ISYS1055/1057 Tutorial/Lab Sheet

The Entity-Relationship Model 2

1. Discuss and construct a likely ER diagram for the OMDB database, which is reproduced below for easy reference.
   MovieInfo (mvID, title, rating, year, length, studio)
   Director(directorID, firstname, lastname)
   Member(username, email, password)
   Actor(actorID, firstname, lastname, gender, birthplace)
   Cast(mvID*, actorID*)
   Direct(mvID*, directorID*)
   Genre(mvID*, genre)
   Ranking(username*, mvID*, score, voteDate)

2. Download the SQL DDL and DML statements for the OMDB database from Blackboard. Define tables and input data for the OMDB database in your Oracle account. *Note that the OMDB database is needed to complete Assignment 2.*

3. Construct an ER diagram for the Worksite database based on the given description. State any assumptions.
   > A worksite at a particular address has several named workers with tax file numbers and tasks. Building materials of certain type and quantities are delivered by named trucking companies on a date to a supervisor at the worksite; there are several manufacturers of each kind of material, each with their own business name and address.

4. Map the Technician Database ER diagram in Fig. 1 on the next page into a relational schema. Identify the concepts in the ER diagram and explain how they are represented in the resulting relational schema. Especially,

   a. Indicate any weak entity set, supporting relationships and keys.
   b. Indicate any ternary relationships and explain how it is represented in the relational schema in the mapping result.

5. Continuing with Question 4, consider the following further assumption:
   > The price of a Supplying a Product to a Site by a Supplier not only depends on the Supplier, Product and Site but also on the date of Supply.
   For each relation,
   - List the non-redundant non-trivial FDs.
   - Underline primary key and denote any foreign keys by asterisks (*).
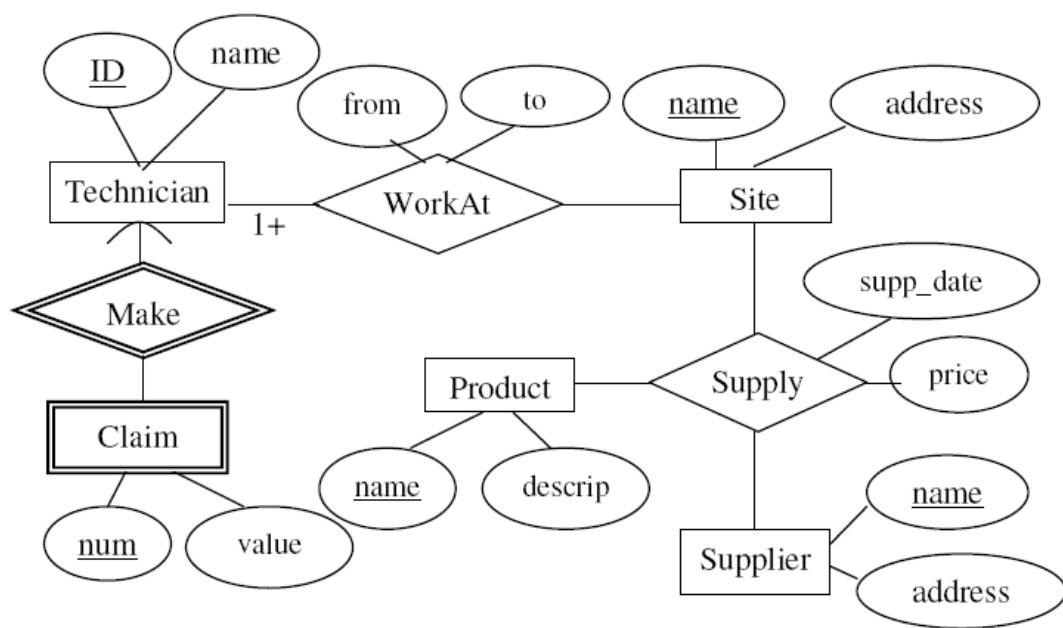   - Explain if the relation is in BCNF/3NF. Decompose relations not in BCNF/3NF into relations in BCNF/3NF.

Fig. 1. The Technician Database ER diagram