DBMS Assignment-1

Dear Sir/mam

Q1. DBMS → A Data base management system (DBMS) is a application softwere that allows users to efficient define, create, maintain and share databases.

* advantage of DBMS over file system :-

①. Data redundancy and inconsistency -

Redundancy is the concept of repetition of data i.e each data may have more than a single copy. The file system cannot control redundancy of data as each user defines and maintain the needed files for a specific application to run.

②. Data sharing -

File system does not allow sharing of data or sharing is too complex. whereas in DBMS, data can be shared easily due to centralized system.

③. Data concurrency -

concurrent access to data means more than one user is accessing the same data at the same time. file system does not provide any procedure to stop anomalies. whereas DBMS provides a locking system to stop anomalies to occur.
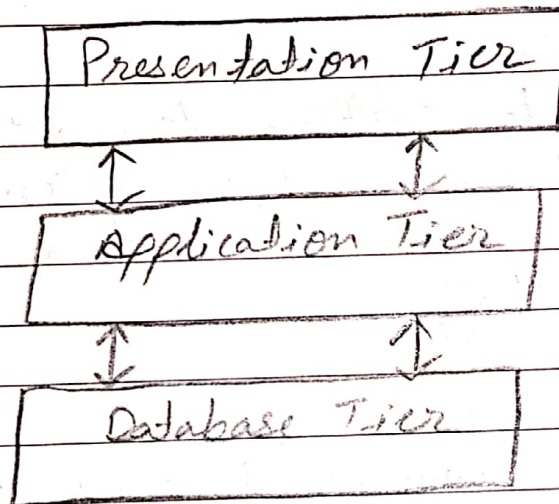
④. Data Searching -

for every search operation performed on file system, a different application program has to be written. while DBMS provi inbuilt searching operation.

(S). Data integrity.

(C). System crashing.

(7). Data Security.

(8).

Q2: Architecture and diagram of DBMS:—

The design of a DBMS depends on its architecture. it can be centralized or decentralized or hierarchical. The architecture of a DBMS can be seen as either single tier of multiple-tier programmers use 2-tier architecture where they access the DBMS by means of an application.

```
┌─────────────────────────┐
│   Presentation Tier     │
└─────────────────────────┘
      ↑↓         ↑↓
┌─────────────────────────┐
│   Application Tier      │
└─────────────────────────┘
      ↑↓         ↑
┌─────────────────────────┐
│   Database Tier         │
└─────────────────────────┘
```

Q3 ER-model:-

ER model is used to model the logical view of the system from data perspective which consists of these components:
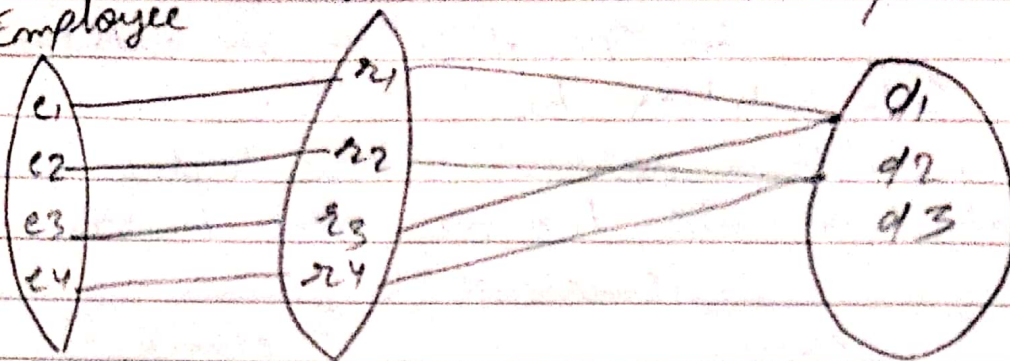Entity, Entity type, Entity set —

mapping cardinality / cardinality ratio:—

mapping cardinality is the maximum number of relationship instances in which an entity can participate.
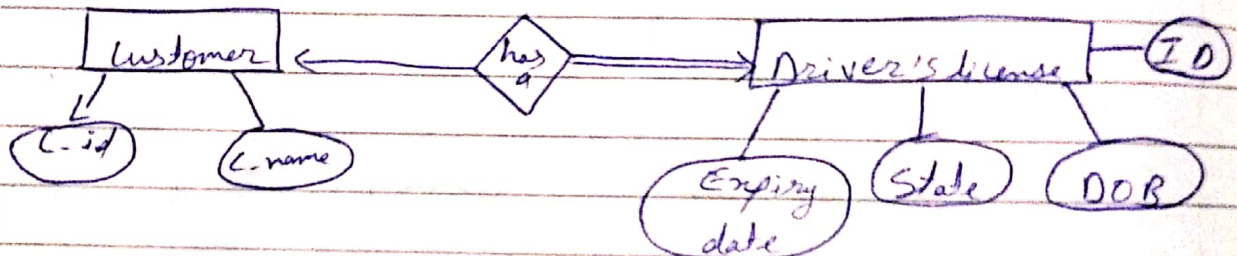
Exa:-

Employee   worksfor   Department

(a). one to one relationship (1:1):

