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**7BUIS030W Data System Concepts and Fundamentals**

**Tutorial 02**

**To answer the questions in this tutorial , please refer to Lecture-3 in Blackboard**

**Tutorial 02 Exercise 01**

For each of the conceptual Entity Relationship Diagrams (ERDs) below justify in detail the multiplicity (i.e. participation and cardinality) by **writing 4 statements** to explain the 4 digits on both sides of the relationships.

Question 1.1.

Module

Student

1..4

0..\*

enrols in

Question 1.2.

Lab

Computer

0..1

1..\*

is located in

Question 1.3.

Laptop

Staff

1..3

0..1

Is allocated to

Question 1.4.

Employee

Car

0..2

0..1

uses

Question 1.5

Address

Person

0..\*

0..\*

Belongs to

**Tutorial 02 Exercise 02**

Create a basic conceptual ERD for each of the following descriptions. Make sure you include the entity names, relationship names, reading directions and multiplicities (i.e. participation and cardinality).

* 1. Each bank operates 5 branches, and each branch belongs to one bank.
  2. Each branch in part 1.1 may have one manager, and each manager works for one branch.
  3. The manager in part 1.2 manages one or more staff, and each staff is managed by one manager.

1.4. Each of the staff in part 1.3 may or may not have one or more dependents, and each dependent belongs to one staff.

1.5. Represent all the conceptual ERDs described in 1.1., 1.2., 1.3, and 1.4. as a single conceptual ERD.