Assignment 1

Marks: 15x2=30

Deadline: 13th Aug 2018 (3 p.m.)

Assignment-A: Draw an ER diagram for the airport database. Be sure to indicate various attributes of each entity and relationship set. Also specify the key and participation constraints for each relationship set.

Airport officials decided that all information related to the airport should be organized using a DBMS, and you have been hired to design the database. Your first task is to organize the information about all the airplanes stationed and maintained at the airport. The relevant information is as follows:

1. Every airplane has a registration number, and each airplane is of a specific model.

2. The airport accommodates a number of airplane models, and each model is identified by a model number (e.g., DC-10) and has a capacity and a weight.

3. A number of technicians work at the airport. You need to store the name, SSN, address, phone number, and salary of each technician.

4. Each technician is an expert on one or more plane model(s), and his or her expertise may overlap with that of other technicians. This information about technicians must also be recorded.

5. Traffic controllers must have an annual medical examination. For each traffic controller, you must store the date of the most recent exam.

6. All airport employees (including technicians) belong to a union. You must store the union membership number of each employee. You can assume that each employee is uniquely identified by a social security number.

7. The airport has a number of tests that are used periodically to ensure that airplanes are still airworthy. Each test has a Federal Aviation Administration (FAA) test number, a name, and a maximum possible score.

8. The Airport Authority requires the airport to keep track of each time a given airplane is tested by a given technician using a given test. For each testing event, the information needed is the date, the number of hours the technician spent doing the test, and the score the airplane received on the test.

Assignment-B: Draw an ER diagram that captures the following healthcare information.

1. Patients are identified by an SSN, and their names, addresses, and ages must be recorded.

2. Doctors are identified by an SSN. For each doctor, the name, specialty, and years of experience must be recorded.

3. Each pharmaceutical company is identified by name and has a phone number.

4. 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.

5. Each pharmacy has a name, address, and phone number.

6. Every patient has a primary physician. Every doctor has at least one patient.

7. 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.

8. 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.

9. 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. For each contract, you have to store a start date, an end date, and the text of the contract.

10. Pharmacies appoint a supervisor for each contract. There must always be a supervisor for each contract, but the contract supervisor can change over the lifetime of the contract.