

Task (1) Conceptual Design using ER Model

28-07-2025

Aim: Conceptual Design using ER Model for college management system using drawio

Tools Required:

Steps involved in Creating ER Diagram

Step-1 problem Understanding & Requirement

Analysis.

- Analyze the real-world Application: college management system.
- Understand the domain: Student, Admission, Timetable, Lecturer, Subjects

Step-2

Entities are more Components representing objects or Concept in the System.

student
Admission
Timetable
Lecture
Subject

Step-3 Identify Attributes for each Entity

Example attributes:

Entity Attributes

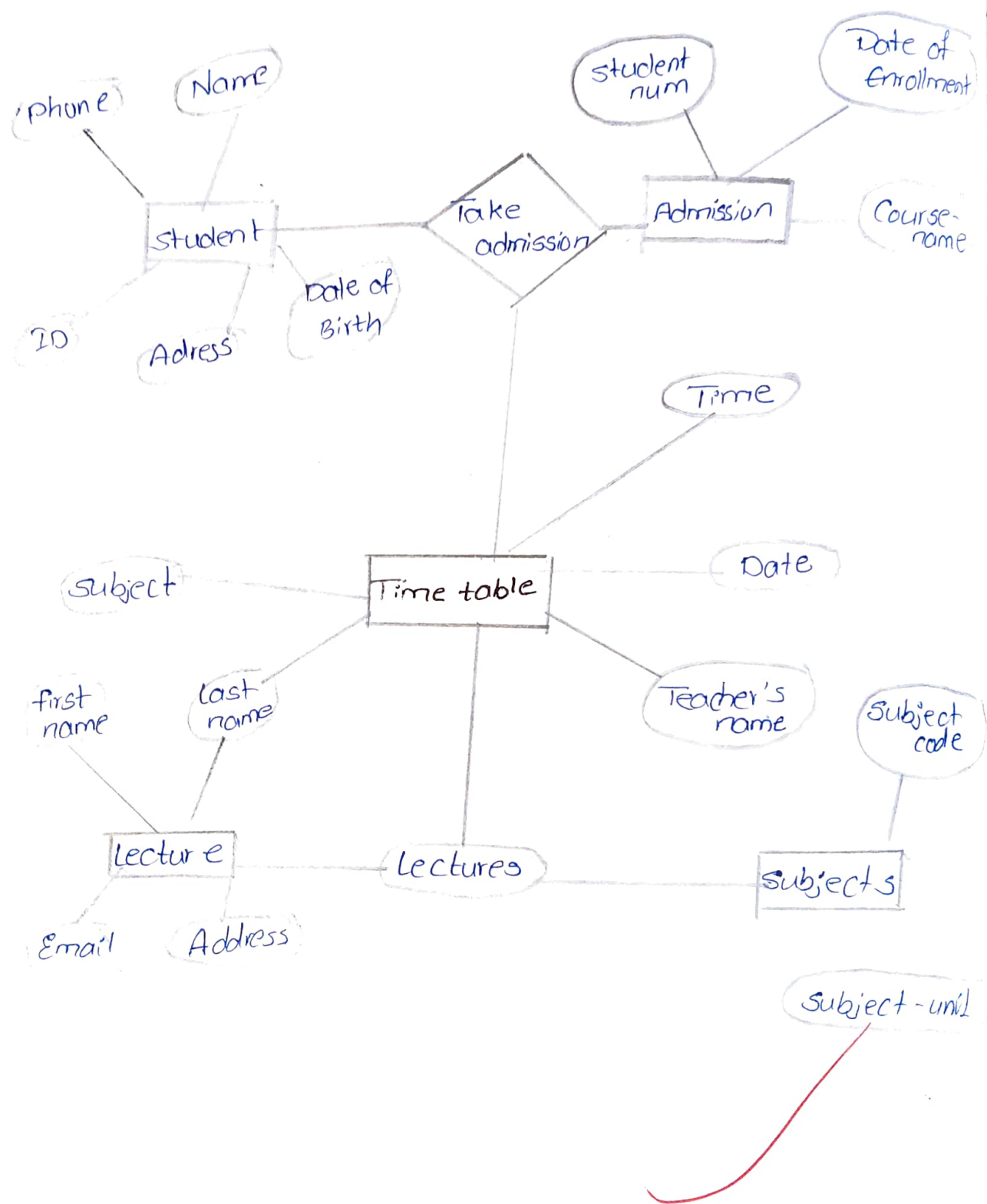
student: student ID, Name, Address for each Entity

Admission: student number, Date of Enrollment, Course name.

Time table: Time, Date, teacher's name, Subject

Lecture: name, Email, address

Subject: Subject code, Subject unit.



step-4 Define Relationships between Entities

- A student Enrollment one or more Subjects
- A Course is taught by one or 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, Bdate, etc.)
- * Use diamonds the Relationships (taskadmissions)
- * Comment using lines
- * Use labels such as (1:N), (M:N), etc. to show Cardinalities

Input for the ER Design

Real-time college management system.

User requirements: (college management, lecture, timetable, student records)

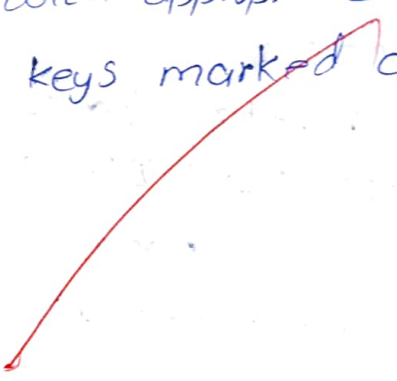
Database Design Rules (Entity Attribute - Relationship identification)

Output:

Entity Relationship Diagram (ERD) that clearly show:

All identified entities with attributes .

All relationships with appropriate cardinalities
foreign keys and keys marked appropriately



8/5

Result: Conceptual Design using ER model for college management system using draw: it has been implemented successfully and task is done.

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
PERFORMANCE (S)	8
RESULT AND ANALYSIS (S)	8
VIVA VOCE (S)	1
RECORD (S)	1
TOTAL (20)	11
SIGN WITH DATE	

29/12/21

Result: The relational model for the given ER Diagram was successfully converted

Relational model:

