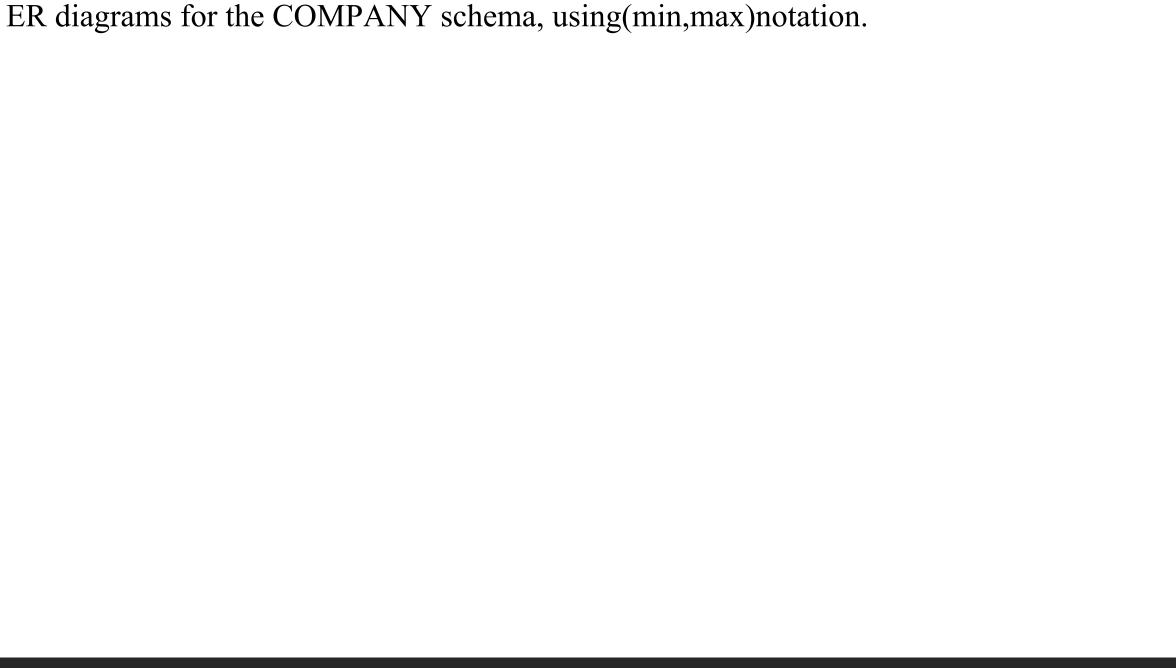
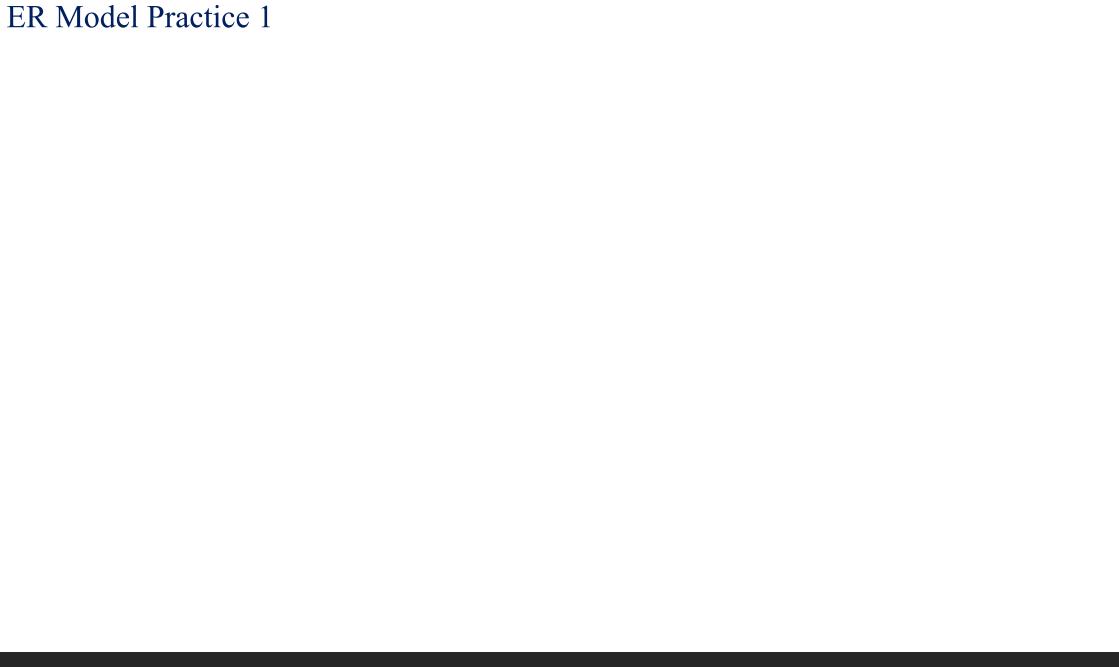
## Database Systems and Web

