BSc (Hons) in Information Technology – Year 1

Tutorial 6

IT1090 – Information Systems and Data Modeling

1. Describe the following terms.
   a.
      i. **Entity** - person, organization, object type about which information is stored
      ii. **Entity set** - set that represents a group of entities of a similar type
      iii. **Domain of an attribute** - data type with optional constraints of a attribute

   b. **Composite attribute** – made up for more than one simple attribute
   c. **Multivalued attribute** - attribute which consists of more than 1 values
   d. **Derived attribute** – attribute do not exist in the physical database, but their values are derived from the other attributes presents in the database

2. Rent-a-car is a Car rental company. The managing director of Rent-a-car requires the following information.
   "Display all Nissan, blue, Sedans, manufactured in 2005"

   a. What is the entity you should consider in order to answer the above query. Give suitable attributes for the entity you named.
      Car – Color, Model, Car-type, Manufactured year
   b. Can you suggest a suitable primary key for the entity you named? Are there any multi valued attributes?
      There are no suitable primary key to uniquely identify a record.
      No there are know multivalued attributes

3. Consider the entity STUDENT in the SLIIT student information system.
   a. List the attributes.

      Name, DOB, Phone number, Address, Al results, Ol results, NIC, IT number

   b. Identify a suitable primary key.

      IT Number

   c. Identify a possible composite key.

      Phone Number, NIC

   d. Identify a possible candidate key.

      Address

   e. Why is it not considered as the primary key? Most relevant to a given scenario (upon your own argument as suitable)

      There can be 2 or more students from same address

4. Name some ER diagramming conventions.

End of the Tutorial