

# Big Pharma Requirements

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The pharmaceutical company "Big Pharma" produces many different drugs. In some cases, Big Pharma will contract with other pharmaceutical companies to produce a drug jointly. In the case that Big Pharma makes a contract with another pharmaceutical company for producing a drug, Big Pharma will not produce that same drug on its own or with any other pharmaceutical company besides the company that the initial contract was made. There is no limitation to number of times Big Pharma can make a contract with another pharmaceutical company.

Each drug has a trade name, a formula, ingredients, a dosage, and a date. This date is the date that the formula is patented. All this information needs to be recorded in the database. The trade name (generic name) of the drug uniquely identifies each drug.

Different drugs might have the same formula. Each drug has one or more active ingredients. Each ingredient has a dosage for a given drug. Each drug might also have one or more inactive ingredients, for which also the dosage should be identified. Each ingredient, active or inactive, belongs to a category. Many ingredients can belong to the same category. There are several pre-defined categories. Each drug might have some side effects. The system needs to be able to maintain a list of pre-defined side effects, from which the side effects for each drug can be assigned.

There is a list of pharmacies that Big Pharma has made contracts with for selling its products, i.e., the drugs. Each pharmacy has a name, address and phone number. The name along with the phone number of pharmacy uniquely identifies each pharmacy. Every contract with any pharmacy has a contract number that can not be repeated in the system for any other contract. Each pharmacy buys several drugs from Pharma, for a given price. This price, however, might vary time to time, based on the financial decision of Pharma. It means that drug X might be sold to Pharmacy Y \$10 today and a different price on some other day. Each contract of Big Pharma with pharmacies has a start date, an end date, contact person and the text of the contract. Pharma can have multiple contracts with each pharmacy.

Big Pharma also has contracts directly with hospitals. You need to maintain a list of such hospitals. For each hospital, the name and address of hospital is stored. The name of the hospital is unique. Every contract with any hospital has a contract number that can not be repeated in the system for any other contract. Big Pharma can also have multiple contracts with each hospital. For each contract, Big Pharma is interested in keeping the drug trade name, start date, end date, quantity, and price. Big Pharma is interested in using hospitals as a source of research to get some statistics

regarding the effect of the drugs on patients. Thus, Big Pharma also keeps information such as, illnesses that the drug is used for as the treatment. Each drug can be used for several illnesses. Each illness might need several different drugs. For each one of these a measure of success/failure is stored in the database.