Name - Md. Rakib Hasan.

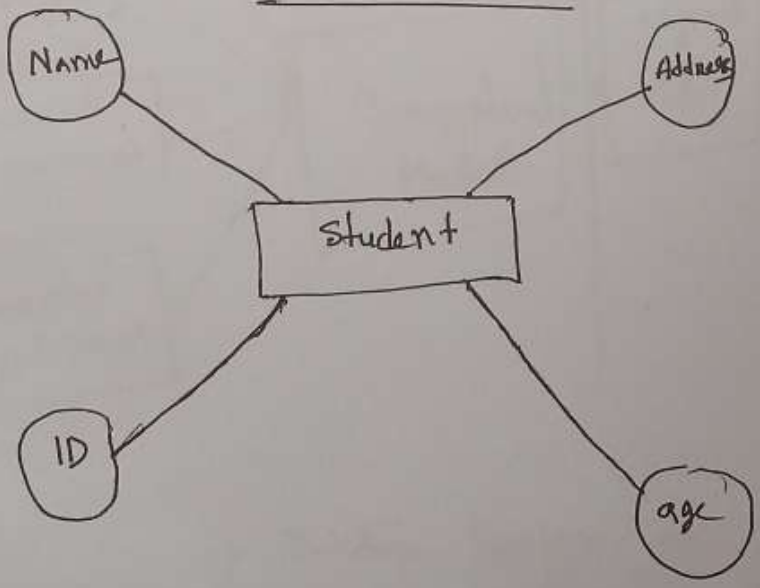
ID - 221608021

Course Code - CSI-221 . (DBMS)

Answer to the Question - 1.

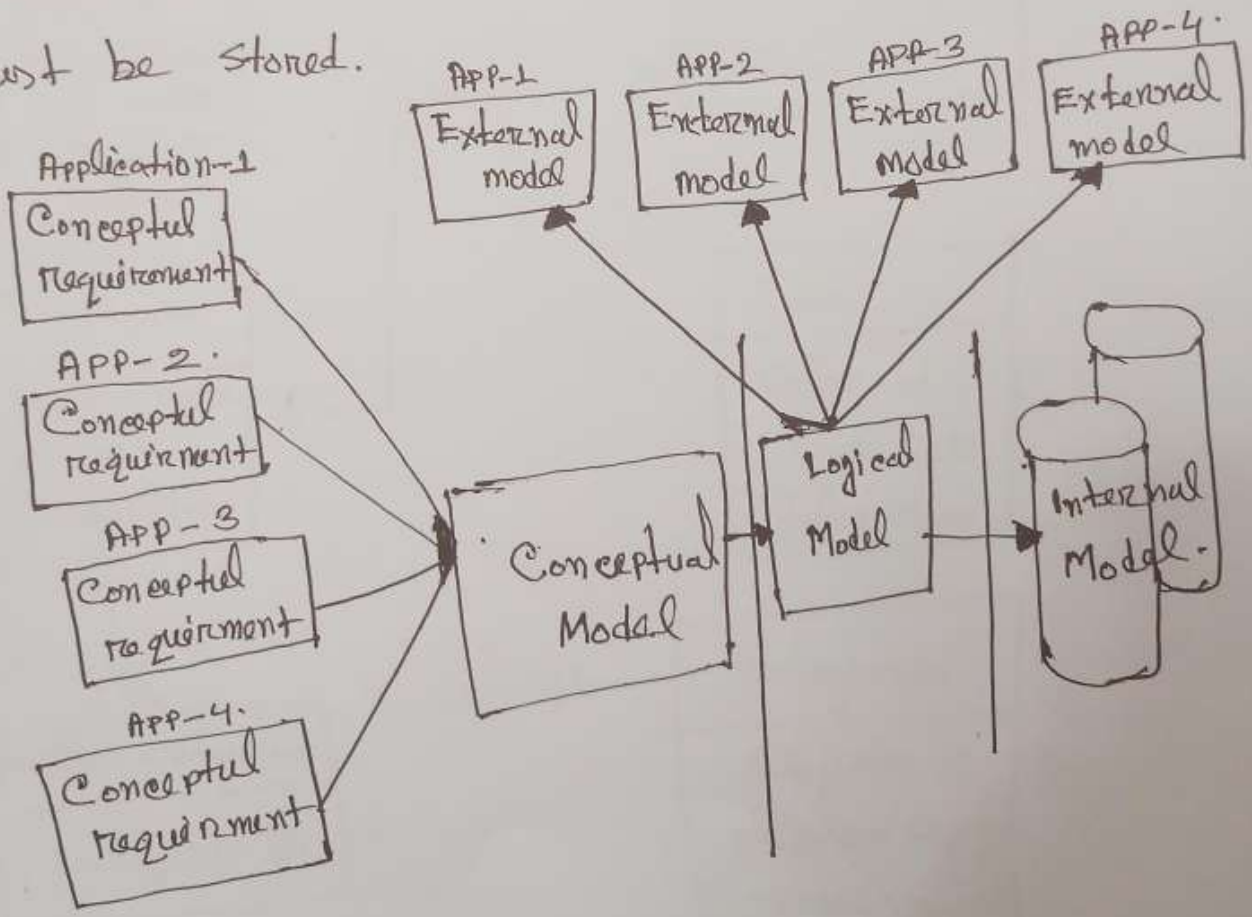
@ Ans: ER Diagram Example - Suppose we design a School Database, the Student will be an Entity with Attributes like. Address, Name, ID, Age, Etc. The Address can be Another Entity. with Attributes like city, street name, pin Code, Etc and there will be a relationship between them.

