

Title: Conceptual design using ER model - Healthcare management system

Tools Required:

http://draw.io (or create.ly) (ERD Plus)

Steps involved in creating ER diagram,

Step 1: Problem understanding & Requirement analysis

* Analyse the real-world application: Healthcare management system.

* Understand the domain: Hospitals, Patients, Doctors, Appointments, Prescriptions.

Step 2: Identify major entities

Entities are core components representing objects or concepts in the system.

Patient

Doctor

Appointment

Prescription

Medicine

Department

Step 3: Identify attributes for each entity

Example attributes:

Entity attributes

Patient: Patient ID (PK), Name, Age, Gender, Phone, Address

Doctor: Doctor ID (PK), Name, Specialization, Contact No, Department

Appointment: Appointment (PK), Patient (FK), Doctor (FK), Date

Prescription: Prescription (ID), Appointment (FK), Diagnosis, Note

Department: Department(PK), Name, Location

Step 4: Define Relationships between Entities

* A Patient books one or more appointments

* A doctor conducts many appointments

* An appointment generates one Prescription

* A Prescription includes many medicines

* A doctor belongs to one department

Step 5: Draw ER diagram using

* Open <https://draw.io>

* choose Blank diagram → click create

* From left Panel, drag the following:

* Use rectangles for entities (Patient, Doctor)

* Use ellipses for attributes

Example relationships:

* Patient (1) - books → (m) Appointment

* Doctor (1) - conducts → (m) Appointment

* Appointment (1) - generates → (1) Prescription

* Prescription (1) - includes → (m) P Medicine

* Save diagram as PNG/PDF and include it on your lab report

Input for ER diagram

Real time healthcare system scenario

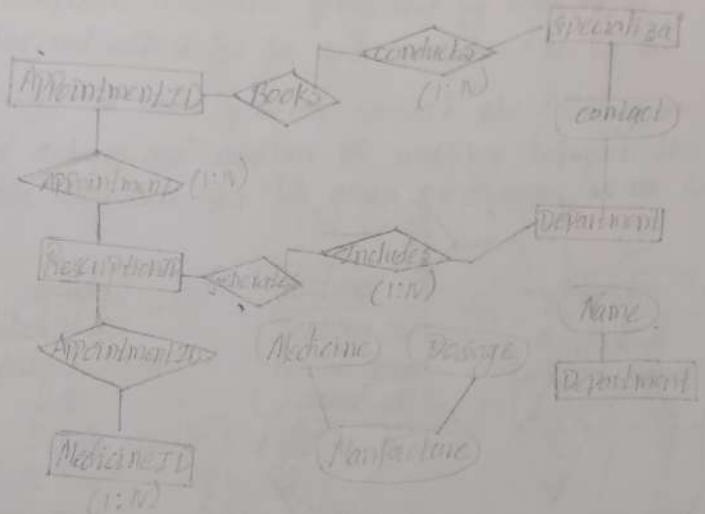
User requirements (Patient management, doctor scheduling, medical records)

Database design rule (Entity-attribute-Relationship identification)

