1. Describe the following terms.
   * 1. Entity - a table or attribute of a table in database
     2. Entity set - a group of similar entities
     3. Domain of an attribute - rules that describe the legal values of a field type
   1. Composite attribute - The attributes which can be divided into sub-parts
   2. Multivalued attribute - an attribute that can have more than one value associated with the key of the entity
   3. Derived attribute - one whose value is dynamic and derived from another attribute
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”

* 1. What is the entity you should consider in order to answer the above query. Give suitable attributes for the entity you named.
  2. Can you suggest a suitable primary key for the entity you named?

Name, color and manufactured date

* 1. Are there any multi valued attributes?

Manufactured date

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

Name, student id, NIC, age, date of birth, address, AL results

* 1. Identify a suitable primary key.

Student id

* 1. Identify a possible composite key.
  2. Name and birth day
  3. Identify a possible candidate key.

NIC

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

Because student id is decided by sliit. But NIC also can use

1. Consider the statement below,

“In Health Plus Hospital an admitted patient is assigned for a specific doctor for examination. One doctor is assigned with many patients”

1. a) Identify entities and relationships.

Entities = Admitted patient, Doctor, hospital

Relationship = admit, assign, examine

1. b) Work out the cardinalities

Patient -assign – doctor 1: N

Hospital – admittee – patient 1: N

1. c) Identify possible attributes for the entities

patient – age, name, nic, contact number,

1. d) Draw an ER diagram.

Assigns

N 1

Doctor

Patient

1. At SLIIT, degree courses are conducted. Students can enroll in degree courses .They have to follow many units/subjects for a particular degree program .There is a well-qualified academic staff to teach.
2. a) Identify the entities on the above scenario

Entities – Courses, student, units, academic staff

1. b) Identify the relationships between entities.
2. Relationship – enroll, follow, teach
3. c) Draw an ER diagram. Show some possible attributes for each entity and also indicate the cardinalities.

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N N

Enrolls

Course

Student

N

teachs

N

Academic - Staff

1. Name some ER diagramming conventions.

ER diagrams are created based on three basic concepts: entities, attributes and relationships. ER Diagrams contain different symbols that use **rectangles to represent entities, ovals to define attributes and diamond shapes to represent relationships**. At first look, an ER diagram looks very similar to the flowchart.