PAGE NO.
DATE :

20/4/22 DBMS

files - used to store data (anytype of)

Q Difference b/w files and Database

files	Database
- Not in systematical - data retrieve difficult as is done manually.	- Data in systematical way - retrieval of data easy.
- insecure	- ~~unique~~ data secure
- can't recover in failure	- can be recovered.

NULL - ① Value unknown
② Value Not applicable.

primary key - Iske basis pe data define hota hai.

DataBase Management Sy	File Processing Sy
① Data redundency not found.	① Data redundency exists (Phone no.)
② Data inconsistency dosent exist.	② Data inconsistent
③ Accessing easier	③ Accesing data from file difficult.
④ prob. of data isolation not found. (when we change data refresh kate ke baad fresh info mil jayegi)	④ Data is scattered in various files in different format writing new programs to retrieve apt data is difficult.

DBMS

	File
⑤ Data is secured in DBMS	⑤ Data is not secured
⑥ Several users can used dataBase at the same time i.e concurrently w/o problems.	⑥ Concurrent access may cause prob. such as inconsistency
⑦ costly	⑦ cheaper.
⑧ supports, fixed and unfixed forseen queries	⑧ support can only fixed queries.
⑨ Recover data from H/w & S/w failures.	⑨ Can't recover from any kind of failure.

Main Characteristics of DataBase

- Self describing nature of DB -
  DBMS has catalog which has description of DataBase
  - meta Data & types
  - why meta Data - can get to know about constraints
- Insulation b/w programs & Data -
  can change database w/o changing access

t/Mary Navathu DBMS ppt

PAGE NO.
DATE :

- Data Abstraction - A data model is used to hide storage details and present the users with conceptual view of database.
  → what I want to retrieve data for.

- sharing of data and Multiuser transaction
  OLTP - online transaction processing
  either full data transfer or No.
  X X-5000 Y Y+5000 ✗

Imp

Data Base Users
actors on the scene

① DBA - Data Base Administors
② DataBase designer
③ End users - use for queries, reports
  ↙ Types ↓
  Casual — Naive and Parametric (bank balance tellers) → Sophisticated engineers, business, scientist etc. → Stand alone → make software Package use and earn

Data Models

A set of concept to describe the structure of database and certain constraints.

Categories of Data Models

- Conceptual
- Physical
- Implimentation / representation
- Relational
- Network
- Hierarchical

PAGE NO.
DATE :

- object oriented Data Model

SQL

Major Components of SQL

DDL - Data definition lang : Create, Alter, Drop

DML - Data manipulation lang. Insert, update, delete, select.

DCL - Data control lang. Committ, Rollback

Syntax

* CREATE TABLE table_name (staffno VARCHAR(5), sname VARCHAR(15), salary DECIMAL(7,2));

* INSERT INTO table_name VALUES ('SM100', 'Suman', 30000);

* SELECT Col names (seperated with comma) FROM table-name;

NOTE: 'WHERE' is used if we need to add condition

4/22

ER

PAGE NO.
DATE :

Types of Attributes

1) Simple

Each entity has single atomic value for attribute eg:- SName, Sex

2) Composite

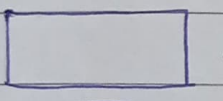
Having combination of values

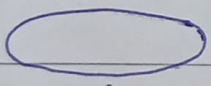
for eg:- ~~House Name~~ Address - House no., street, city etc.

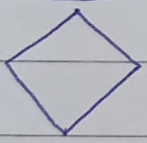
3) Multivalued

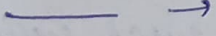
Having multiple values for attribute

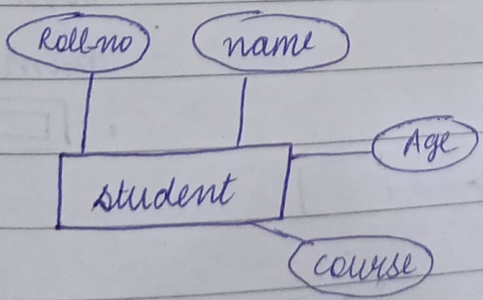
eg:- color of CAR / degree of students.


→ Entity


→ Attribute


→ Relationship

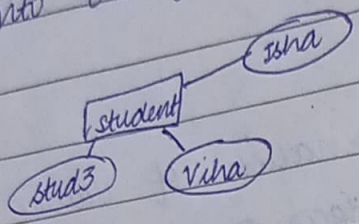

→ Connected line



Entity type and Key Attribute

Entity with same Basic values attributes are grouped into entity type.

