CIT6114 - Database Fundamentals

Lab 4

Part A: Discussion

Q1. What is multivalued attribute? Give TWO examples.

Q2. Referring to Q1, explain briefly TWO solutions on how a multivalued attribute is implemented in a relational database.

Q3. Draw a complete E-R Diagram based on the following business rules:

i. A company operates five departments.
ii. Each department has employees.
iii. Each employee works for only one department
iv. The largest department has 30 employees
v. Each employee may or may not have one or more dependents
vi. Computers are located in a designated room.
vii. Each employee may use any computer in the room
viii. Each computer may be used by more than one employee on different days.

a) Identify all possible entities. Hint: An entity is normally a noun that can be found in the business rule.

b) Let's examine each of the entities that are listed out. Is it necessary to include every entity that can be found in the business rules? Explain your answer.

c) Let's examine the relationships between the entities. List out possible relationship between every two entities you listed out in question 2(b), specify whether it is a mandatory (|)or optional (0) relationship, and specify the cardinality (whether 1:1, 1:M, M:N etc)

d) Complete the ERD using the elements you identified in steps Q3 (a) to (c).

Part B: IBM DB2 (Self-Learning)

1. Connect to the database that contains Table1, which you have created in Lab 2.

2. Use a SELECT SQL command to verify if Table1 contains any record.

3. If you have not inserted any records, please do so, as follows:

Code	CourseName	Credit
TCP1101	Programming	4
TIS1001	Computer	4
TMT1001	Algebra	4
MGT2102	Business	2

4. Construct a SQL command to display only records with 4 credit hours.

5. Construct a SQL command to display the course name for course code with TIS1001