

Answer 2.2

1. The ER diagram is shown in Figure 2.1.
2. The ER diagram is shown in Figure 2.2.
3. The ER diagram is shown in Figure 2.3.
4. The ER diagram is shown in Figure 2.4.
5. The ER diagram is shown in Figure 2.5.
6. The E.R. diagram is shown in Figure 2.6. An additional entity set called Group is introduced to identify the professors who team to teach a course. We assume that only the latest offering of a course needs to be recorded.

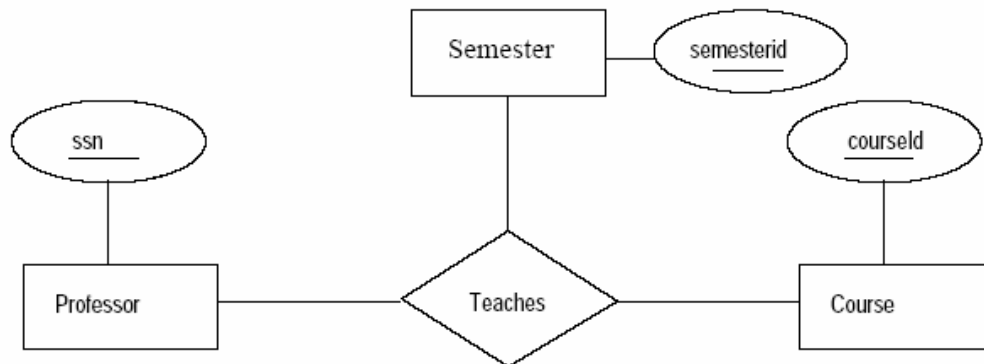


Figure 2.1 ER Diagram for Exercise 2.2, Part 1

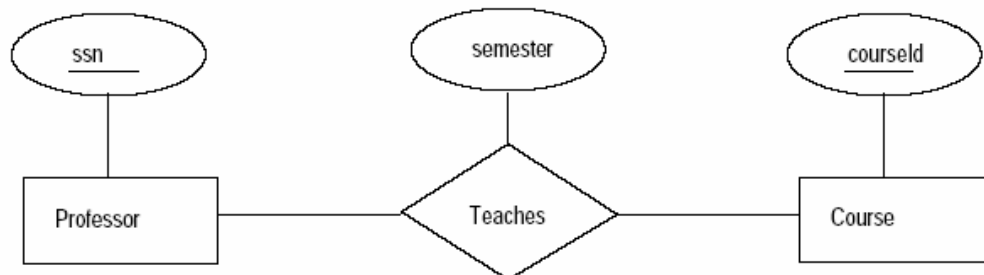


Figure 2.2 ER Diagram for Exercise 2.2, Part 2

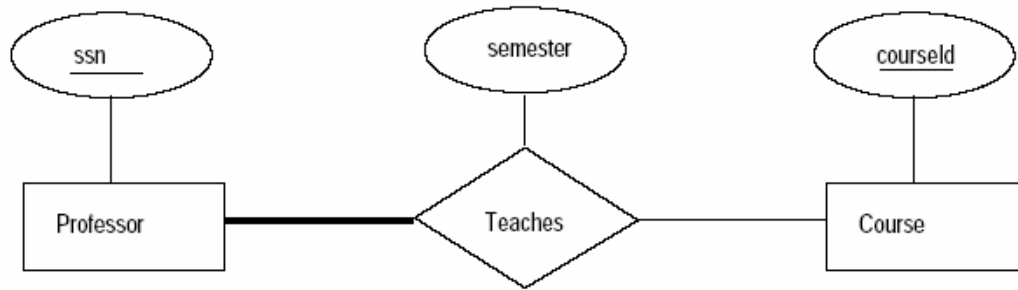


Figure 2.3 ER Diagram for Exercise 2.2, Part 3

