

Date: 27-07-2025

Page - 1

Title - conceptual Design using ER model  
- School management system.

Aim: To make Conceptual Design using ER model - School management system

Step 1: problem understanding requirement analysis

Analyze the real-world application  
Schools management system understanding  
the domain, student, teacher, class,  
subjects, examinations, results.

Step 2: Identify major entities  
entities are core components represent  
object or concept in the system.

\* Student

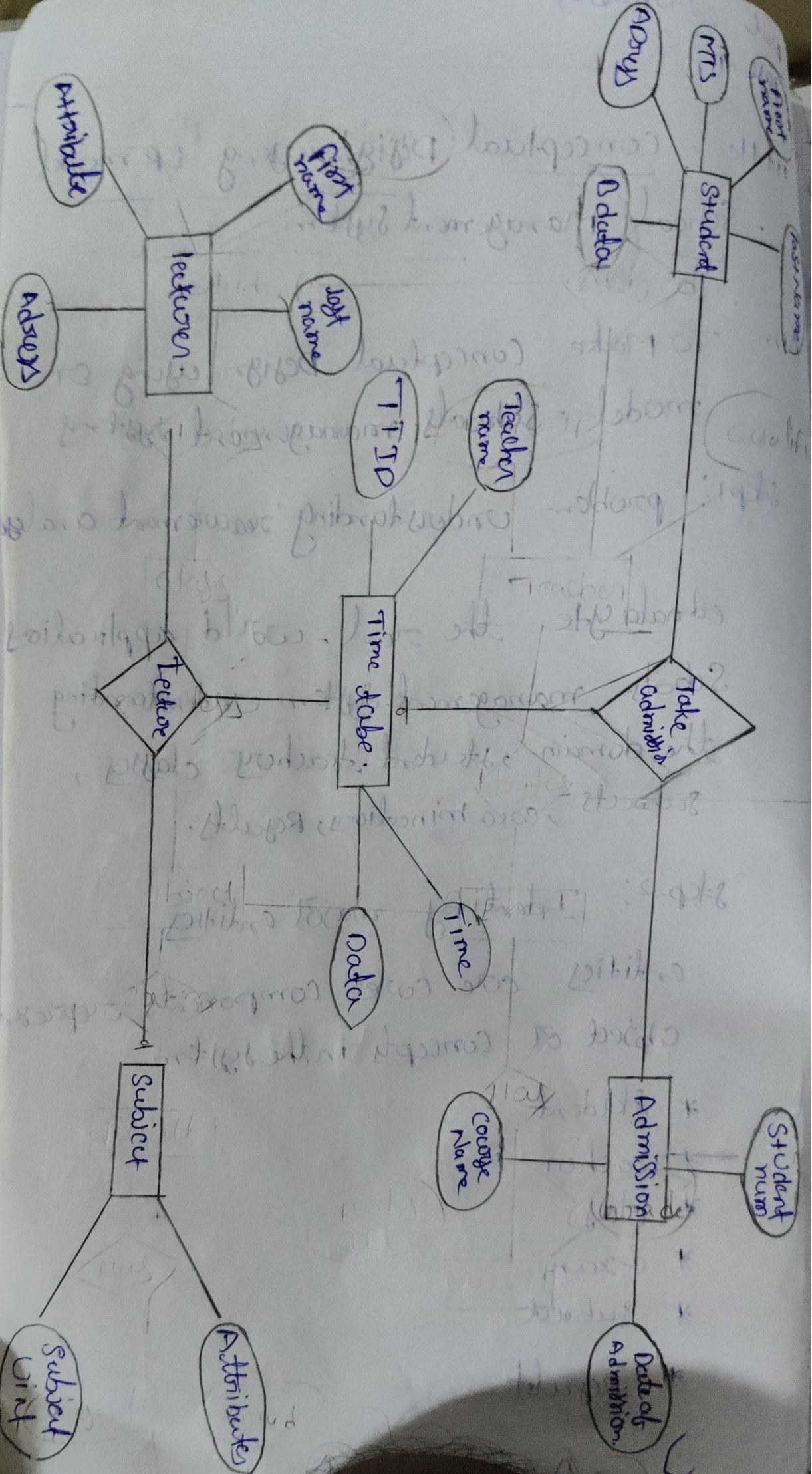
\* Teacher

\* Class

\* Exam

\* Subject

\* Result



Step-3 : Identify attributes for each entry

Entity

Attributes

Student

Student RD(RK); Name, age  
gender, phone, address, class

Teacher

RD

Teacher RD(DK); name qual-  
ification, contact no

class

class RD (RK). class name.  
Section.

