

Task: 1

Date: 28/7/25

Title: conceptual design using ER
model → school management
system.

Aim: To design the ER Diagram for the school
management database using draw.io

Step 1: problem understanding requirement
analysis analyze the real-world application
School management system understand the
domain (Student, Teacher, class, subject,
examinations, Result)

Step 2: Identify major entities are code components
representing objects or concepts in the system

- Student
- Teacher
- class
- Subject
- Exam
- Result

Step 3: Identify attributes for each entity.

Entity attributes

Student student ID(PRIMARY KEY), Name, Age, Gender,
Phone, Address

Class ID(FK).

Teacher Teacher ID (PK), Name, Qualification,
contact NO email, website

Class Class ID, Class Name, Section

Subject Subject ID, Exam ID, Date, Time

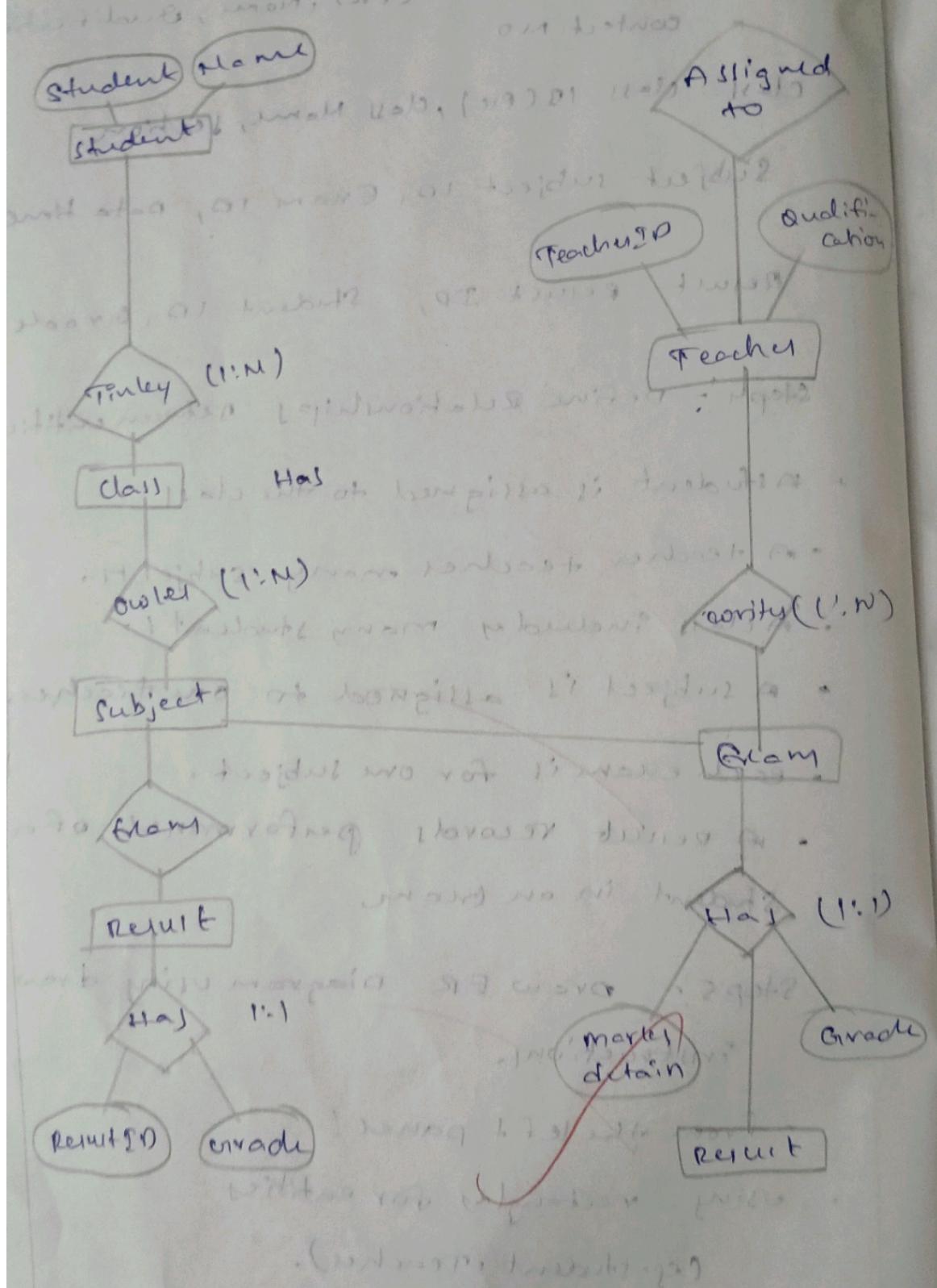
Result Result ID, Student ID, Grade

Step 4: Define Relationships between entities.

- A student is assigned to the class
- A teacher teaches many subjects
- A class includes many students
- A subject is assigned to one teacher
- each exam is for one subject
- A result records performance of a student in an exam

Step 5: Draw ER Diagram using drawing instructions.

- from the left panel
- using rectangles for entities (e.g. student, Teacher).



- use ellipse for attributes
- use diamonds for relationships
- connect using solid lines.

Example relationship:

- class(1) - includes \rightarrow (m) student
- Teacher(1) - Teaches \rightarrow (m) subject
- subject(1) - has \rightarrow (m) exams
- student(1) - writes \rightarrow (m) exam.
- Result includes link between student and exam.

