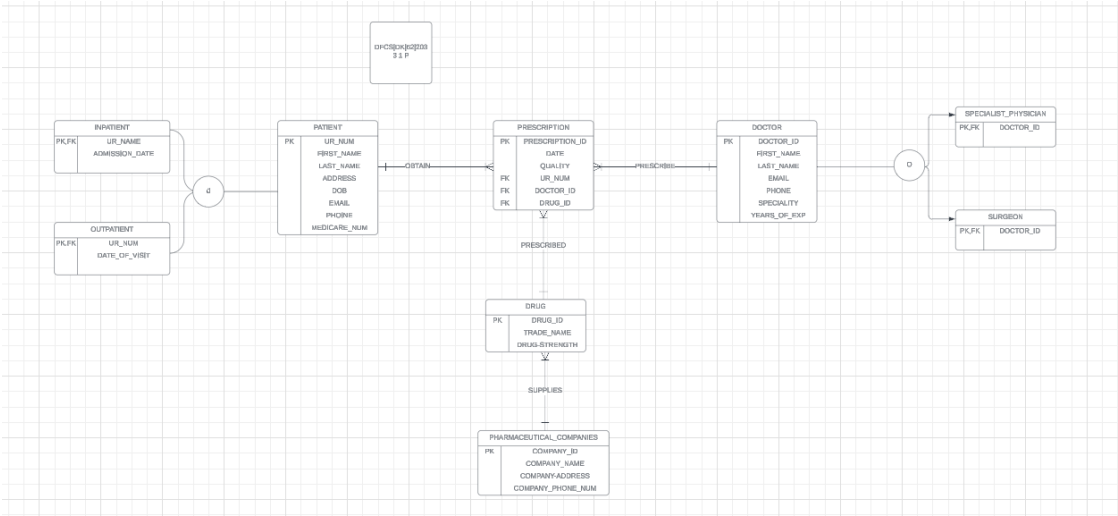
Data and Information management
3.1P entity relationship diagram



- ✓ I removed the composite attribute "name" from the patient entity and substituted it with the simple attributes "first name" and "last name." I have made the same adjustments for the entities of pharmaceutical companies and doctors.

- ✓ Since age is a derived attribute from date of birth, I have declared "DOB" for the patient entity's "age."

- ✓ Since it is assumed that there is a business policy that states that a patient should only have one phone number, I have kept the number. I also made the identical modifications to the entities for pharmaceutical companies and doctors.

- ✓ Assuming that the name may be changed, I am adding a new attribute called "drug_id" to the drug entity to give it a unique identifier. I also made the identical adjustments to the pharmaceutical company's entity.

- ✓ Because a doctor can belong to multiple subcategories, overlapping constraints are applied for this subtype.

- ✓ Since a patient can only be a member of one subtype at a time, disjoint constraints are applied to patients as subtypes.

- ✓ In order to break up many-to-many linkages, prescription is utilized as an associate entity between the patient and the physician.

Relationship and cardinalities

- PATIENT (1,1) PRESCRIPTION (1,M)
  - One patient can have one or many prescription.
  - One prescription is only for one patient.
- DOCTOR (1,1) PRESCRIPTION (1,M)
  - One doctor can prescribe one or many prescription.
  - One prescription is made only by one doctor.
- DRUG (1,1) PRESCRIPTION (1,M)
  - One drug can be prescribed one or many times.
  - One prescription is for only 1 drug.
- PRAMACEUTICAL_COMPANY (1,1) DRUG (1,M)
  - One pharmaceutical company supplies one or many drugs.
  - One drug is supplied by one pharmaceutical company only.