~~Subject~~

Subject ID, Exam ID, Date  
Time

Result:

Result ID, Subject ID, Grade

Step-4 : Define Relationship between entities

\* A student is assigned to one class

\* A teacher teaches many subjects

\* A class includes many students

\* A subject is assigned to one teacher

Step-5:- Draw ER Diagram using draw io introductory.

- \* From the left panel.
- \* Using rectangles for entities
- \* Use ellipses for attributes
- \* Use diamonds for the relation
- \* Connect using solid lines.

Example ~~Relation ships~~:

- \* Class (1) - includes  $\rightarrow$  (M) student
- \* Teacher (1) - teaches  $\rightarrow$  (M) subject
- \* Subject (1) - has  $\rightarrow$  (M) exam
- \* Student (1)  $\rightarrow$  marks  $\rightarrow$  (M) marks

Result:- For the ERD link between student and exam.

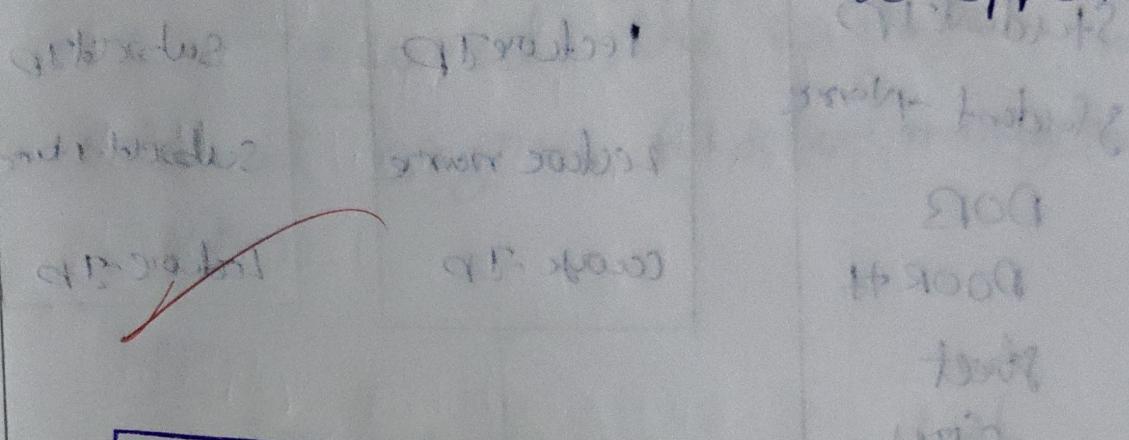
Input for ER design

~~Real time school system scenario - use requirement: Student Record, teacher Assign class management, Exam, tracking resource management~~

Database Design Rule: identify entities, attributes, relations, cardinality, keys.

out put :- entity - Relationship Diagram

(ER) clarity shown. All indented entities with using attributes all relationship with correct and named approach



VELTECH	
EX No.	19
PERFORMANCE (5)	5
RESULT AND ANALYSIS (3)	5
VIVA VOCE (3)	2
RECORD (4)	4
TOTAL (15)	11
SIGN WITH DATE	28/10/17

VELTECH	
PERFORMANCE (5)	5
RESULT AND ANALYSIS (3)	5
VIVA VOCE (3)	2
RECORD (4)	4
TOTAL (15)	11
SIGN WITH DATE	28/10/17

Result:- Hence the entity relation diagram of school database management system was successfully drawn