ER - Diagram



(b) Ans:

DB-Design: Database Design is collection of processes facilitate the designing, Development, Implementation And maintenance of Enterprise Data management system. properly designed database are Esy to maintain, Improves. Data. Consistency And are Cost Effective in terms of Disk storage. space. The Database ~~dising~~ designer Decides how the data Elements Correlate and what Data must be stored.

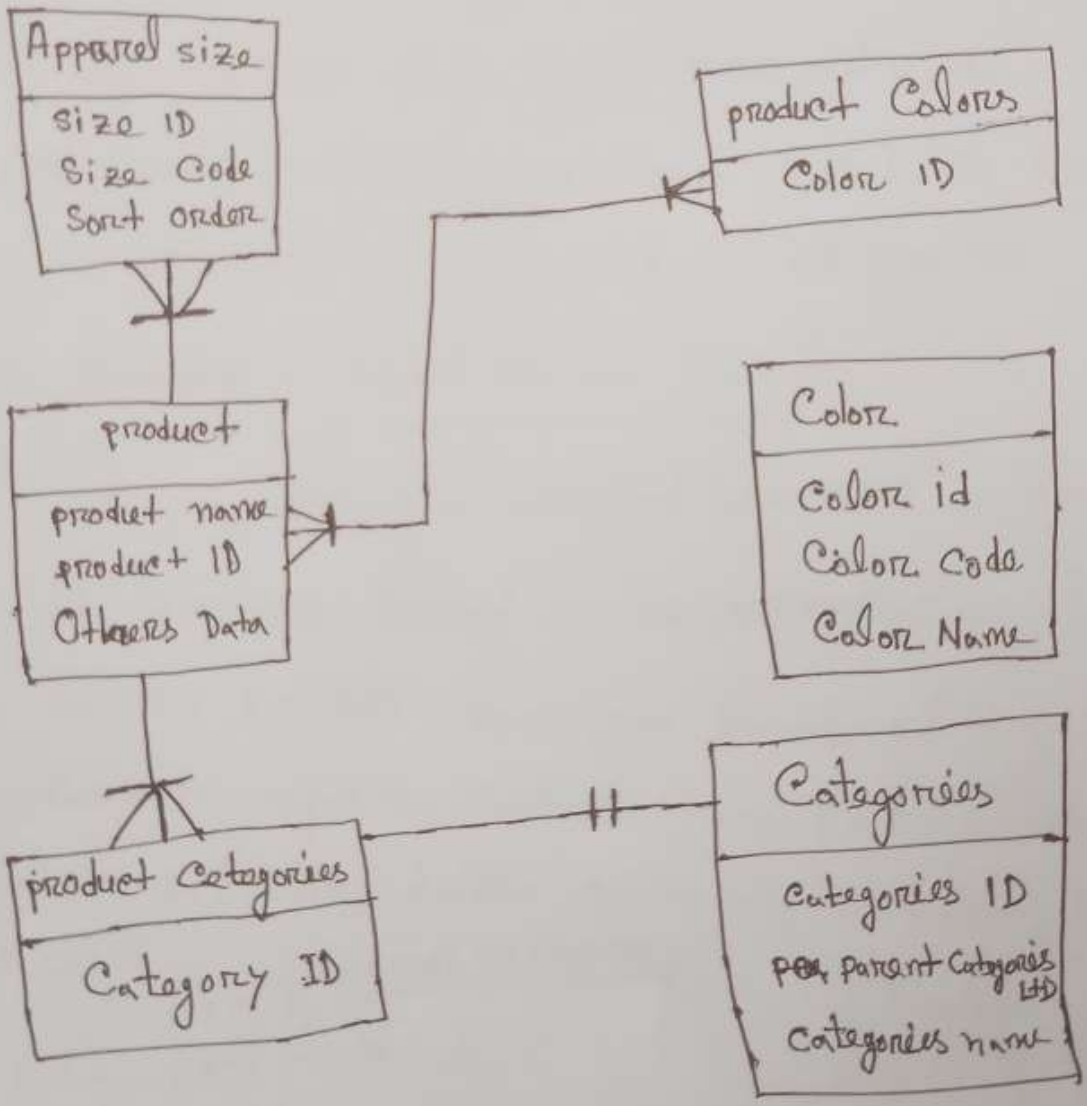


⇒ Database Design process.

1 (c) Ans:

Entity - Relationship Model :

Er - Diagram Stands for Entity Relation ship Diagram, Also known as ERD is a diagram that displays the Relationship