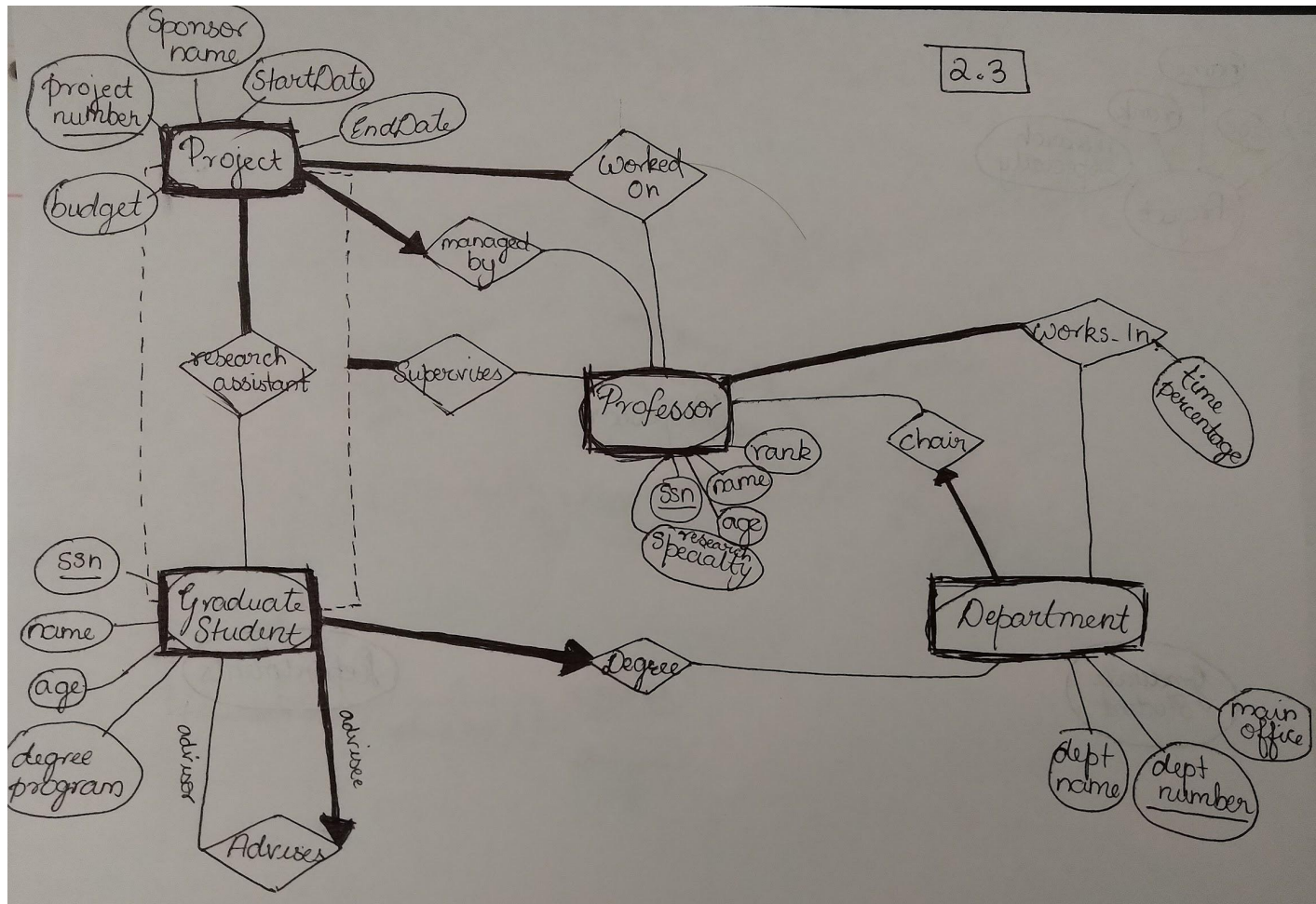Kev Sharma
NetID - kks107

Problem 2.3
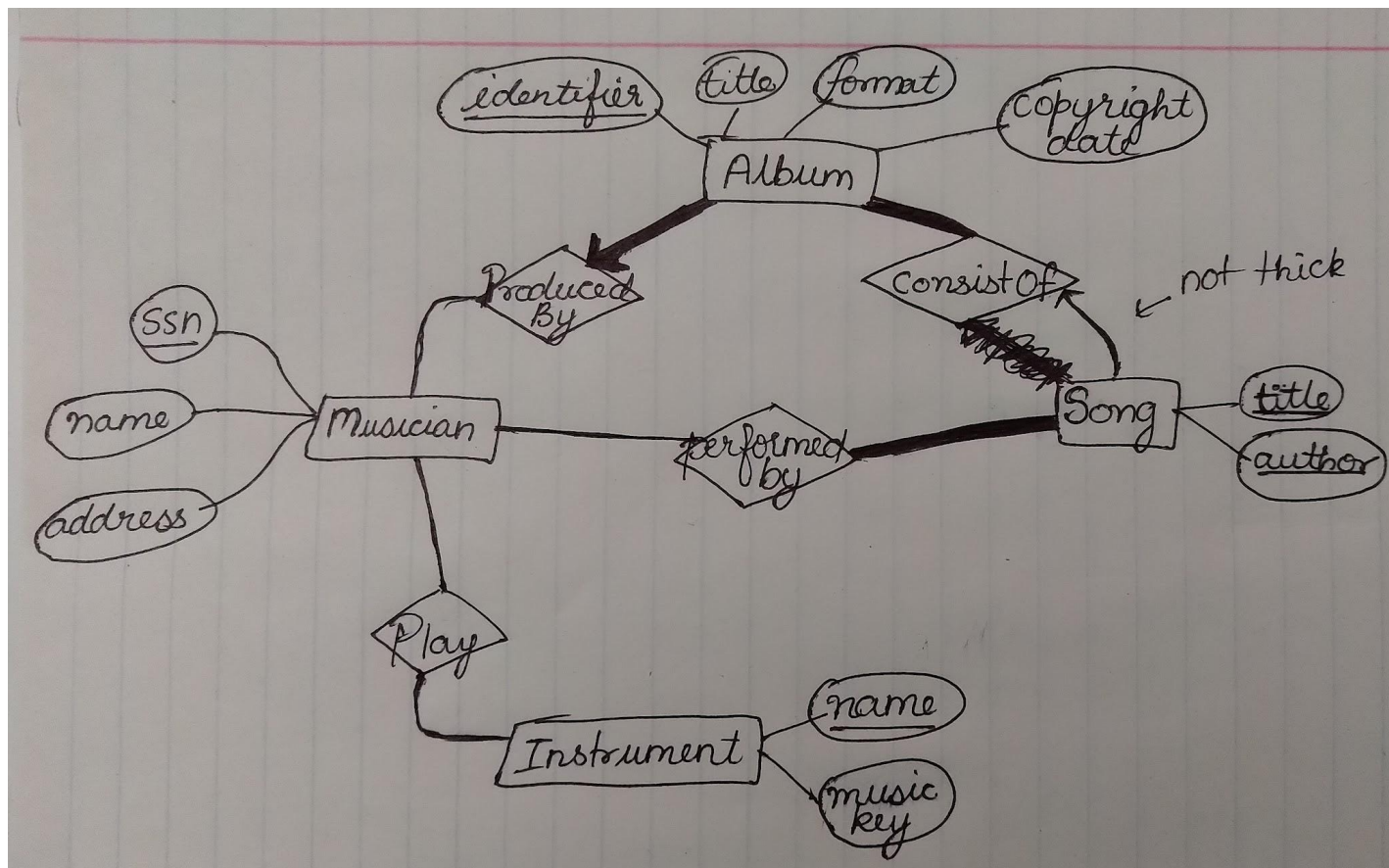
Problem 2.5

Assumption:
1. It is possible to have more albums than songs
2. I have assumed that "Each musician may play several instruments" means that they may play 0 or more songs (i.e some musician may be a singer only). If this assumption is false, I would make the line from Musician to Play thick.