Task-1.2 Convert the ER diagram into Relational Diagram

### Relational Diagram

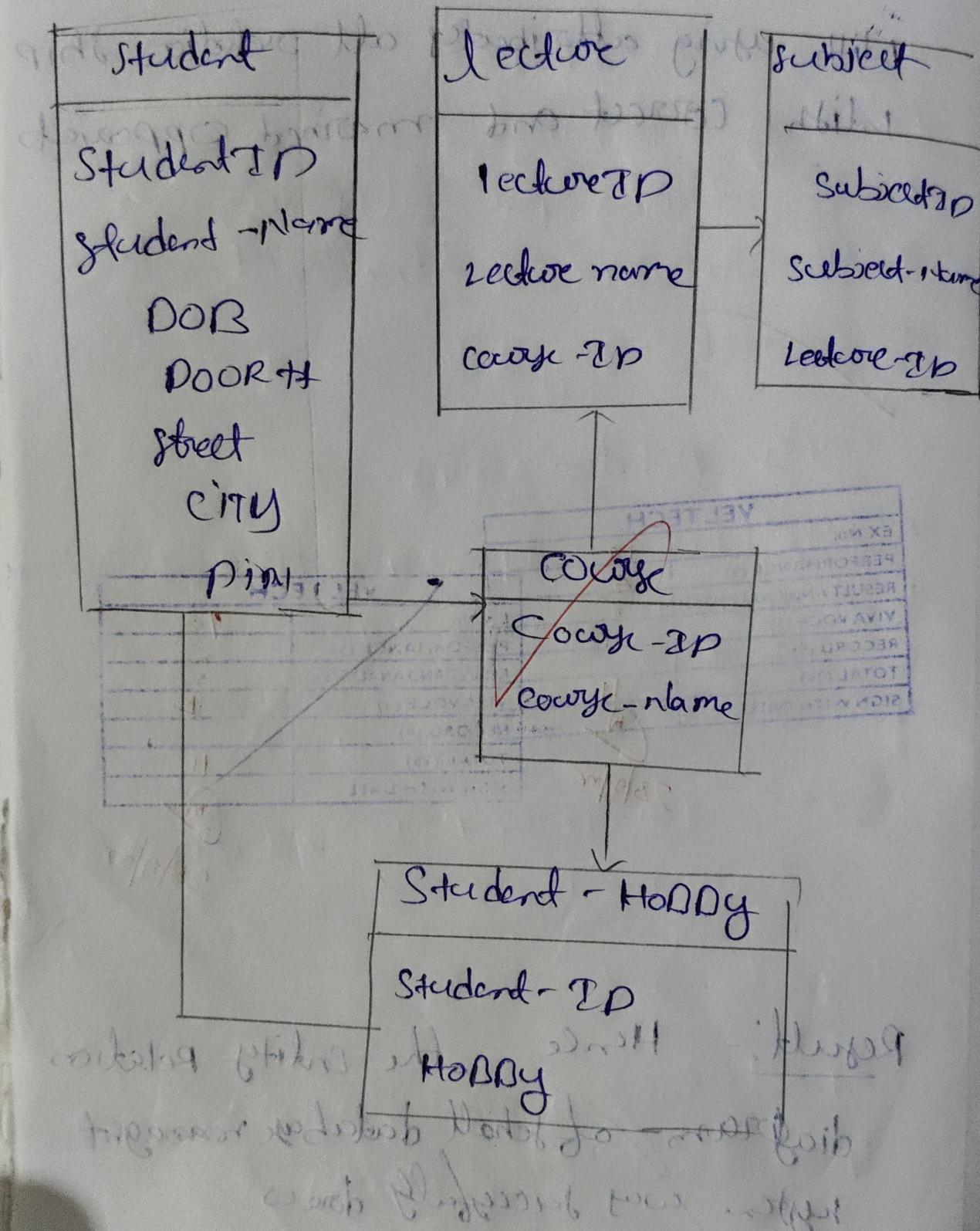
Aim:- To convert the ER diagram into Relational Diagram for school management setting.

#### steps:-

- \* Entity types become a table
- \* All single-valued attribute becomes a column for table
- \* A key attribute for the entity type represented by primary key.
- \* The multivalued represented by components separate table
- \* Composite attributes represented by components
- \* Derived attributes are not considered.
- \* Using these rules you can convert the ER diagram to tables and columns and assign the mapping between the table

## Relational model

Entities: Student, Lecture, Subject



but

VET TECH	
EX No.	1b
PERFORMANCE (5)	6
RESULT AND ANALYSIS	5
VIVA VOCE (3)	1
RECORD (4)	
TOTAL (15)	11
SIGN WITH DATE	C 28/12/10

VET TECH	
EX No.	1b
PERFORMANCE (5)	6
RESULT AND ANALYSIS (3)	5
VIVA VOCE (3)	
RECORD (4)	
TOTAL (15)	
SIGN WITH DATE	

Result:- The relational diagram of the  
School management System is successfully  
verified