of Entity Set Stored in a data base. In Other word. ER Diagram help to Explain the Logical Structure of Data bank.



⇒ Entity Relationship model Diagram Example.

Answer to the Question No - 2

2 (a)

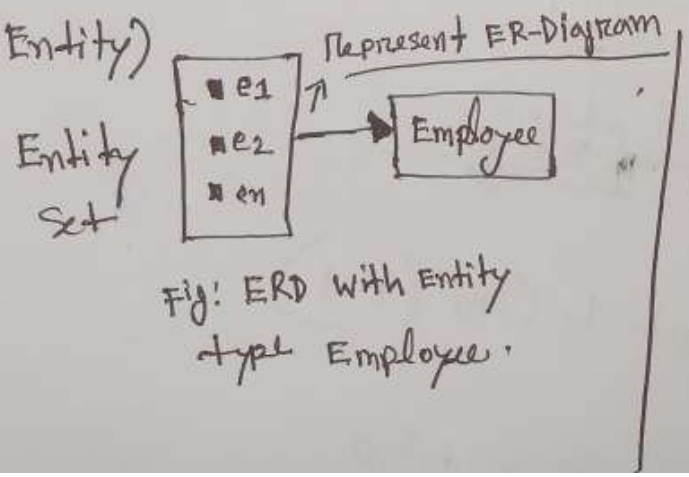
Ans: **ER data model:** E-R data full meaning means are Entity Relationship Data Model. The Entity relationship (ER) Data model has Existed for Over 35 years. It is ~~well~~ well suited to data Modelling for use with databases because it is fairly abstract and is Easy to discus and Explain. ER Models are Readily translated to relations. ER Models also Called an ER Schema, are Represented by ER diagrams.

