Question one:

A high school needs to design a Simple Library System with the following requirements:

Students can register as members of the library. Members can borrow books. Each borrowed book is considered a loan. One loan can have only one book. A book can be in zero or one active loans and in zero or many past loans. A member can have zero or many loans (including active loans and past loans).

As database designer,

1. How many entities participating into this database?
2. What are those entities?
3. Identify the possible attributes for each entity.
4. How many relationships among those entities?
5. Draw LDM by showing the possible cardinalities

Question Two

MTech company needs to design a simple order management system for a wholesale store with the following requirements:

Customers send orders to the store, although some customers may not have sent any orders yet. An order has many order items, and each order item is for one product. There may be products that do not have an order. After gathering the products into an order, an invoice will be prepared for that order. An invoice has many invoice items, with one product in each invoice item.

As database designer,

1. How many entities participating into this database?
2. What are those entities?
3. Identify the possible attributes for each entity.
4. How many relationships among those entities?
5. Draw LDM by showing the possible cardinalities