DATE: 28/08/25 Task (1) Conceptual Design Using ER Model

Aim: Conceptual Design using ER model for college management system using draw.io.

Tools Required:

Steps involved in creating ER diagram

Step - I : Problem understanding and Requirement Analysis.

- Analyse the real-world Application: College management system.
- Understand the domain: Student, Admission, TTmetable, Lectures, Subject.

Step - 2

Entities are more components representing objects or concept in the system:

Student
Admission
Time table
Lecture
Subject.

Step-3 Identify Attributes for each Entity

Example attributes:

Entity Attributes

Student: Student ID, Name, Address for each Entity.

Admission: Student number, Date of enrollment, course name.

Time-table: Time, Date, teachers name, subject.

Lecture: name, email, address.

Subject: Subject code, subject unit.

Step 4:- Define Relationships between entities

- A student enrollement one or more subjects.
- A course is taught by one ore more professors.
- A professor belongs to one Department.
- A course has many Assignments.
- A department offers many courses.

Step 5:-

Instructions:

* Open https://draw.io
* choose Blank diagram the following
* from left panel, drag the following.
* Use rectangles for entities (student, admission, timetable, lecture).
* use ellipses for attributes (name, B.date, etc).
* Use diamonds the Relation (task admission)
* connect using lines.
* Use labels such as (1:N), (4:N), etc., to show cardinalities.

Input for the ER design

Read the college management system.

User requirements: (College managment, lecture, timetable, student records).

Database Design Rules (Entity Attribute) - Relationship identification

Outputs:

Entity Relationship Diagram (ERD) that clearly shows

All identified entities with attributes.

All relationships with appropriate Cardinalities.

foreign keys and keys marked appropriately.

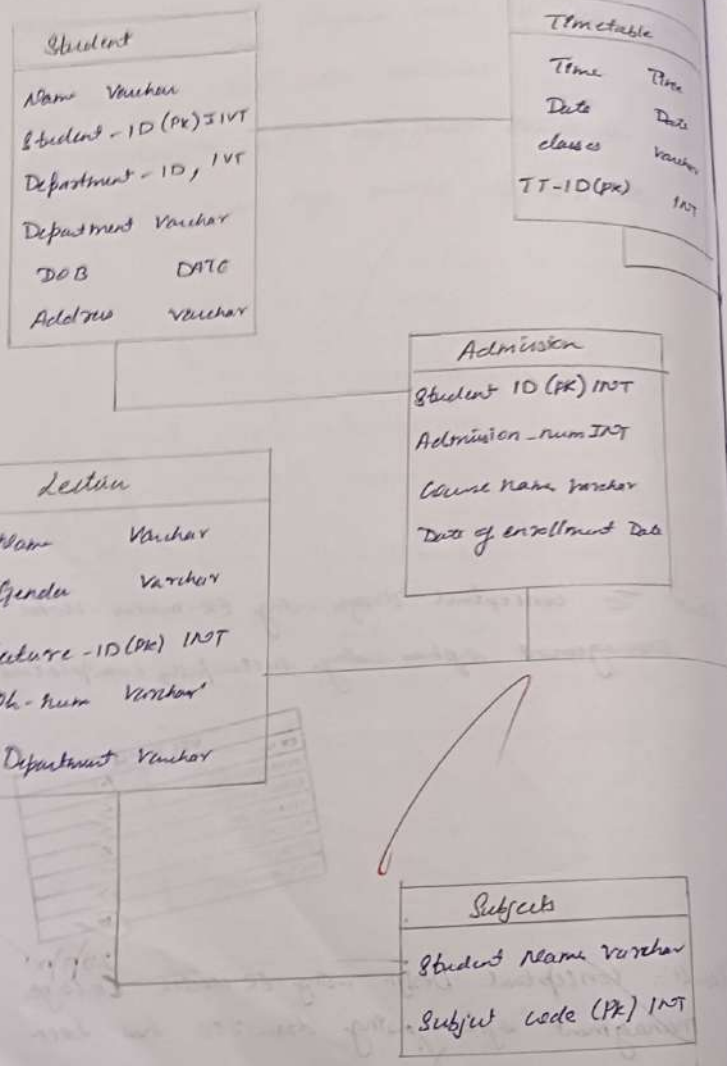
Result: To conceptual design using ER-model - Hotel management system using successfully completed.

VEL TECH	
EX No.	7
PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	5
RECORD (5)	5
TOTAL (25)	25
SIGN WITH DATE	

28/11/24

Result: Conceptual Design using ER Model College management system using draw.io has been implemented successfully and task is done.

Relational Model:



Task (1.b) Convert ER Diagram into Relational Model.

Aim:- To convert the ER diagram into relational model.

Steps for converting ER diagram to the relational model

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

Using these rules you can-convert the ER diagram & column and assign the mapping between the table.

VELTECH	
EX No.	1.2
PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	5
RECORD (5)	-
TOTAL (25)	15
SIGN WITH DATE	20/1/25

Result: The relational model for the given ER diagram was successfully convated.