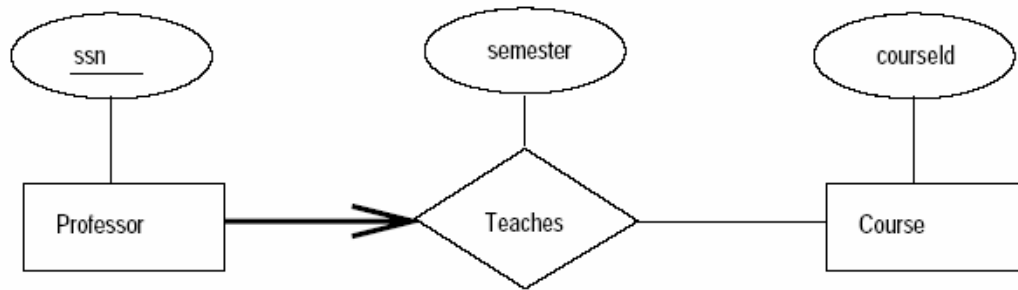


Figure 2.4 ER Diagram for Exercise 2.2, Part 4

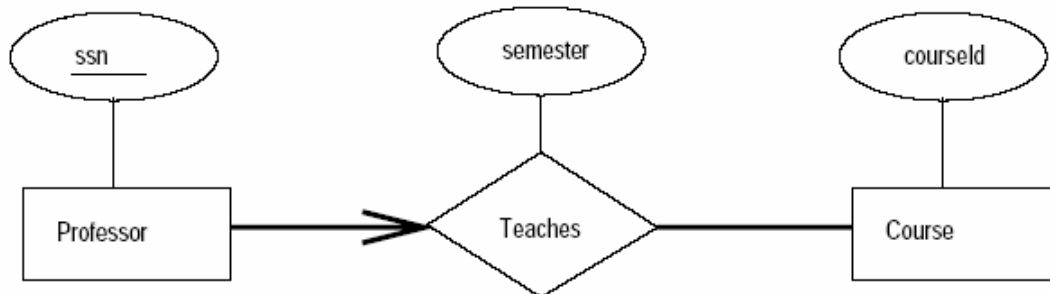


Figure 2.5 ER Diagram for Exercise 2.2, Part 5

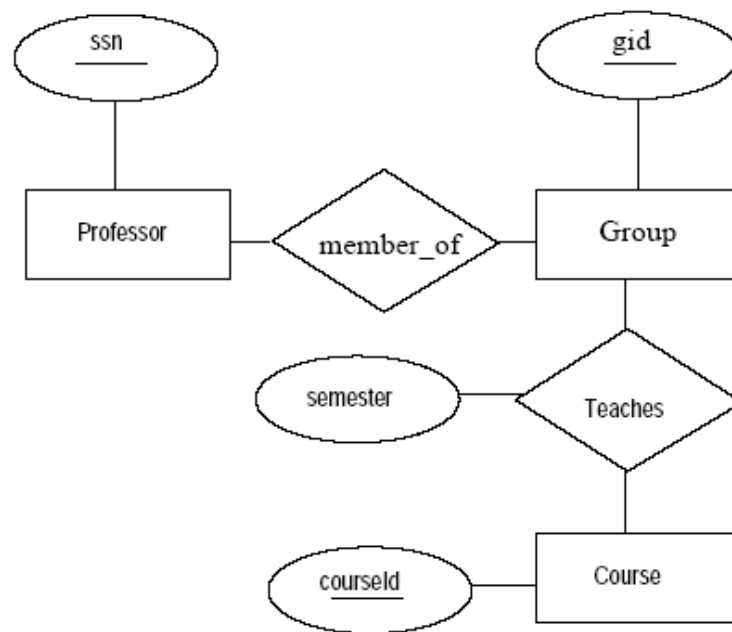


Figure 2.6 ER Diagram for Exercise 2.2, Part 6

Answer 2.6 The ER diagram is shown in Figure 2.10.

1. Since all airline employees belong to a union, there is a covering constraint on the Employees ISA hierarchy.
2. You cannot note the expert technician constraint the FAA requires in an ER diagram. There is no notation for equivalence in an ER diagram and this is what is needed: the Expert relation must be equivalent to the Type relation.

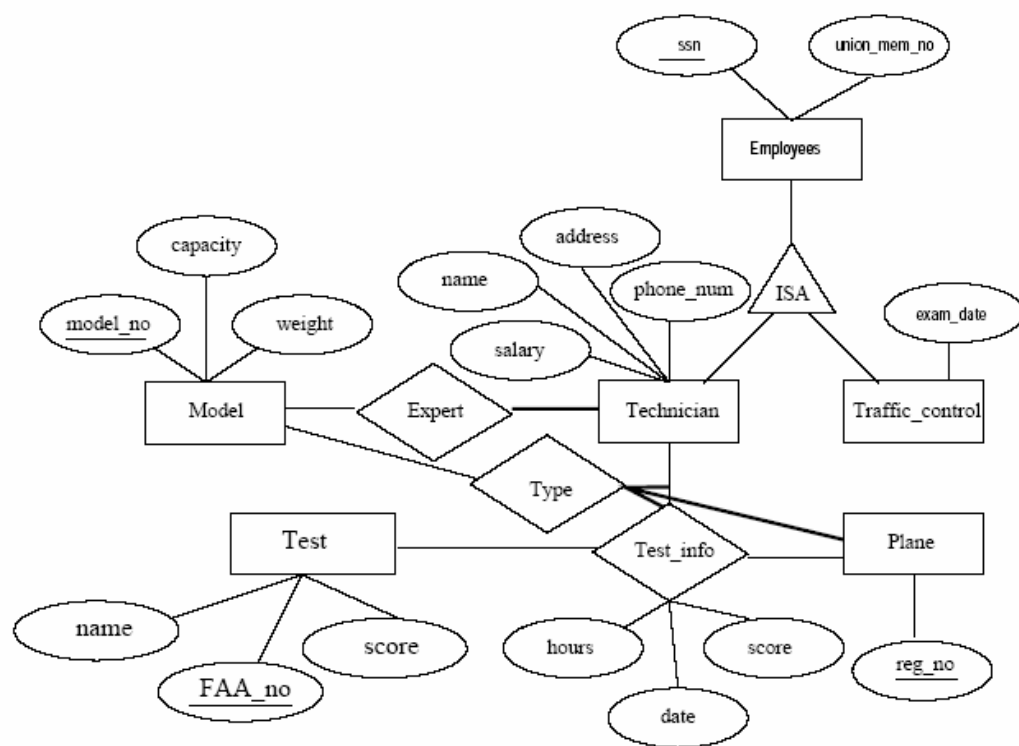


Figure 2.10 ER Diagram for Exercise 2.6