29.08.2025

Task 1.1: Computal Design using ER Model - Healthcare Management system

Tools Required :

https : // draw . in (or creately / EDR plus).

Steps involved in creating ER Diagram

step 1 : Problem Understanding a Requirement Analyst

Analyze the Real - world application :

Healthcare management system.

Understand the domain : Hospitals patients Doctors Appointment descriptions.

step 2 : Identify Major Entities

Entities are core components representing objects -(a) concepts in the system.

Patient

Doctor

Appointment

Description

Medicine

Department.

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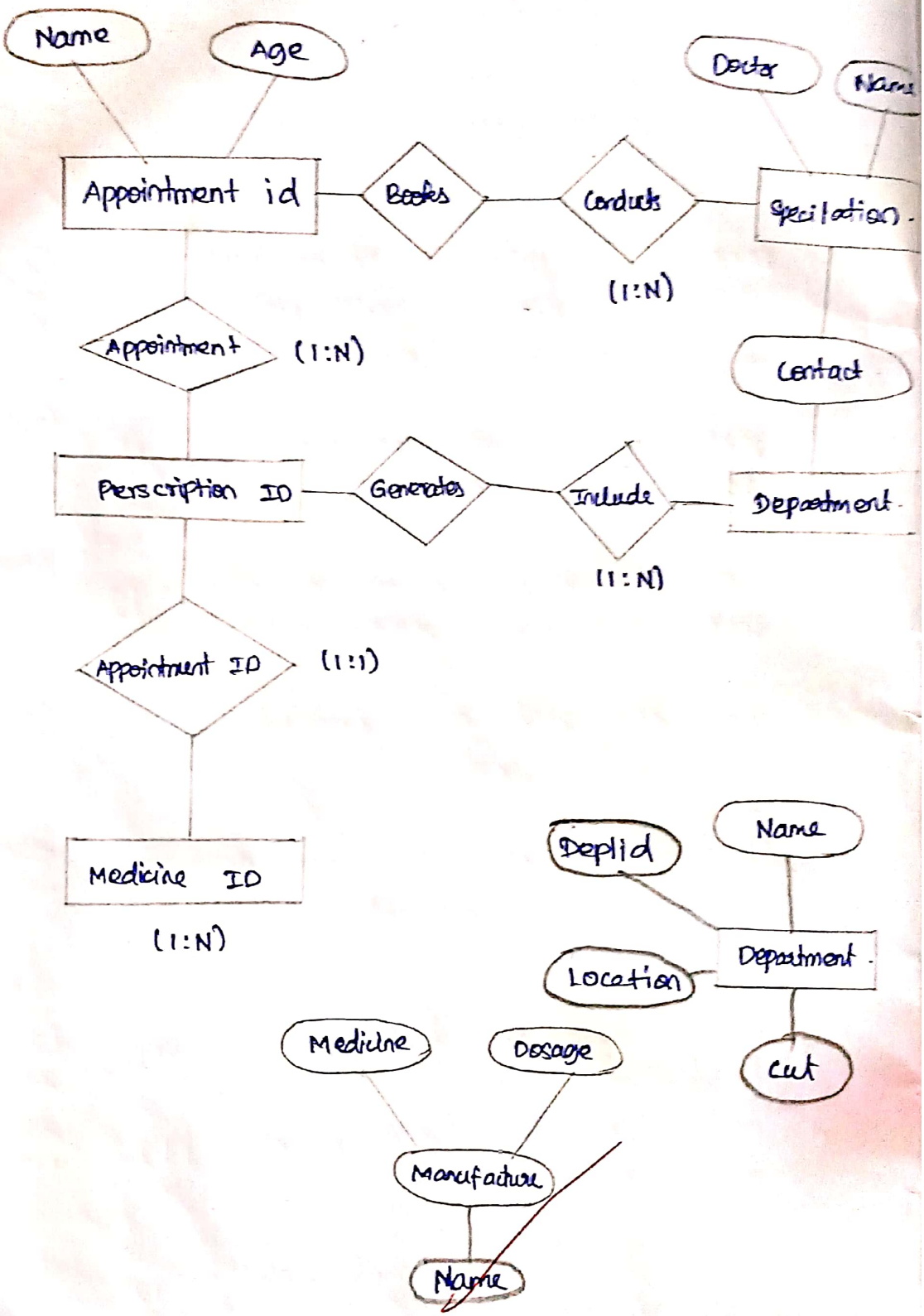
Output diagram :



step 3 : Identify Attributes for each entity

Example attributes

Entity Attributes

Patient : Patient (DCPK)... Name, age, gender, phone, address.

Doctor : Doctor ID (PK) ... Name, specialization, contact no, department ID (FK)

Appointment : Appointment ID (PK), patient ID (FK) Doctor ID (FK), date, time.

Description : Description ID (PK), Appointment ID (FK), diagnosis, Notes.

Medicine : Medicine ID (PK) ... Name, dosage, manufacture.

Department : Department ID (DK), Name, location.

step 4 : Define Relationships between entities.

A patient books one or more appointments.

A doctor conducts many appointments

An Appointment generates one description

A Doctor belongs to one department.

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Step 5: Draw ER diagrams using draw.io Instruction

open https://draw.io.

choose blank diagram → click create.

From left pannel, drag the following.

Use rectangle for entities (patient, doctor).

Use Ellipse for attributes (Name, age, etc).

Use diamonds for relationships (Books, conducts)

Using lines: connect.

solid lines for relationship connectors.