(1) Entity, (2) Attribute, (3) Relationship, (4) Cardinality, (5) Multiplicity

output

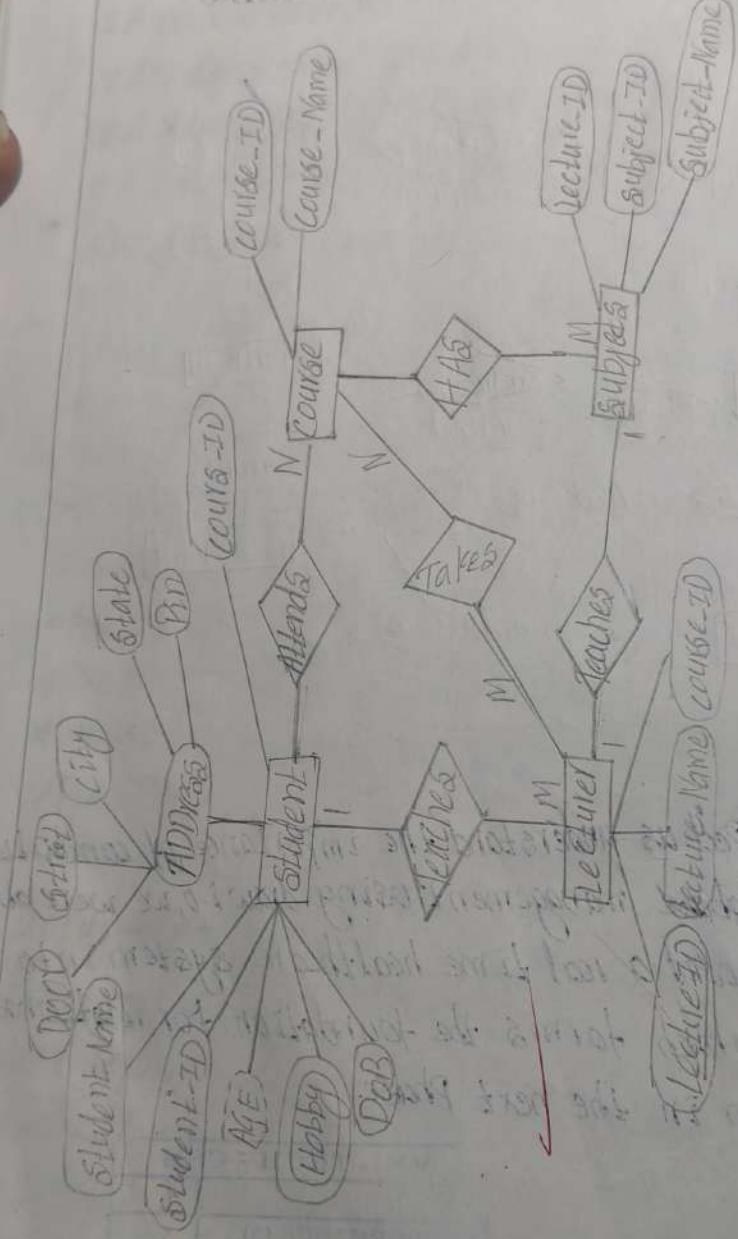
Entity relationship diagram(ERD) that clearly shows:
All identified entities with attributes
All relationships with appropriate cardinalities
Reoutput diagram



Result

The task helped us understand the importance of conceptual design in database management. Using drawio, we were able to visually model a real time healthcare system into an ER-diagram, which forms the foundation for relational schema design in the next phase.

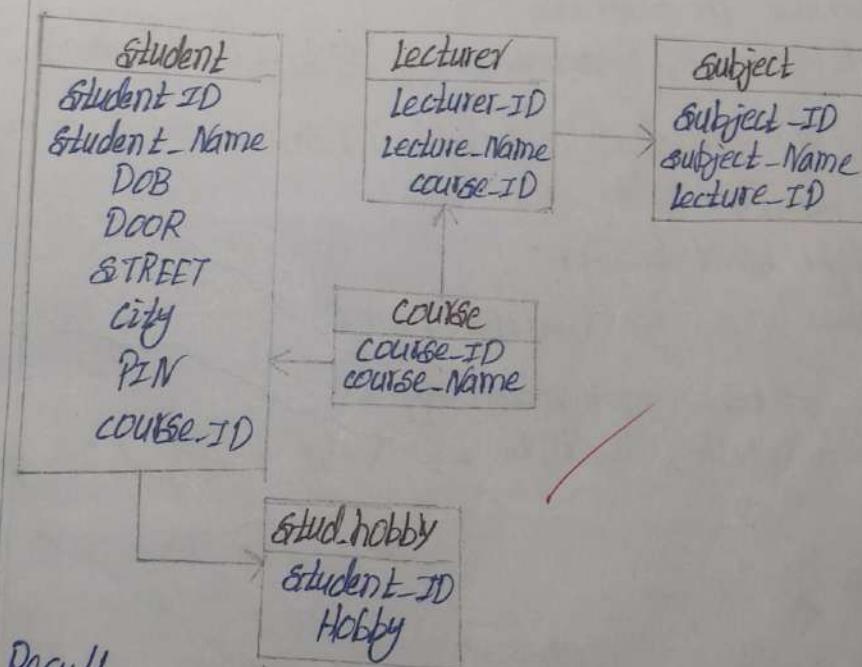
VNL TRCH - CSE	
TYPE	1
PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
AV VOICE (5)	1
ERD (5)	5
(20)	10
MARKS	8



steps for converting the ER diagram to the table 3

- * Entity type becomes a table.
- * All single-valued attribute becomes a column for the table.
- * A key attribute of the entity type represented by a separate primary key.
- * Composite attribute represented by components.
- * Derived attributes are not considered in table.

using these rules, you can convert the ER diagram to table and columns and assign the mapping between the table. Table structure for the given ER diagram is as below:



Result

Thus the converted ER diagram into relation model has successfully created

EX NO.	✓
PERFORMANCE (5)	
DATA ANALYSIS (5)	
VOICE (5)	
COD (5)	
(20)	
DATE	