ER Modelling is based On two Concepts:

→ Entities, defined as tables that hold specific information (data) ~~that~~

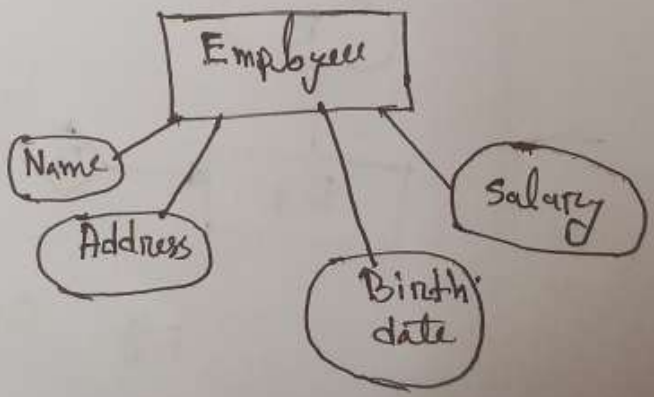
→ Relationships, Defined as the associations or interactions Between Entities. Here is an Example of How these two Concepts might be Combined in an ER Data model:

Prof. Ba (Entity) teaches (Relationship) the Database system Course Entity)



Represent ER-Diagram

Fig: ERD with Entity type Employee.



2

(b) Ans: Mapping Constraints: ⇒ A mapping Constraint is a data

Constraint that Expresses the Number Of Entities to ~~with~~ which Another Entity Can be related via a relationship set.

⇒ It is most useful in describing the relationship sets that involve more than two Entity set.

⇒ For binary relation set R on an Entity set A and B, there are four possible mapping Cardinalities. These are as follow -

1. one to one (1:1)
2. One to many (1:m)
3. Many to one (m:1)
4. Many to Many (m:M).

⇒ one to One: In one to one mapping, an Entity in E_1 is Associated with at most on Entity in E_2, and an Entity in E_2 is Associated with at most one Entity in E_1.

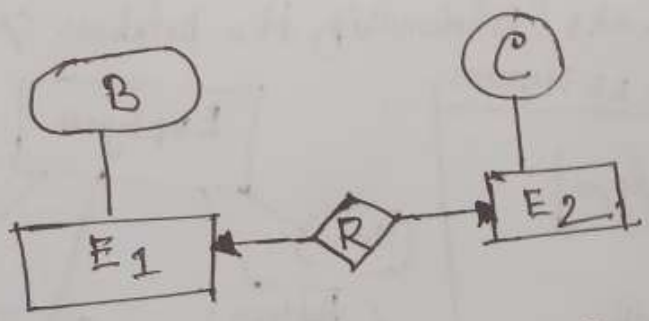
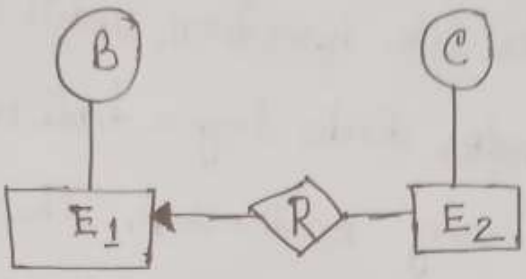


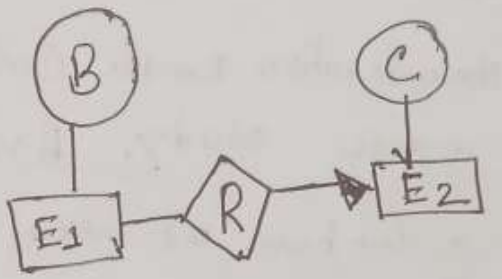
Fig: Ont to One (1:1)

(2) (b)

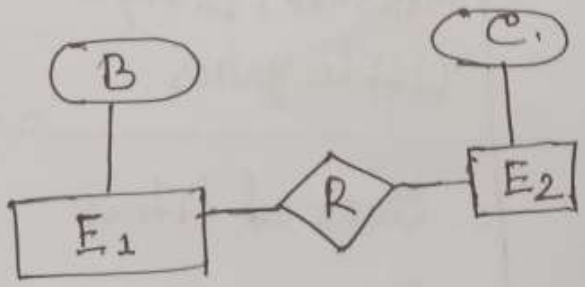
One to many : One to many Mapping, an Entity in E_1 is associated with any Number Of Entities in E_2, and an entity in E_2 is associated with at most one Entity in E_1.



