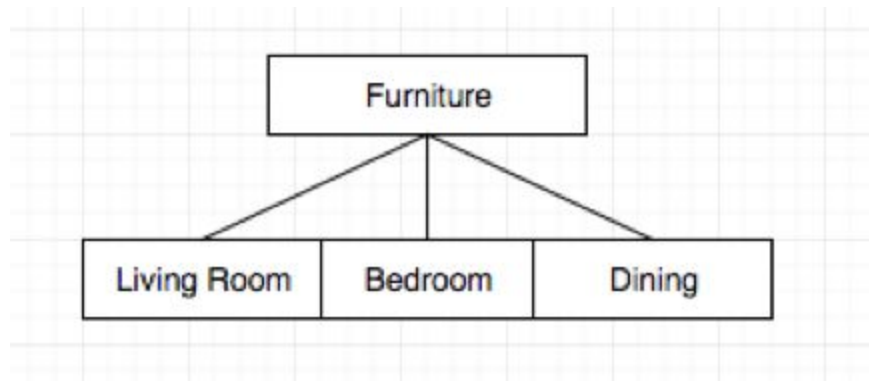


Topic 1 – Online Retailer

ProductsAndProducts (P&P) is an online retailer that sells it all. They sell everything from food to jewelry to auto parts and so on. They recently grew to 300,000 customers and they want to redesign their database so that it can be fast, reliable, and also can match all the new requirements and features that the CEO wants. They heard you are the best at what you do, and they hired you as the architect and developer to do the job.

You met with their team, and you compiled this set of requirements:

- P&P categorizes its products into different categories, and every product belongs to one of the available categories. The category can also have a parent category, meaning that the categories are in a hierarchical structure. Ex:



- The details that they want to store for the products are: weight, name, stock quantity, image, description, how many were sold, and price.
- Naturally, the price of a product may change over time, and P&P wants to make sure that customers can see what they have historically purchased, and see the price that they purchased the product at. Additionally:
 - for the purpose of better reporting, in the order history we include the time of the order, number of items in it, which items were purchased, the shipping address of the order and what credit card was the order made with.
- Adding and removing items to and from the shopping cart should be easy. Also, if we add a product to the shopping cart and the price has changed, the customer still buys the product at the price that the product had when they added it to the cart.
- P&P Customers can have multiple credit cards tied to their account, but only one of them can be the preferred card.
 - In order to enable fast checkout, we should store all information about the credit card in our database, including
 - Owner First and Last Name
 - CC Number
 - Expiry date
 - CCV
 - Address

- Note: multiple users can use the same credit card for purchasing goods on T&T
- The customers may also have multiple shipping addresses tied to their account, but for fast checkout purposes, only one will be the primary shipping address.
- Other information they need to store for the customer
 - First Name
 - Last Name
 - Email
 - Password
 - Phone numbers
 - Cell
 - Work
 - Home
 - DOB
- Shipping will be handled by a third party, so shipment and carrier information should not be included in the design of the database.