**Imperial Group of Colleges**

**Test #3 : Database Class 4th Year**

**SALES LEDGER AND STOCK CONTROL**

ABC Ltd plans to computerize its sales ordering and stock control system. A feasibility study has strongly suggested that a relational database system be installed. The details of ABC's sales and stock control are as follows:

* Customers send in orders for goods. Each order may contain requests for variable quantities of one or more products from ABC's range. ABC keeps a stock file showing for each product the product details and the preferred supplier, the quantity in stock, the reorder level and other details.
* ABC delivers those goods that it has in stock in response to the customer order and an invoice is produced for the dispatched items. Any items that were not in stock are placed on a back order list and these items are usually re-ordered from the preferred supplier. Occasionally items are ordered from alternative source from alternative sources.
* In response to the invoices that are sent out to ABC's customers, the customers send in payments. Sometimes a payment will be for one invoice, sometimes for part of an invoice and sometimes for several invoices and part-invoices.
* Draw an entity-relationship model, between entities mention all the relationship, categories the entities sets, instances, generalization, specialization, sub and super types of entities and also mention the attributes and all its types.

**UNIVERSITY DEPARTMENTS**

A university consists of several faculties. Within each faculty there are several departments. Each department may run a number of courses.

* All teaching staff are attached to departments, each staff member belonging to a unique department. Every course is composed of sub-courses.
* Some sub-courses are part of more than one course.
* Staff may teach on many sub-courses and each sub-course may be taught by a number of staff.
* Draw an entity-relationship model, between entities mention all the relationship, categories the entities sets, instances, sub and super types of entities and also mention the attributes and all its types.

**COMPANY AND ITS DEPARTMENTS**

A

company has several departments. Each department has a supervisor and at least one employee. Employees must be assigned to at least one, but possibly more departments. At least one employee is assigned to a project, but an employee may be on vacation and not assigned to any projects. The important data fields are the names of the departments, projects, supervisors and employees, as well as the supervisor and employee number and a unique project number.

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1. Identify Entities
2. Find Relationships
3. Draw Rough ERD
4. Fill in Cardinality
5. Identify Attributes