⇒ Many to One:



⇒ Many to Many : In many to many mapping an Entity in E_1 is associated with any number of Entites in E_2, and An Entity in E_2 is associated with any number of Entitys in E_1



Answer to the Question No - 03

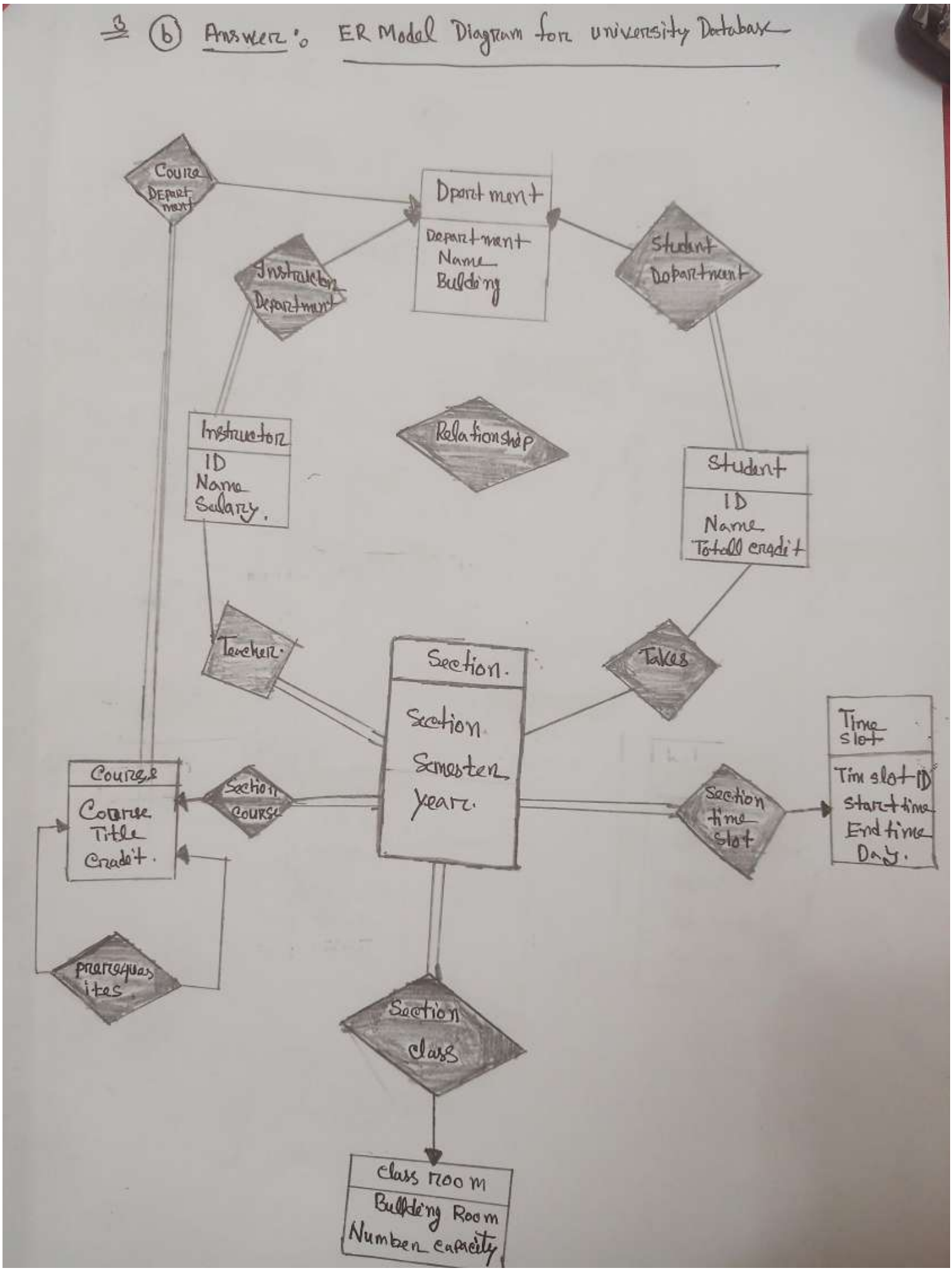
3. (a) Ans: Normalization: Normalization is a database design technique that reduces data redundancy And eliminates undesirable - Characteristics like Insertion, Update And Deletion Anomalies. Normalization rules divides larger table in to samaller tables And links them using relationship. The purpose of Normalistion. in SQL is to Eliminate redundant (Repetitive) data. And Ensure data is stored logically.

