Task(1A). Conceptual Design using ER Model.

28/7/25

Step 1: Problem understanding & Requirment Analysis

- ✓ Analyse the real-world application: Healthcare Mangement system.
- ✓ understand domain: Hospitals, Patients, Doctors, Appointments, prescriptions.

Step 2: Identify Major Entities.

Entities are core components representing objects or concepts in system:

Patient, Doctor, Appointment, prescription, medicien

Step 3: Identify Attributes for each entity.

Example attributes:

Entity Attributes

Patient: Patient (PK), Name, Age, gender, phone

Doctor: Doctor (PK), Name, specialization, contact no.

Appointment: prescription (PK), Appoinment (FK), Notes.

Medicine: medicine (PK), Name, Dosage, manufacture.

Step 4: Define Relationships btw Entities.

- ✓ A patient books one or more Appointments.
- ✓ A Doctor conducts many Appointments.
- ✓ An Appointment generates one prescription.

Step 5: Draw ER Diagram using draw.io.

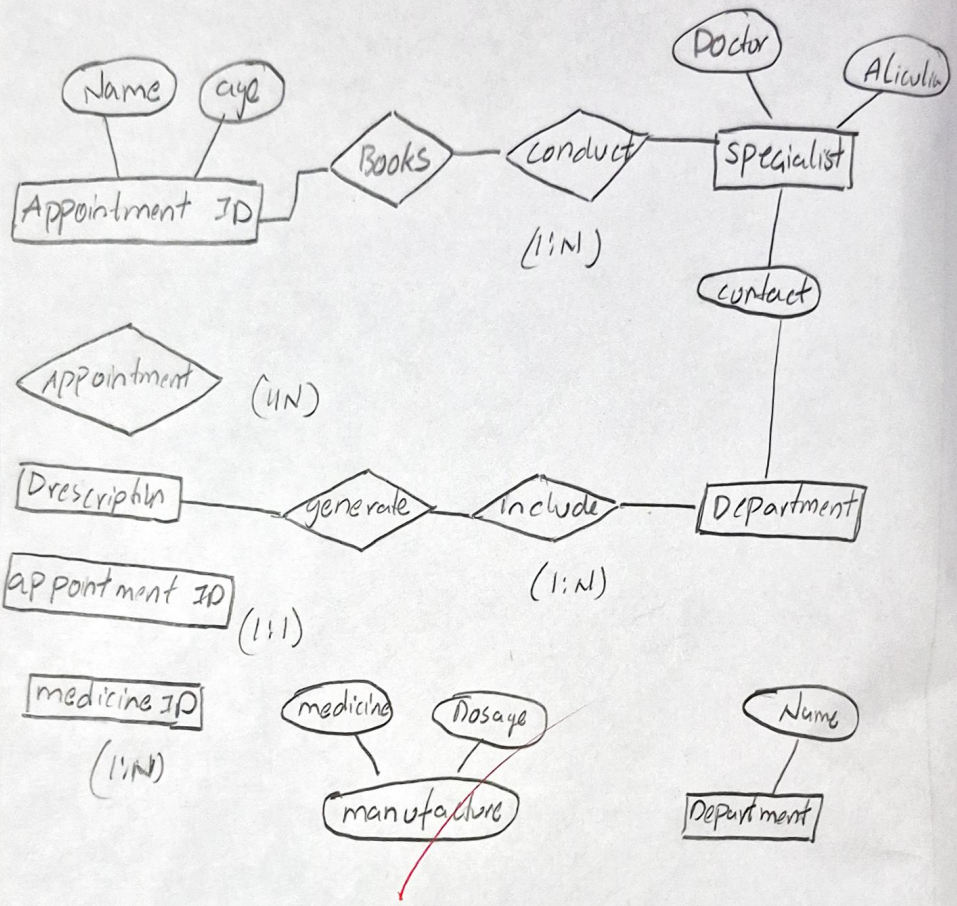
Instructions:-

- ✓ open https://draw.io.
- ✓ Choose Blank Diagram → click create.
- ✓ From left panel, drag following.
- ✓ use rectangles for Entities (Patient, Doctor).
- ✓ use diamonds for Relationships (Books, conducts).
- ✓ use PK or underline to denote primary key
- ✓ use double ellipse for multivalued attributes
- ✓ use labels such as (1:N), (M:N) etc. to show cardinalities

output).

Entity Relationship Diagram (ERD) that clearly shows:
All identified entries with attributes.
All relationships with appropriate cardinalities.

output diagram:

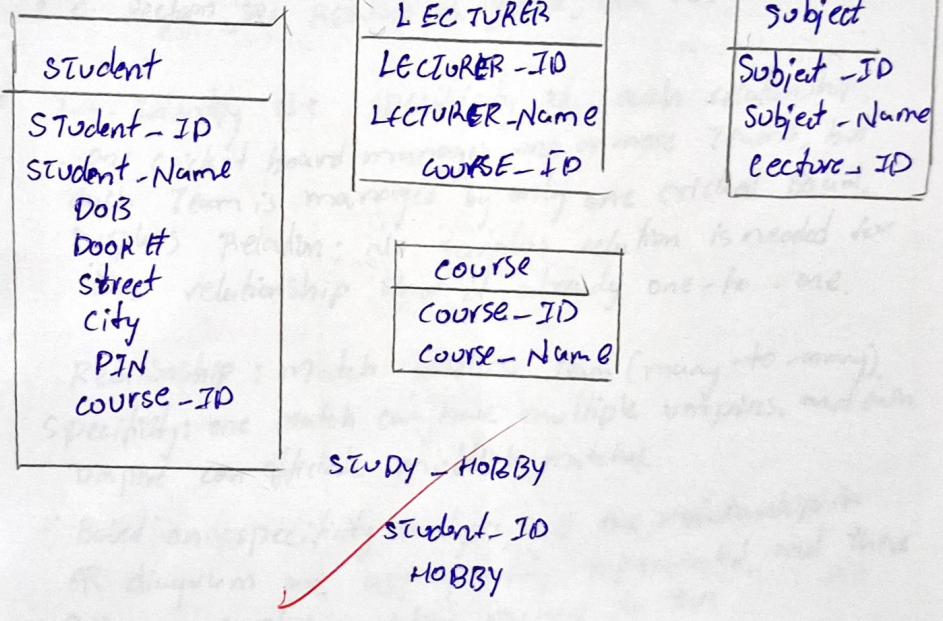


1.2 Convert ER Diagram into Relational model.

Steps for converting ER diagram to table.

- Entity type becomes a table
- A key attribute of Entity type represents table the key
- The multivalued attribute is represented by separate table.
- Derived attributes are not considered in tables

Using three rules you can convert ER diagram to tables and columns & assign mapping.



VEL TECH - CSE	
EX NO.	1
PERFORMANCE (5)	4
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	0
RECORD (5)	5
TOTAL (20)	15

Result: This task helped me to understand the importance of conceptual design in database management using draw model a real-time healthcare system in ER diagram.