CS250/219 Database Systems: Ex 6

2005/06 Exam

You have been asked to model a database for an airport. The database will keep track of employees and aeroplanes. This is relevant information:

Every plane has a registration number, and is of a specific model. Each model has a model number, name, maximum passenger capacity, weight and manufacturer. The airport has a number of employees. For each employee it needs to store the name, NI number, address, salary and phone number. There are two types of employees — a technician who can be an expert on one or more plane model(s) (many technicians can be an expert in the same model) — and a traffic controller who must have an annual medical examination (only the date of the most recent examination is required to be stored). The airport has to test planes. The date and time of each test, the technician that carries it out, and the number of hours that the technician spent testing the plane is required to be stored. Each test is allocated a unique test number by the Civil Aviation Authority (CAA).

Problem 1. Draw a complete ER diagram for the above problem. Include the cardinality of all relationships. The cardinality of some relationships cannot be deduced from the above passage. Assume sensible values.

Problem 2. Indicate the primary key of each entity (by underlining it).

Problem 3. Convert the ER diagram into relational tables.