Input for the ER design

• Real time school system scenario

• User requirement: student

records, Teacher, Assignment

class management, Exam tracking

Result management

Database Design Rules: Identify entities,

Attributes, Relationships, Cardinality

Keys.

Output:

entity relationship diagram (ERD)

that clearly shows

all identified entities with attributes

all relationships with appropriate cardinalities.

Foreign keys and keys marked appropriately.

Foreign keys and keys marked appropriately.

VEL TECH	
EX No.	1
PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
SWA VOCE (5)	2
PERIOD (5)	1
TOTAL (20)	12
GRADE	B

C
28/8/05

VELTE DAV TECH	
EX No.	12
PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
SWA VOCE (5)	5
RESULT AND ANALYSIS (5)	5
PERFORMANCE (5)	5
TOTAL (20)	12
GRADE	B

Result: The school management was successfully drawn by using ER-model.

28/7/21

Task 1.1.

Title: Convert the ER Diagram into Relational

Aim: To design the ER Diagram from the school

Relational model

Step for converting ER diagram to the relational
model

* Entity type become a table.

* All single valued attribute becomes
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 represented by components

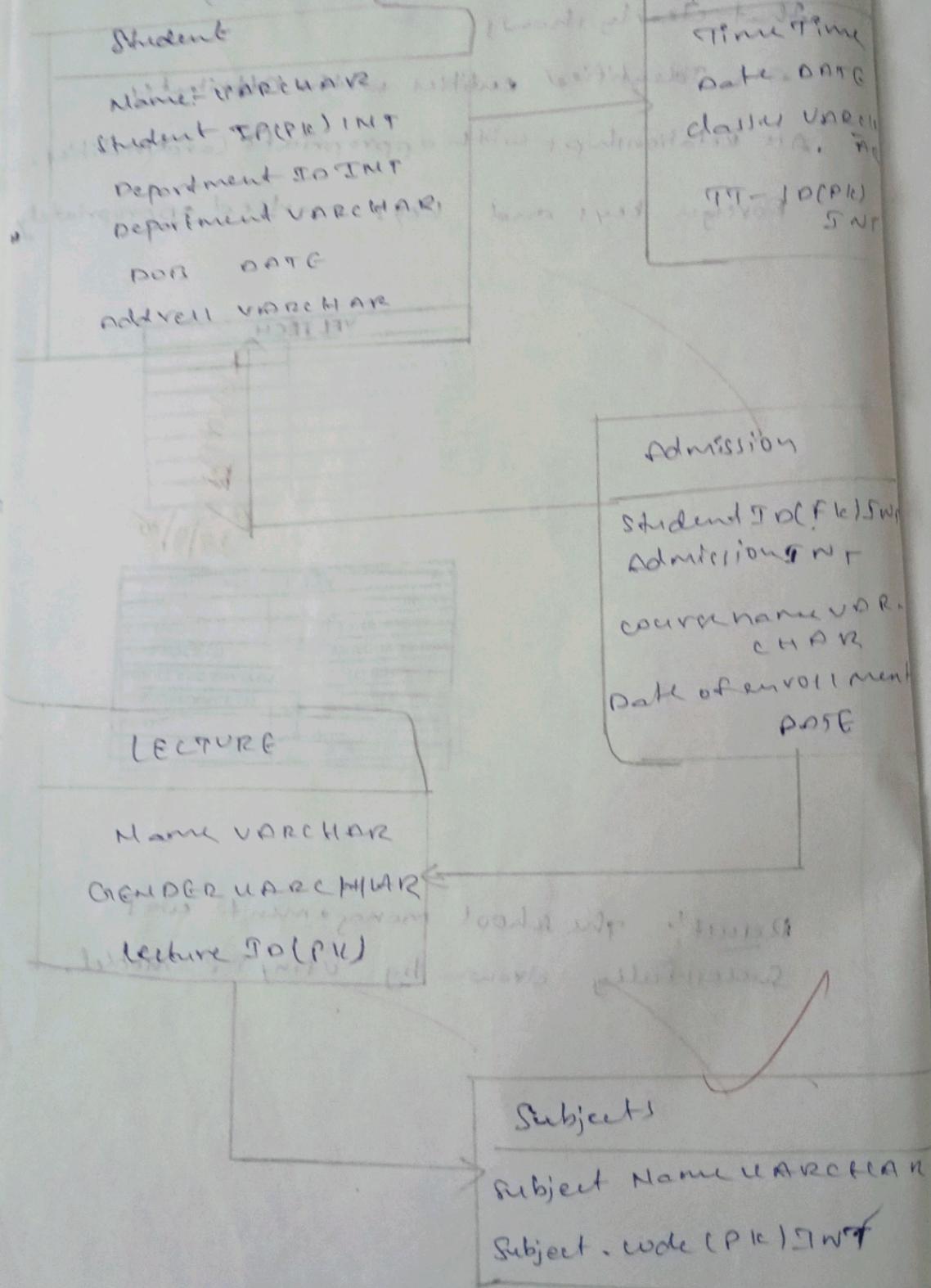
* Derived attributes are not considered in

the table

Using these rules, you can convert the ER
Diagram to tables & columns and align
the mapping between the tables,

Relation model:

(28) marks



VEL TECH	
EX No.	1
PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	2
RECORD (5)	12
TOTAL (20)	12
SIGN WITH DATE	✓ 22/2/17

Result:

The relation model for the given ER diagram
was successfully converted