Attributes/Constraints that we can't represent:
1. I have not used Phone as an attribute of a Musician, but rather as an attribute of an address. That is, if a Musician tuple can be uniquely identified by a ssn, no two tuples may have the same address and two different phone numbers.
2. "Each album has a number of songs on it" - I cannot represent this given assumption 1 since for m albums and n songs, if m > n then not every album has a song (since a song may only be in one album).
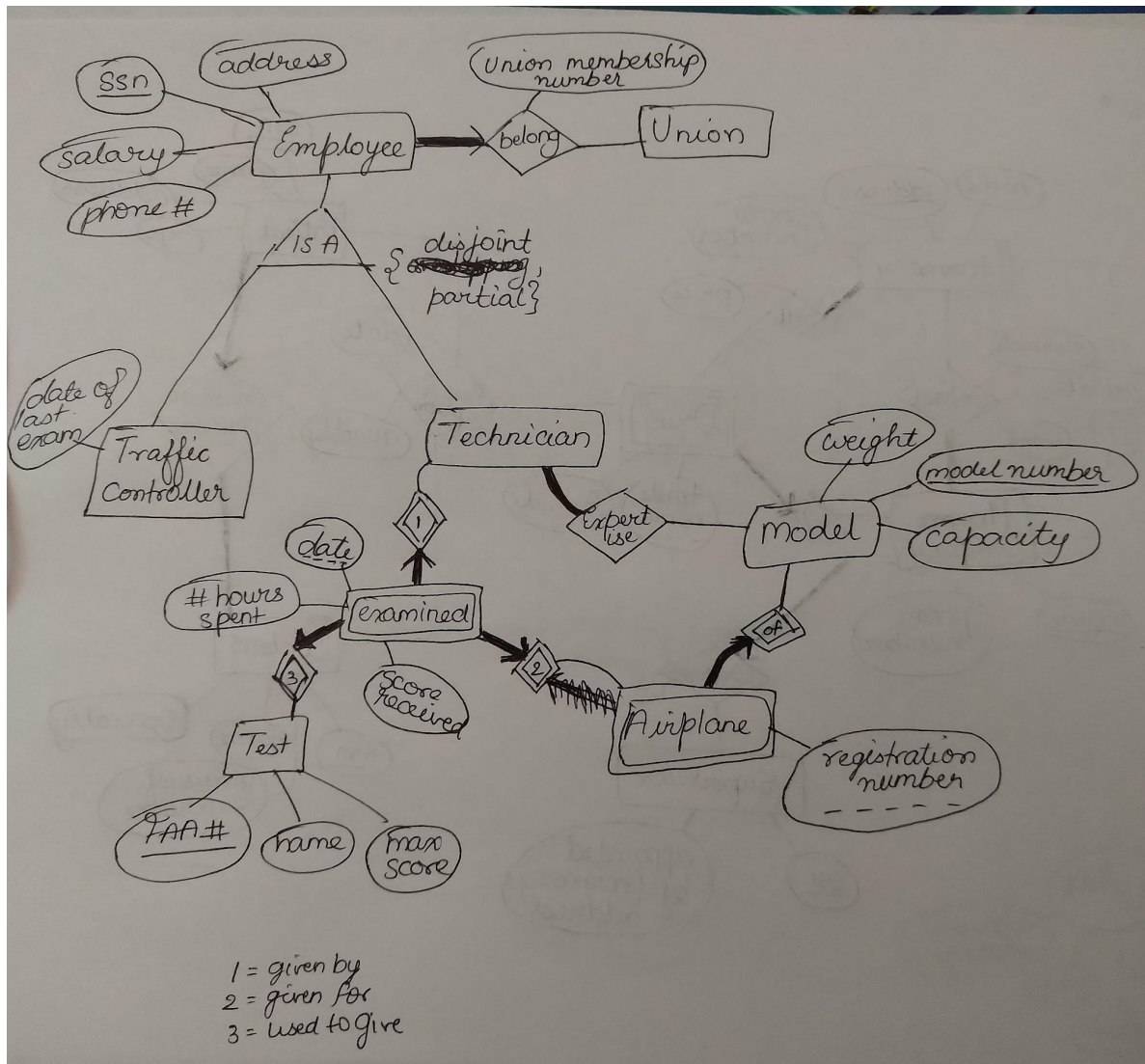
Problem 2.6

Assumptions:
1. I made airplanes a weak entity set, since an "airport accommodates a number of airplane models". If an airplane's model is not accommodated, it shouldn't be in the airport.