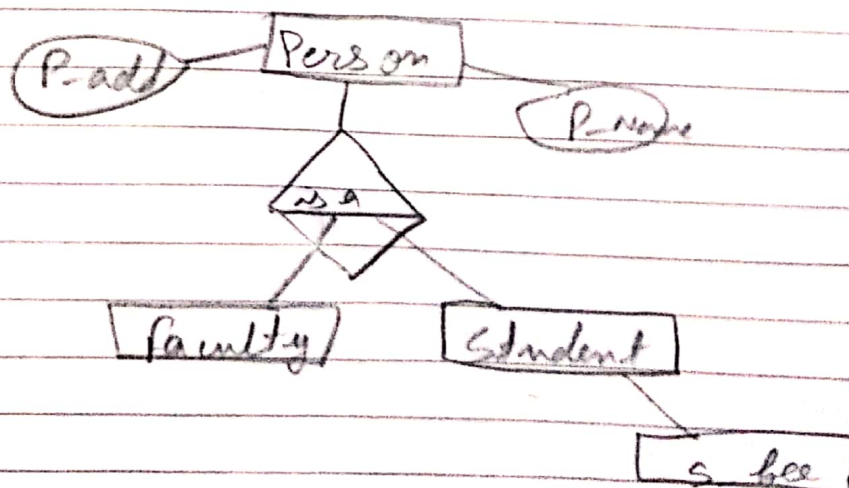it is represented using an arrow (→, ←)

(2) one to many relationship (1:m):

(3). many to one relationship (m:1):

(4). many to many relationship (m:n)
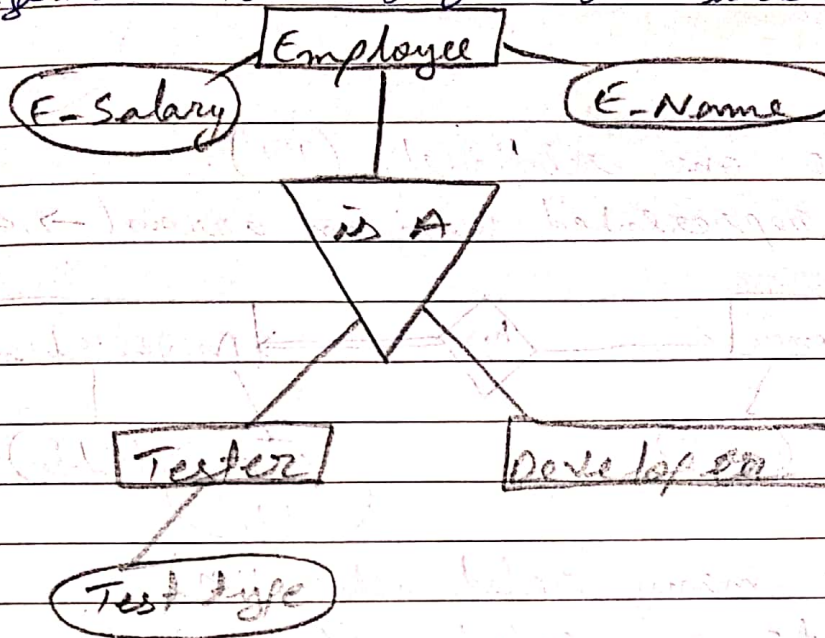
Q4. Generalization:-

generalization is the process of of extracting common properties from a set of entities and create a generalized entity from it
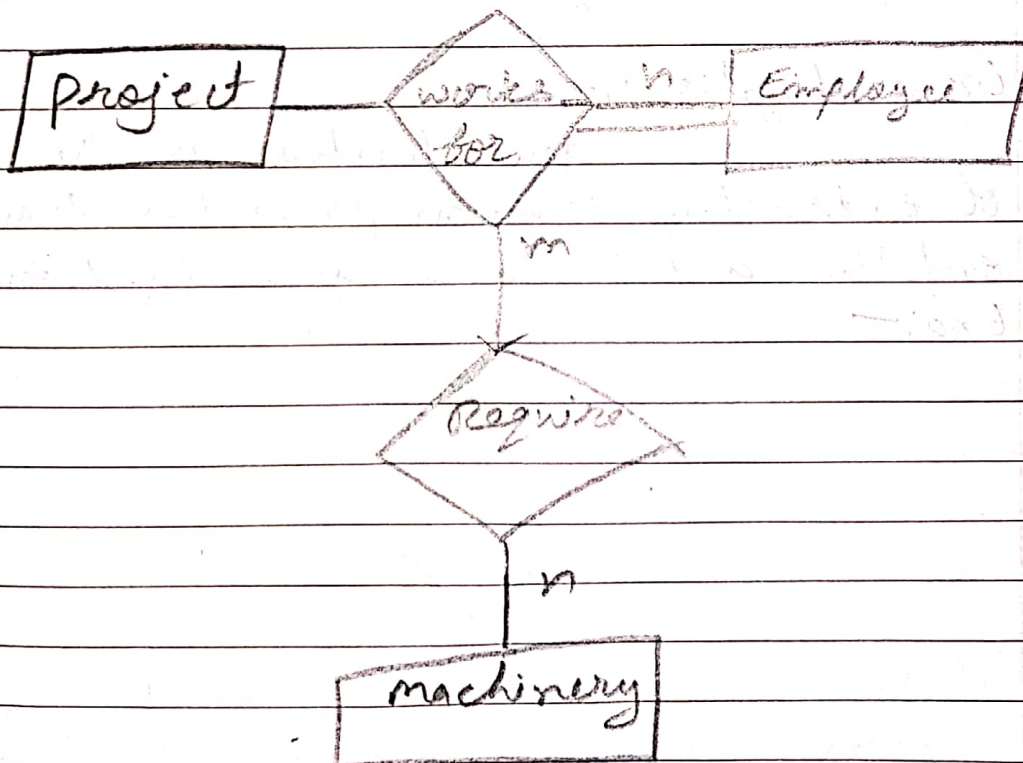
Exa:-

* **specialization:-**

      in Specialization, an entity is divided into Sub-entities based on their characteristics. it is a top-down approach where higher level entity is specialization into two or more lower leve entities.

* **Aggregation:-**

Aggregation

05

Student

Class

has

Registrar — manage — Instructor

Enrollment