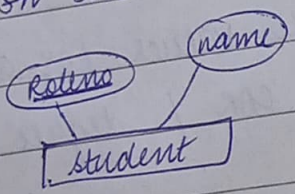
eg



Key attribute / Primary attribute

unique attribute for all entities

eg:- ~~Str~~ Srollno for student

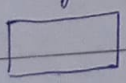


Derived attribute → age

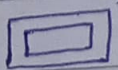
DOB + system date

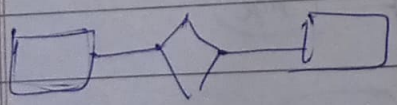
Derive age

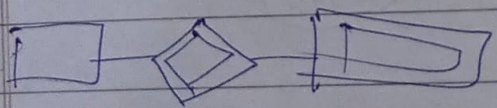
Strong entity

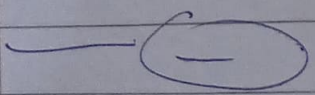


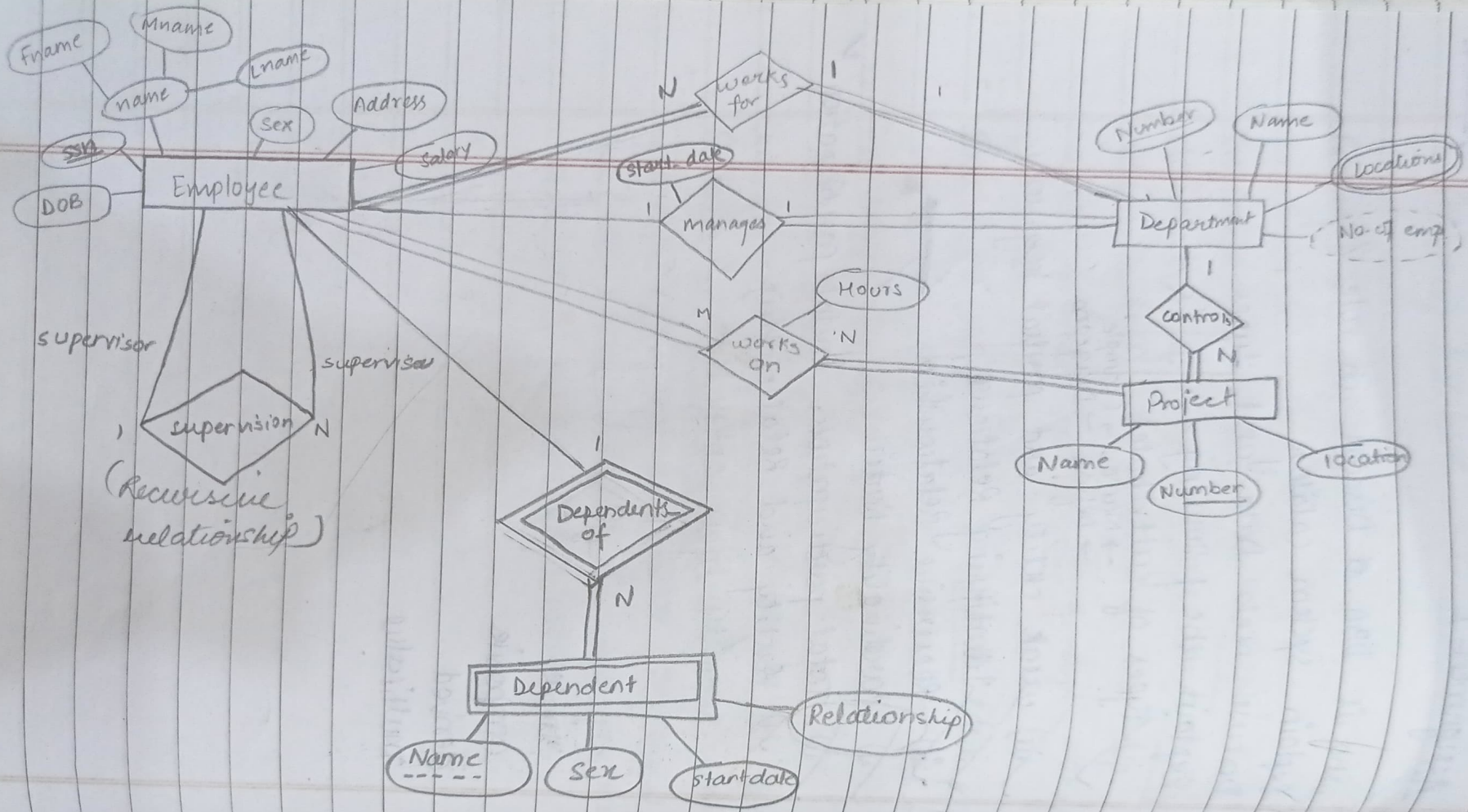
weak entity

- Don't have its own Primary key.
- 



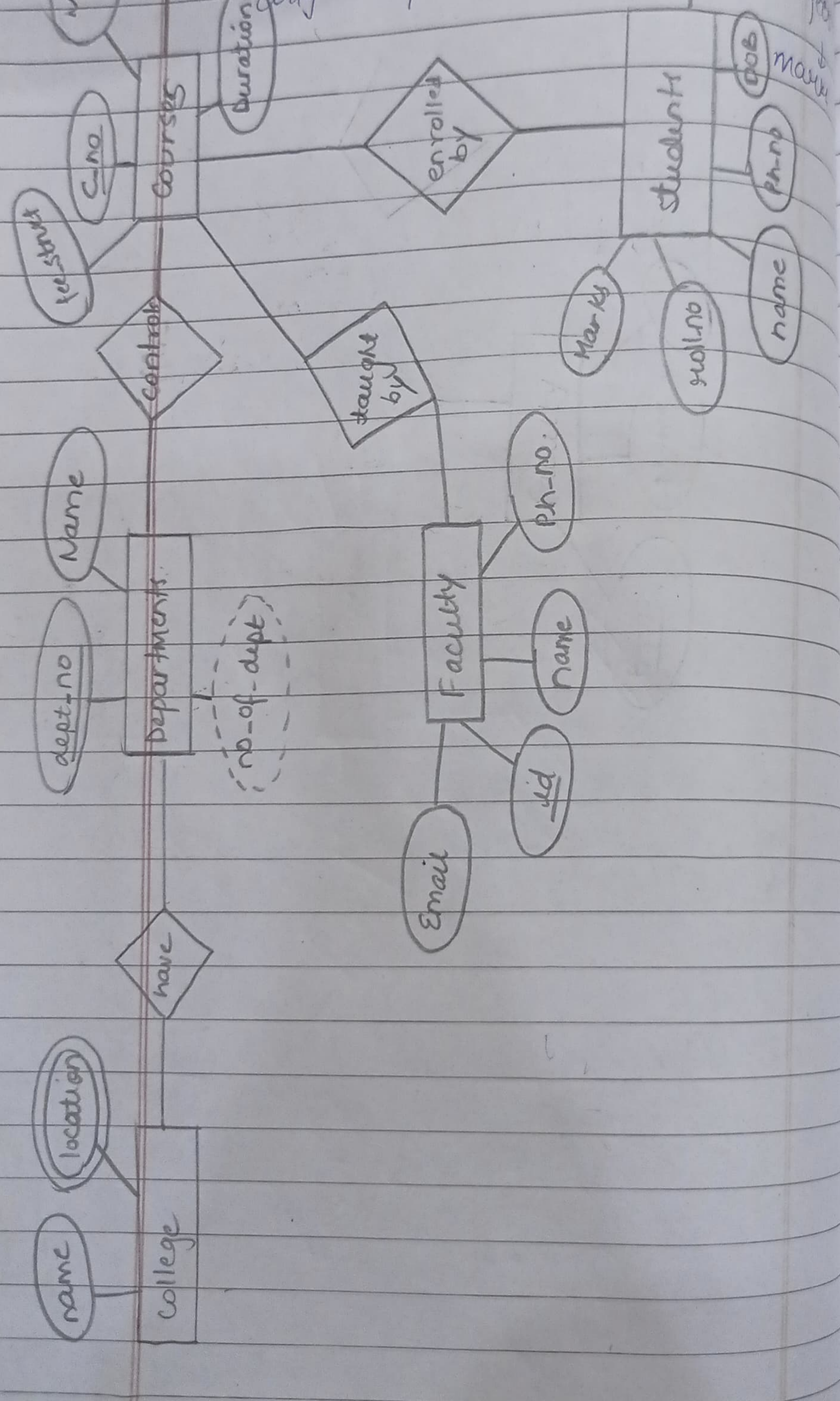


 Key attribute


Fname
Minit
Lname
name
SSN
Sex
Address
Salary
DOB
Employee
supervisor
supervisee
supervision
1
N
(Recursive relationship)
N
works for
1
1
start_date
manages
1
1
Hours
M
works on
N
Dependents of
1
N
Dependent
Name
Sex
Start_date
Relationship
Number
Name
Locations
Department
No. of emp
1
controls
N
Project
Name
Number
location

College ~~Student~~ Management system

colg → dep → courses → enroll → fees → marks



28/4/22

8 Construct an ER diagram for a company having following description (i) There are several dept. in a company. Each dept may have several

ii) A manager controls particular dept

iii) Each dept associated with no. of projects

iv) An employee work only in 1 dept but can work in several proj

v) Keep track of no. of hrs worked by an employee on a single proj Each emp. has dependence.