## Contents to be covered

- •Min Max notations based ER
- **ER Model Practice**





Consider the ER diagram shown in previews slide.

- Given ER diagram represents ...... database
- List the entity types in the ER diagram.
- List all key attributes in the ER diagram.
- List all relationships in the ER diagram.
- List weak entity (if any) in the ER diagram.
- Explain the total and partial participation wrt. ER diagram.
- Explain mapping Cardinalities in relationship wrt. ER diagram.

## ER Model Practice 2

XYZ company decided to store information about musicians who perform on its albums in a database with following requirements

- Each musician identified by an ssn, a name and an age.
- Each musician lived in different places. Places are identified by an address and a ph.no.
- Each instrument is identified by a name and a key.
- Each album has a title, date and a format. Each song has a title and an author.
- Each musician play several instruments and a given instrument played by several musicians.
- Each album has number of songs on it, but no song may appear on more than one album.
- Each song is performed by one or more musicians and a musician may perform a number of songs.
- Each album has exactly one musician who acts its producer.
- A musician may produce several albums.

Draw an ER diagram that captures the preceding information. Identify any constraints not captured by the ER diagram.

The Prescriptions-R-X chain of pharmacies has offered to give you a free lifetime supply of medicine if you design its database. Given the rising cost of health care, you agree. Here's the information that you gather:

- Patients are identified by an SSN, and their names, addresses, and ages must be recorded.
- Doctors are identified by an SSN. For each doctor, the name, specialty, and years of experience must be recorded.
- Each pharmaceutical company is identified by name and has a phone number.
- For each drug, the trade name and formula must be recorded. Each drug is sold by a given pharmaceutical company, and the trade name identifies a drug uniquely from among the products of that company. If a pharmaceutical company is deleted, you need not keep track of its products any longer.
- Each pharmacy has a name, address, and phone number

- Every patient has a primary physician. Every doctor has at least one patient.
- Each pharmacy sells several drugs and has a price for each. A drug could be sold at several pharmacies, and the price could vary from one pharmacy to another.
- Doctors prescribe drugs for patients. A doctor could prescribe one or more drugs for several patients, and a patient could obtain prescriptions from several doctors. Each prescription has a date and a quantity associated with it. You can assume that, if a doctor prescribes the same drug for the same patient more than once, only the last such prescription needs to be stored.
- Pharmaceutical companies have long-term contracts with pharmacies. A pharmaceutical company can contract with several pharmacies, and a pharmacy can contract with several pharmaceutical companies.
- Fore each contract, you have to store a start date, an end date, and the text of the contract. Pharmacies appoint a supervisor for each contract. There must always be a super-visor for each contract, but the contract supervisor can change over the life time of the contract.

- 1. Draw an ER diagram that captures the preceding information. Identify any constraints not captured by the ER diagram.
- 2. How would your design change if each drug must be sold at a fixed price by all pharmacies?
- 3. How would your design change if the design requirements change as follows: If a doctor prescribes the same drug for the same patient more than once, several such prescriptions may have to be stored.

Patients

Doctor

Pharmacy

Drugs

Pharma Co