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.

Example Relationship:

Patient (1) - Books → (M) Appointment.

Doctor (1) - conducts → (M) Appointment.

Appointment (1) - generates → (1) pescription.

Prescription (1) - includes → (M) Medicine.

save diagram as PNG / PDF and include it in your lab report.

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Input for an ER Design :

Real - time health care system scenario.

User requirements (patient management, doctor scheduling, medical records).

Database design rules (Entity attributes relationship identification).

Output :

Entity Relationship diagram (ERD) that clearly shows :

All identified entities with attributes.

All relationships with appropriate cardinalities

Foreign keys and keys marked appropriately

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PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	1
RECORD (5)	—
TOTAL (20)	11
SIGN WITH DATE	

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RESULT AND ANALYSIS (3)	
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RECORD (4)	
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Result :

This task helped us understand the importance of conceptual design in database management using draw io, up are able to usually model a real - time heath care system into a ER - diagram which forms foundation for relational schema design in the next phase.

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8-07-2025

Task 1.2 : Convert the ER Diagram INT Relational

Aim: To Design the ER Diagram from the School Relational model.

Step for converting ER diagram to the relation of model :

* Entity type become a table.
* All single - value attributes become a column for the table.
* A key attribute of the entity type represented by primary key.
* The multi valued attribute is represented by a separate table.
* Composite attribute represent by component.
* Derived attributes are not considered in the table.

Using these rules, you can convert the ER Diagram to tables & unbalanced design the mapping between the tables.

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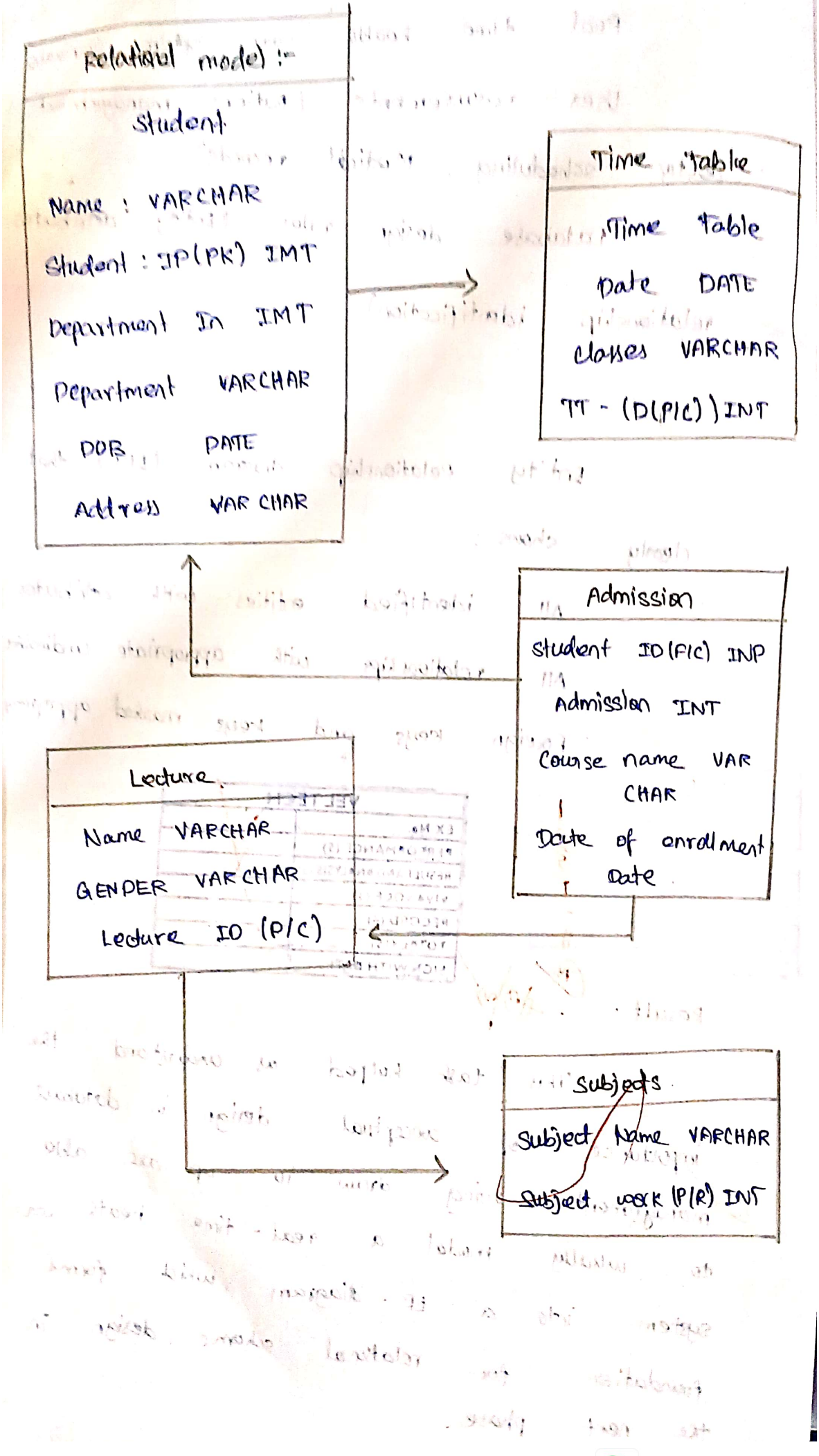

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Result : The relation model for the given ER diagram was successfully converted.