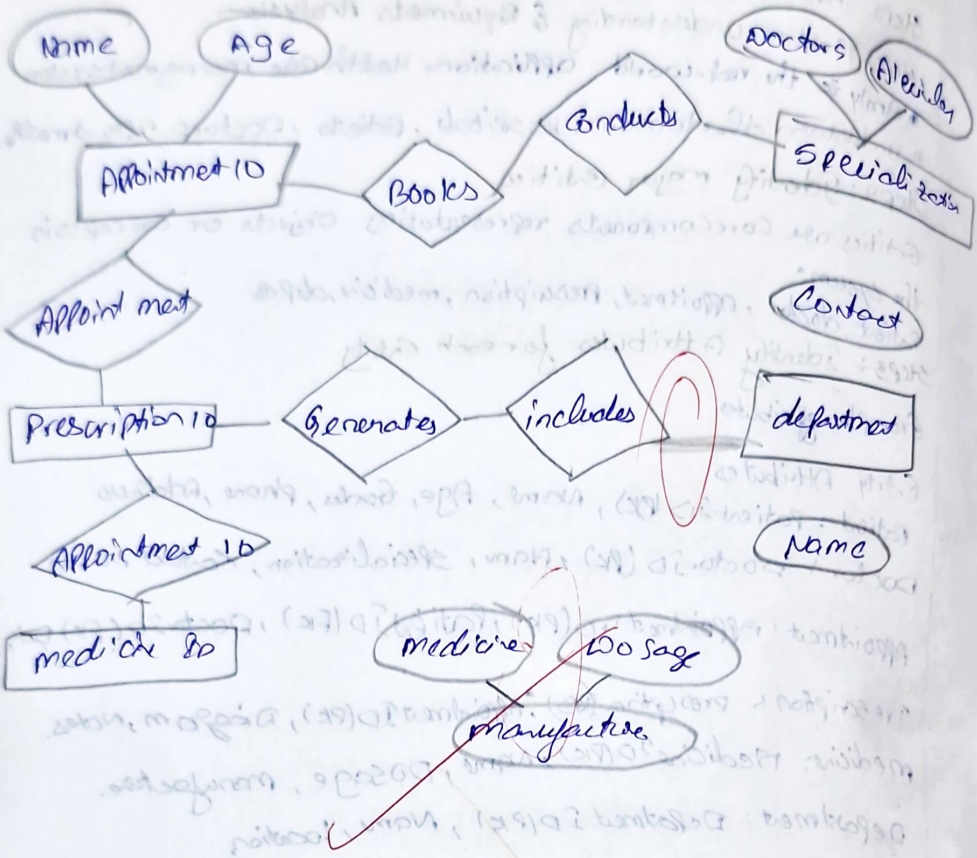
9.8/7/25

Title: Conceptual design using ER model - Health care managment system

Tools Required :
https://draw.io (or Creality/ERD Plus)
Steps involved in Creating ED diagram
Step1: Problem Understanding & Requirments Analysis
* Analyze the real-world application. Health care managment system
* Understand the domain: Hospitals, Patients, Doctors, Appointments.
Step2: Identify major Entities
Entities are CoreComponents representating Objects or concepts in the system:
Patient, doctor, Appoitment, Prescription, medicine, depart
Step3: Identify Attributes for each Entity
Example attributes.
Entity Attributes
Patient: PatientID (PK), Name, Age, Gender, Phone, Address
Doctor: DoctorID (PK), Name, specialization, Contact NO
Appointment: AppointmentID (PK), PatientID (FK), DoctorID (FK) Date, Time
Prescription: prescription ID): AppointmentID (PK), Diagram, Notes.
medicine: MedicineID (PK), Name, Dosage, Manufacture.
Department: DepartmentID (PK), Name, location
Step4: Define Relationship between Entities
* A Patient books one or more Appointments
* A Doctor Conducts many Appointments
* An Appointment generates one Prescription
* A prescription Includes many medicine
* A Doctor belongs to One department.
Step5: Draw ER diagram using draw.io. instructions:
* Open. https://draw.io
* Choose Blank diagram, o
* from left Panel, drag the following.
* use Ellipse for Attributes (Patient Doctor

output diagram:



* use diamonds for relationships (Books, Conducts)
* Connects using lines:
* Solid lines for relationship Connects.
* use double ellipse for multivalued attributes (if any)
* use PK or Underline to denote Primary key.
* use labels such as (1:N), (M:N), etc, to show Cordinality

Examples relationships:

* Patient (1) – books → (M) Appointment
* Doctor (1) – conducts → (M) Appointment
* Appointment (1) - generates → (1) prescription
* Save diagram as PNG/PDF and include it in your lab report

Input for the ER Design::

Real-time healthcare system Scenario

Realtime user Requirments (Patient managment, Doctor scheduling, medical Records)

Data base Design Rules (Entity - Attribute - Relationship identification)

Entity Relationship diagram (ERD) that clearly shows:

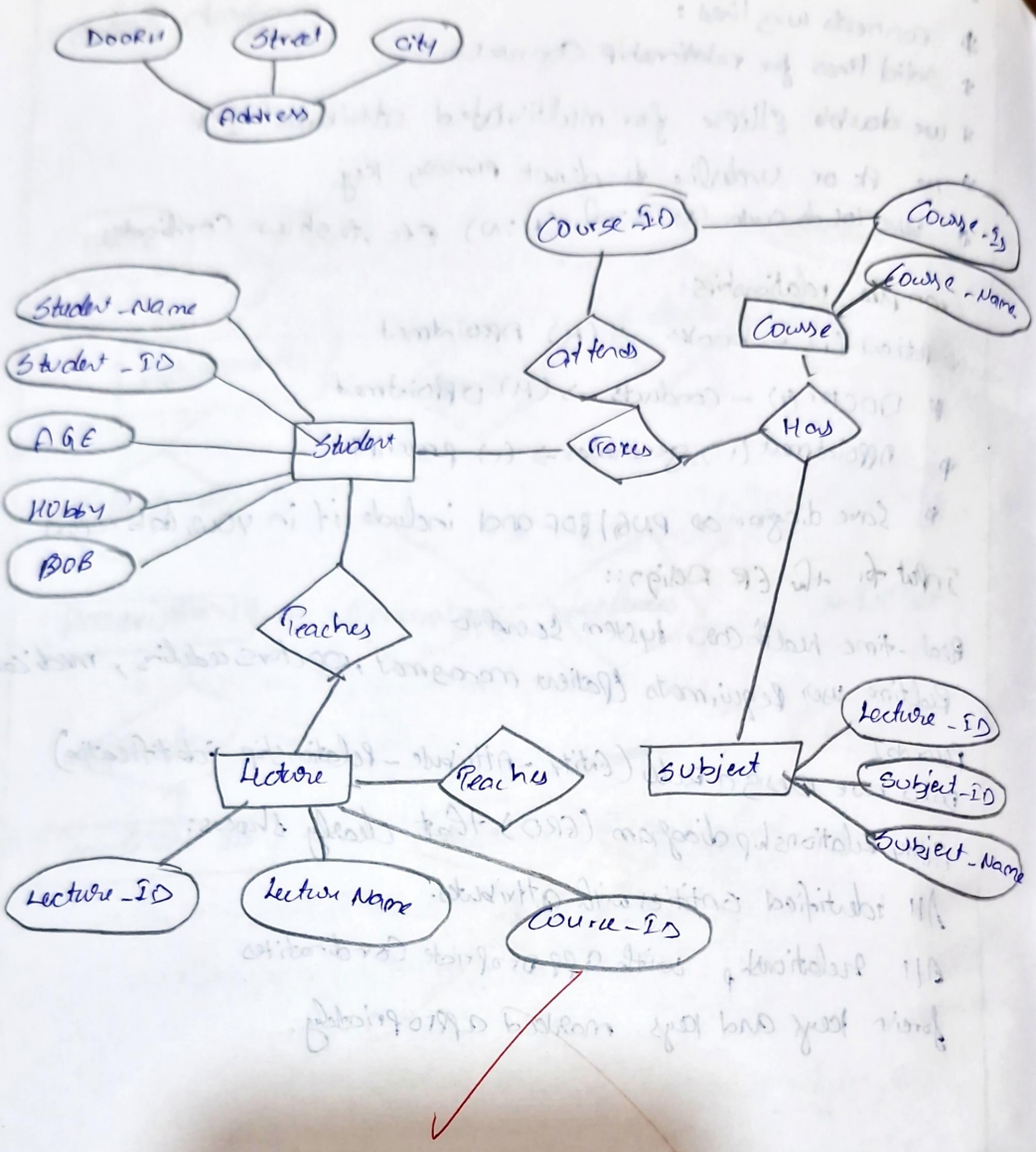
All identified Entities with attributes.

All relationship with appropriate Cardinalities

foreign keys and keys marked appropriately.

Result:

This task helped us understand the importance of the Conceptual design in data base managment. using draw.io, we are able to visualy model a real time health care system into an ER diagram which forms the foundation for relational Schema design in the next phase.


DoorN
Street
City
Address
Course_ID
Course_ID
Course_Name
Course
Student_Name
Student_ID
AGE
HOBBY
BOB
Student
Attends
Takes
Has
Teaches
Lecture
Teaches
Subject
Lecture_ID
Subject_ID
Subject_Name
Lecture_ID
Lecture Name
Course_ID

1.2 Convert EE Diagram into Relational model.

Steps for converting the EE diagram to the table

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

Using these rules. you can convert the EE diagram to tables and columns and assign the mapping between the tables and columns and assign the mapping between the tables. Table Structure for the given EE diagram is as below.

Student

Student_ID
Student_NAME
DOB
DoorH#
Street
city
State
pin
Course_ID

Lecture

Lecture_ID
Lecture_NAME
Course_ID

Subject

Subject_ID
Subject_NAME
Lecture_ID

Course

Course_ID
COURSE_NAME

STUD_Hobby

Student_ID
Hobby

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

Result: The Program is implemented Successfully