2. I assumed that some technicians can't be traffic controllers. Also I wrote partial for covering constraint because there may be pilots and custodians at the airport too.
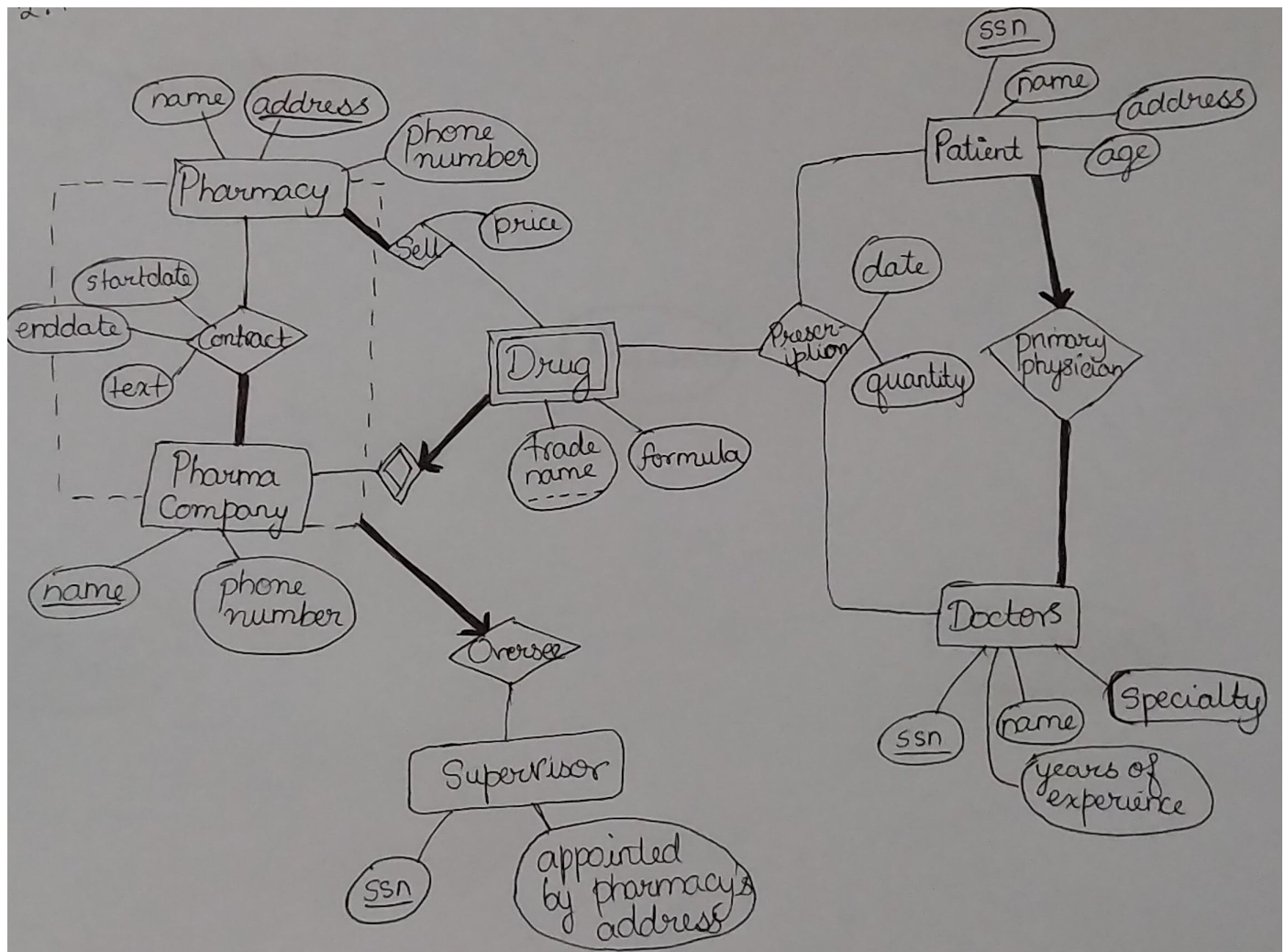
Problem:

1.
