Roll No : SYB38

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Assignment 1

* Aim :-
To construct an ER diagram based on given entity sets & relationship sets.

* Objective :-
1) To draw the ER diagram of the given database system.
2) To visualize or to view all concepts of entity set, relationship set & their attributes. & analyze symbols used for them.
3) To see the cardinality constraints like one-to-one, one-to-many, many-to-one, many-to-many.

* Theory :-
• Data Model :-
A data model organizes data elements and standardizes how the data elements related to one another.
Data model is collection of conceptual tools for describing data, data releationship, data semantics, data constraints.

- Typs of data model are as follows :-

1) Entity-Relationship data model.
2) Relational model.
3) Object-based data models [O-O & Object-relational]
4) Semistructured data model [XML]
5) Network model
6) Hierarchical model.

* ER model :-

- Entity relationship model is a high level data model which is collection of entities & relationships among entities.
- An entity is a "thing" or "Object" in the real world that is distinguishable from other objects.

eg. Company, event, plant, person.

* ER diagrams :-

- ER diagram is diagram which expresses the overall logical structure of a database graphically.

- The purpose of E-R diagram is to visualize & describe the structured data within a system. It is particularly beneficial in the design & construction of complex relational database.

* Components / Notations in ER diagram :-

1) Rectangles divided into two parts represent entity sets. The first part contains the name of entity set. The second part contains the name of all attribute of entity set.

2) Diamonds represent relationship sets.

3) Undivided rectangles represent the attributes of a relationship set.

4) Attributes that are part of primary key are underlined.

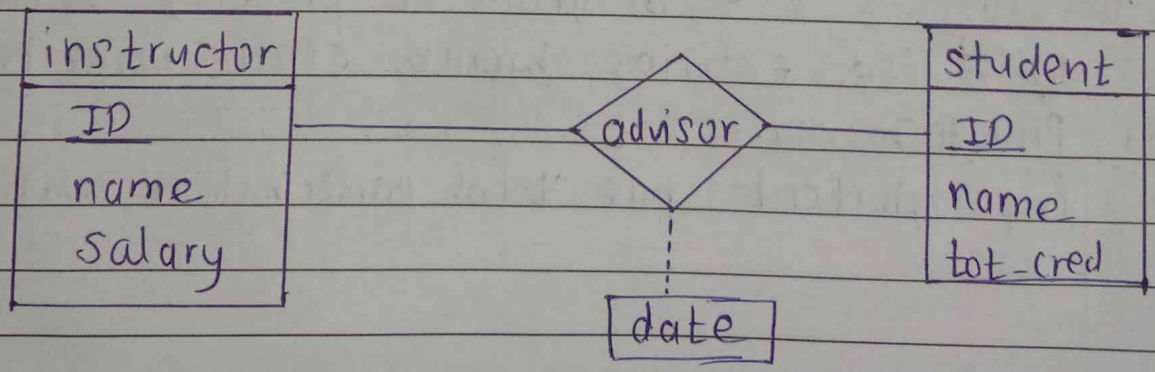
5) Lines link entity sets to relationship sets.

6) Dashed lines link attributes of a relationship set to relationship set.

7) Double lines indicate total participation of an entity in a relationship set.

8) Double diamonds represent identifying relationship sets linked to weak entity sets.

eg.



* ER diagrams in Assignment-1 A :-

1) This E-R diagram is about university database. which contains the entities classroom, course, instructor, section, department, student & time-slot section is weak entity. which depends on course. & sec_course is relation between section & course.

2) This is E-R diagram for bank database.
It contains the ~~attributes~~ entities like branch, customer, account, loan, payment, employee.
Among which payment is weak entity depends on loan.
In relationship set the entities account, customer_banker, payment, & loan has total participation.

3) This is E-R diagram of property database with the entities branch, staff, property, client, PrivateOwner.
PropertyforRent has total participation relation with owns.

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4) This is E-R diagram for company database with the entities department, employee, dept-locations, project, dependent.
Dependent is weak entity depends upon the entity employee.
Relationship set contains the relations works_on, works_for, controls & dependents_of.

* Conclusion :-
We have drawn the E-R diagrams for given database.