

21/12/23 Task 1: Conceptual Design using ER model - Healthcare management System

Tools required:

URLs: draw.io (or Creately/ERPlus)

Steps involved in creating ER Diagram

Step 1: Problem understanding & Requirement Analysis

✓ Analyze 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 ID (FK)

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

Prescription: Prescription ID (PK), Appointment ID (FK), Diagnosis, Notes

Medicine: Medicine ID (PK), Name, Dose, Manufacturer

Department: Department ID (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.

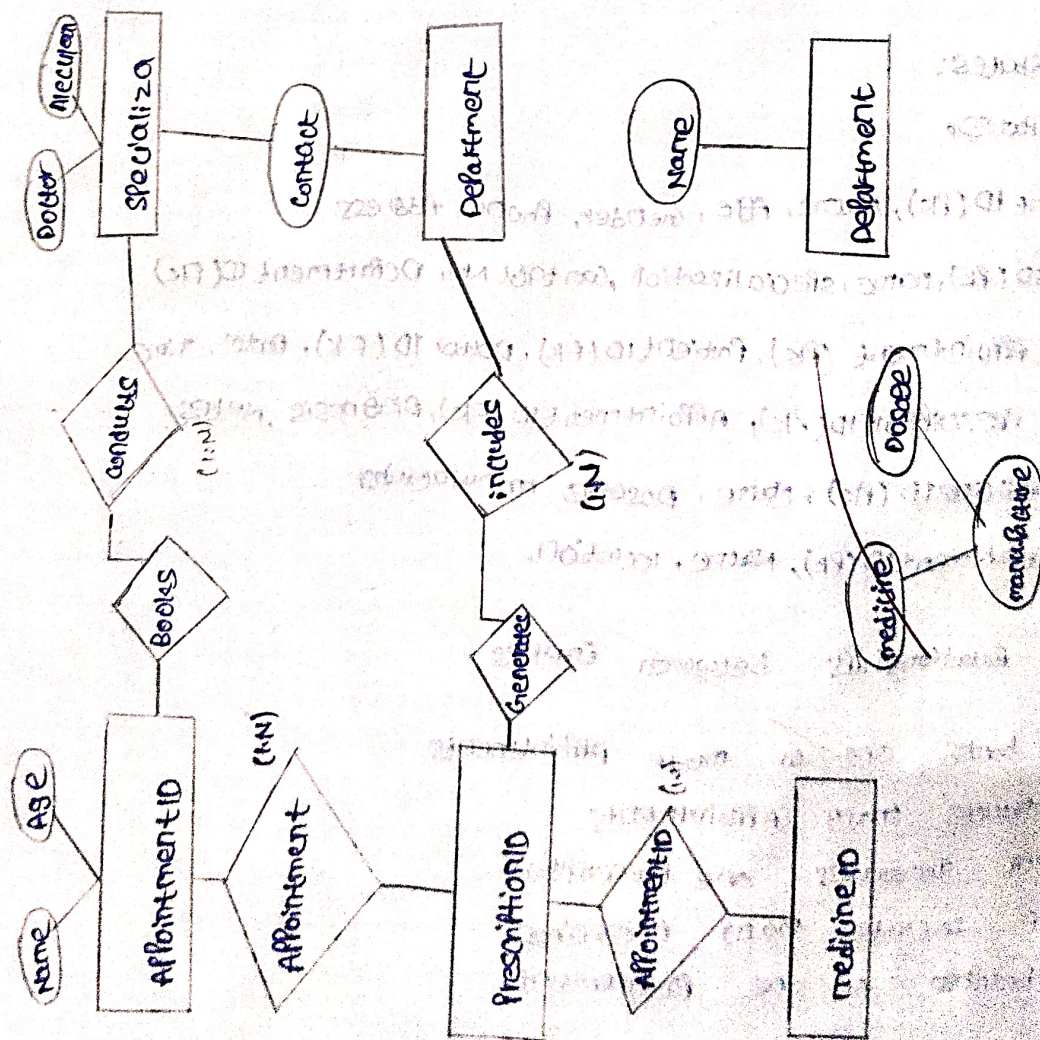
Output:-

Entity Relationship diagram (ERD) that clearly shows:

All identified entities with attributes

All relationships with appropriate cardinalities

Foreign keys and keys marked appropriately.



Steps:- Draw ER Diagram using draw.io

Instructions:

- ✓ 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 (Name, Age, etc.)
- ✓ use diamonds for Relationships (Books, conducts)
- ✓ connect using lines
- ✓ solid lines for Relationship connectors
- ✓ use PK or underline to denote Primary key.
- ✓ use double ellipse for multi valued attributes (if any)
- ✓ use labels such as (1:N), (M:N), etc., to show cardinalities.

Example relationships:

- ✓ Patient (1) - books → (M) Appointment
- ✓ Doctor (1) - conducts → (M) Appointment
- ✓ Appointment (1) - generates → (1) Prescription
- ✓ Prescription (1) - includes → (M) Medicine
- ✓ save diagram as PNG/PDF and include it in your lab report

Input for the ER Design:

Real-time health care system scenario
User Requirements (Patient management, Doctor scheduling, medical records)
Database Design Rules (Entity - Attribute - Relationship identification)

VEL TECH - CSE	
EX NO.	
PERFORMANCE (5)	1
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	5
RECORD (5)	1
VAL (20)	5
CALCULATE	16

Result:- This task helped us understand the importance of conceptual design in database management. using draw.io, we were able to visually model a real-time health care system into an ER diagram, which forms the foundation for relational schema design.