2. I cannot express this constraint. Expertise is a relationship between Model and Technician not between an Airplane and a Technician. If the latter were the case, I could create an aggregation and model the FAA Test as a weak entity with identifying owners being the Test entity and the Aggregation Entity. Here I cannot do that.
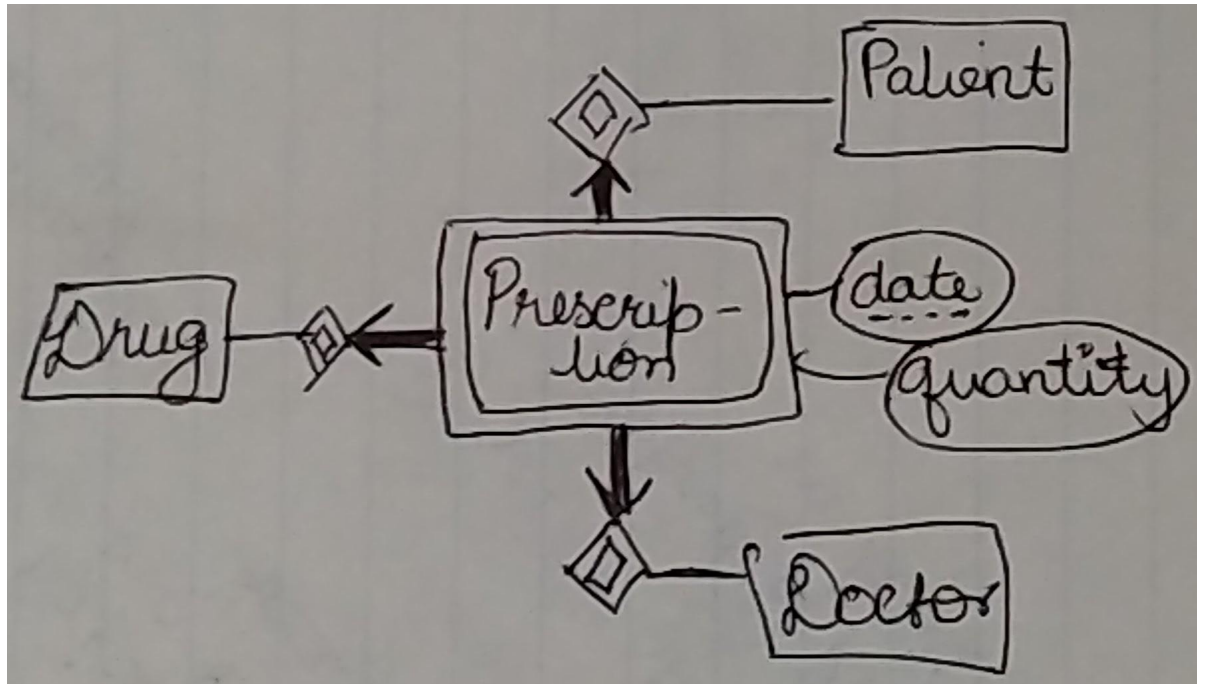
Problem 2.7
1. All constraints captured

2. I would make price an attribute of drug rather than an attribute of the sell relationship. I reflected on the fact that making price an attribute would be more appropriate if the pharmaceutical company sold a drug at a fixed price rather than Prescriptions-R-X chain of pharmacies selling at fixed price. However since we are designing a conceptual schema solely for R-X chain, making price an attribute works here as well.

3. I would employ reification to make 'date' of prescription a partial key as follows:

a.