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- 4.) Semester : 4
- 5.) Course Name : Database Management System
- 6.) Center Code :
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- 10.) I hereby declare that the above mentioned info
is true to best of my knowledge
- 11.) Signature : 

- 1.) A Database can be defined as a logical collection of data with an implicit meaning.
- Properties of Database :
- * A database represents some aspects of the real world called mineworld. changes to mineworld are reflected in database.
 - * A database is logically coherent, built & populated with data for specific purpose. It has an intended group of users & application in which these users are interested.
 - * A database can be of any size & complexity.
 - * A database may be generated & maintained manually.

4.) → Actors on the scene

- i) Database administrators : Responsible for authorizing access to database, for co-ordinating & monitoring its use, acquiring software & hardware resources.
- ii) Database designers : Responsible to define the content, the structures, constraints & functions or transactions against database.
- iii) End-users : They use data for queries, reports & some of them actually update the database content.

→ Workers behind the scene

- i) DBMS system designer & implementors : Design & implement

- i.) The DBMS modules & interfaces as a software package. It includes : catalogs, query processing, interfaces, accessing data & security.
- ii.) Tool developers: Designs & implements tools. They include packages for database design, performance monitoring & simulations.
- iii.) Operators & maintenance personnel: Are responsible for actually running & maintenance of hardware & software environment of database system.

2.) Advantages of using Database approach.

- i.) Sharing of data among multiple users.
- ii.) Restricting unauthorised access to data.
- iii.) Providing persistent storage for program objects.
- iv.) Providing storage structures for efficient query processing.
- v.) Providing Backup & Recovery.
- vi.) Providing Multiple UI
- vii.) Representing complex relationships among data.

→ Providing Backup & Recovery : A DBMS must provide facilities for recovering from hardware or software failures. The backup & recovery subsystems of DBMS is responsible for recovery.

→ Providing Multiple UI : Because many types of users with varying levels of technical knowledge use a database, a DBMS should provide a variety of user interfaces. These can include query language for casual users, programming language interface for application programs etc.

→ Representing Complex Relationships among Data

Q) A database may include numerous varieties of data that are interrelated in many ways. A DBMS must have ~~some~~ capability to represent a variety of complex relationships among the data to define new relationships as they arise.

7) Symbols & Notations:

i) → Entity or Entity Type

ii) → Weak Entity Type

iii) → Attribute

iv) → Key attribute

v) → Multivalued attribute

vi) → Composite Attribute

vii) → Derived attribute

viii)
Cardinality Ratio 1:N for
E1: E2 is R

ix) → Relationship

7.) \leftrightarrow Identity Relationship

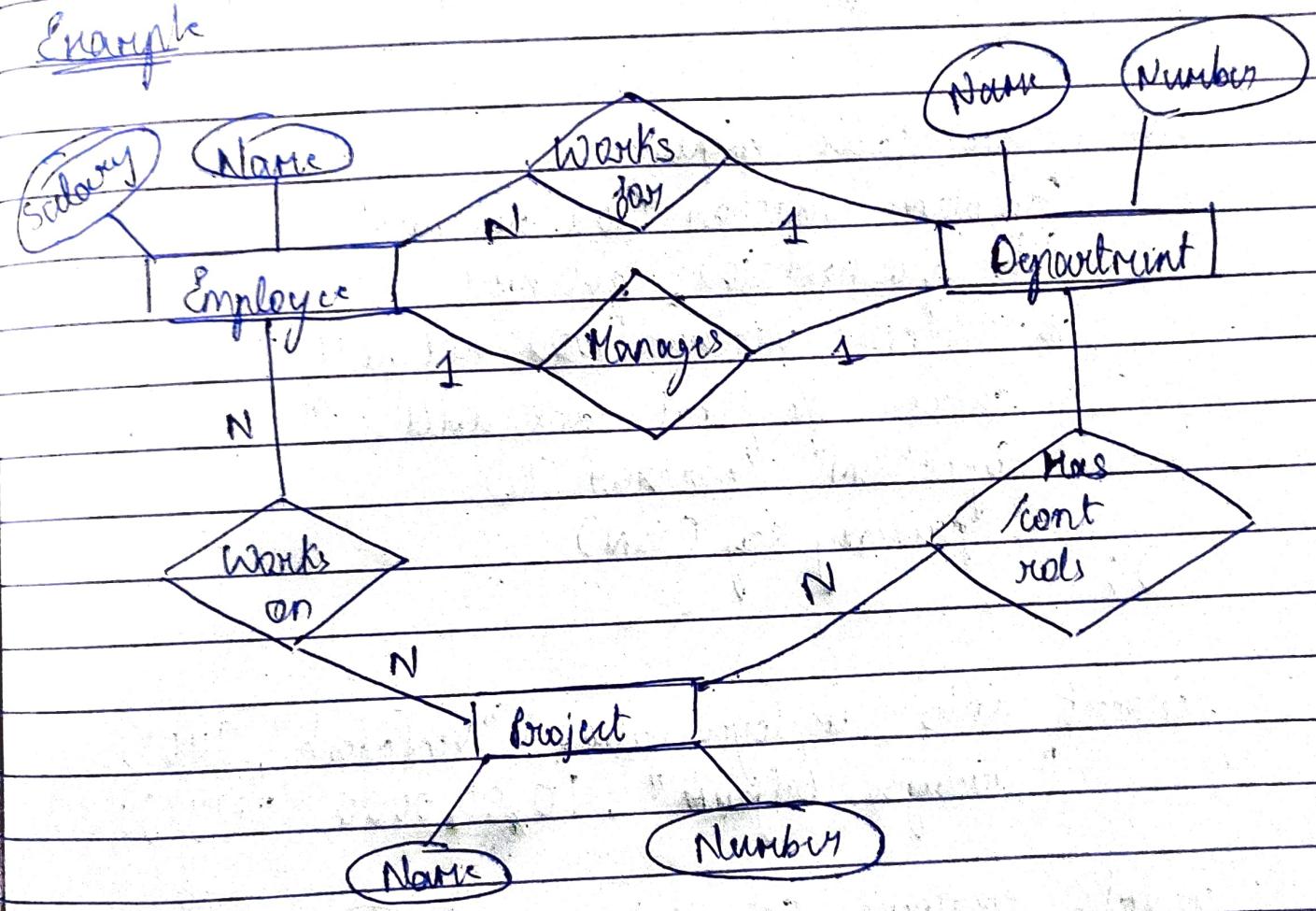
xii.)

$|E_1| \xrightarrow{R} |E_2| \rightarrow$ Total Participation.

xiii.)

$|E_1| \xleftarrow{R^N} |E_2| \rightarrow$ Cardinality Ratio b/w E_1 & E_2
in $1:R$.

Example



6. create database company;
use company;
create table department (
Dep_Name varchar(10) not null,
Dep_Number integer not null,
Manager_SSN char(9) not null,
primary key (Dep_Number),
foreign key (Manager_SSN) references employee(SSN)
);

create table employee (
Emp_Name varchar(10) not null,
SSN varchar(10) not null,
address varchar(100) not null,
salary float not null
Super_SSN varchar(10),
primary key (SSN)
);

insert into employee values ("Venkatesh", "110",
"Visalagan, Bilgum", 10000000, "129");

update employee set salary = salary + (salary * 0.15)
where SSN = "110";