Database Normalization Example Canbe easily understood with. Help of a case study. Assume, a video ~~bib~~ library maintenance a database of movies rented out.

Full Name	physical Address	Movies Rented	Salutation.
Janet Jones	First Street plot No 4	pirates of the caribbean, Clash of titans	Ms.
Robert phil	3rd Street 34	forgetting Sarah Marshal, Daddy's Little gairs	Mr.
Robert phil	5th Avenue	Clash of titans	Mr.

Fig: Goals Normalization.

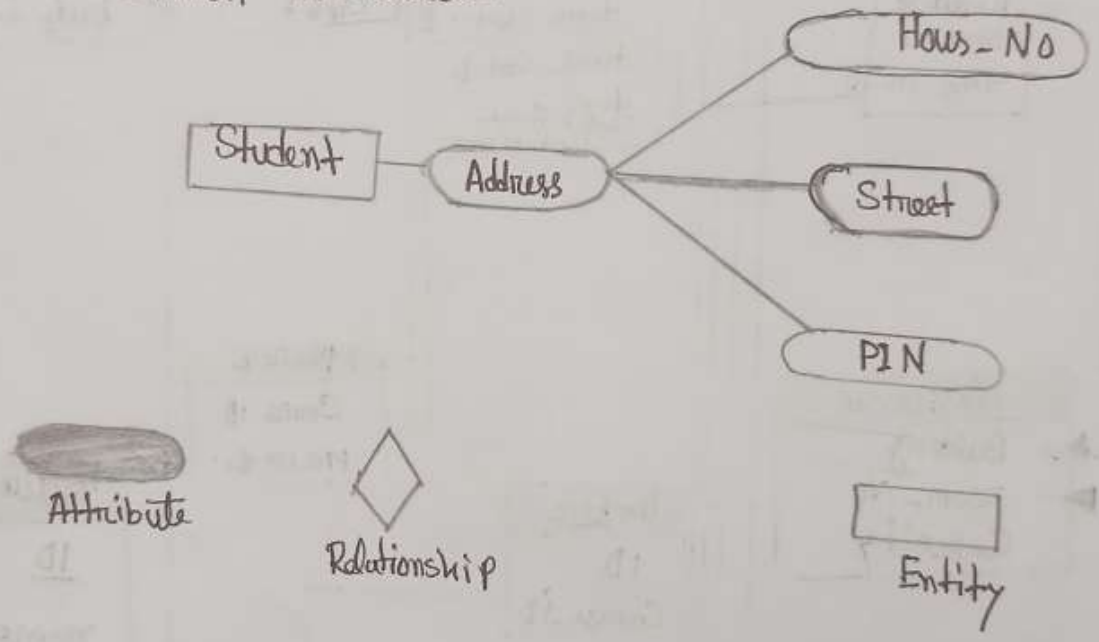
3 (b) Answer: ER Model Diagram for university Database



Answer to the Question No – 4

4-(a) Ans: **Composite Attribute :**

In this article, we well learn About Composite Attribute in DBMS Sometime an Attribute Entity may be further broken in to Smaller attributes and all Attributes can be generalized in to a Common Attribute.



→ Key Attributes
→ Multi-value Attributes.
→ Drived Attributes.

(4) (b) Answer: Schema Diagram for University Database: