Logical Database Design **Lab week 5: Visio EERD, Weight: 2%**

Due: Beginning of lab session 6 – on completion show your work to one of your lab tutors. For Task 1 save your work as week5_task1.vsd and Task 2 as week5_task2.vsd. All design diagrams should be implemented in Microsoft Visio Application.

Given the following business scenarios in Task 1 and 2, create a **Crow's Foot Extended Entity Relationship Diagram (EERD)** using a specialisation hierarchy identifying the following.

a) Possible relationships and their connectivities.
b) The mandatory/optional dependencies for the relationships.
c) Resolve any M:N relationships.
d) Subtype discriminator.
e) Disjoint or overlapping subtypes.
f) Partial or total completeness.

Task 1:

You are to model the human resources aspect of the Auckland University of Science and Technology's (AUST) business operation. Each person that the HR of AUST are interested in has UID (university identification) number, name (First name, Surname), address (street, city, postcode), gender and date of birth. Every person is either a student, an alumnus and or an employee (that is a person can belong two categories student and employee or alumnus and employee) [Assume that there are no other group of persons in the university).

The values for the date hired, salary and designated department of each employee are recorded. For students, the programmes they are admitted into are recorded and for the alumni the designated degree, year and date of completion.

Some of the employees are either academic or non-academic staff members, but not all of them belongs to any of these two categories. The ranks of the academic staffs and the positions of non-academic staffs are recorded.

All registered students are either undergraduates or graduates student.

State any assumptions that you have made, type them in a word document and save it as week5_task1.docx.

Task 2:

The Electronics Technology Company (ETC) provides offerings to its customers. There are two types of offerings provided: products and services. The offerings are identified by an offering ID and an attribute of description. In addition, the products are described by the product name, standard price, and date of first release and services by the name of the company's unit responsible for the service and conditions of service. There are repair, maintenance, and other types of services. A repair service has a cost and is the repair of some product; a maintenance service has an hourly rate. Fortunately, all newly purchased products never require repair. A customer may purchase an offering, and the company needs to keep track of when the offering was purchased and the contact person for that offering with the customer. Unfortunately, not all offerings are purchased. Customers are identified by customer ID and have descriptive data of name, address, and phone number. When a service is performed, that service is billed to some customer. Because some customers purchase offerings for their clients, a customer may be billed for services he or she did not purchase, as well as for ones that were purchased. When a customer is billed for a service (although some may never require a service of any type), the company needs to keep track of the date the service was performed, the date the bill is due, and the amount due.

State any assumptions that you have made, type them in a word document and save it as week5_task2.docx.