

QBMS-II





DBMS - UNIT 2

SURE QUESTION

→ ER Diagram Use Case

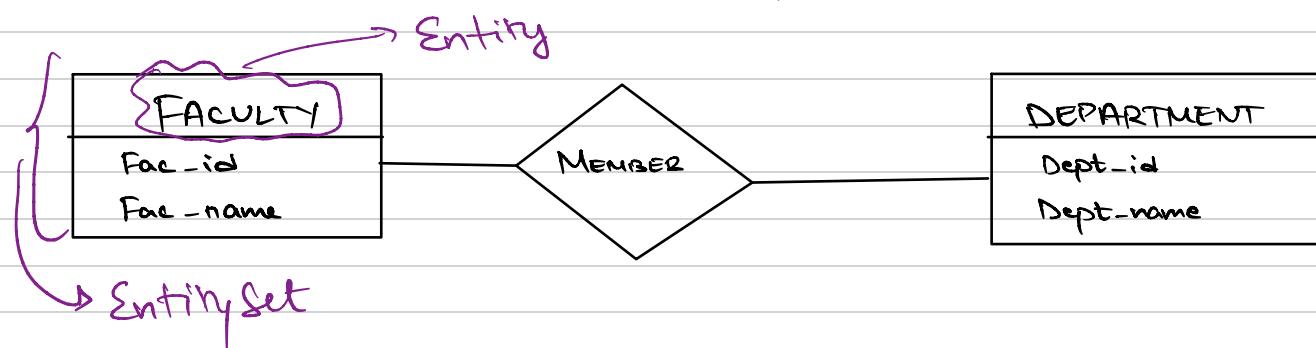
→ Extended ER feature

→ Mapping Cardinality

Design process - ER MODEL

- * Entity: Any Object in real World is an Entity
- * Relationship: Association among several entities.
- * Entity-Set: Set of all Entities of same type

- * Relationship-Set: Set of all Relationships of same type.



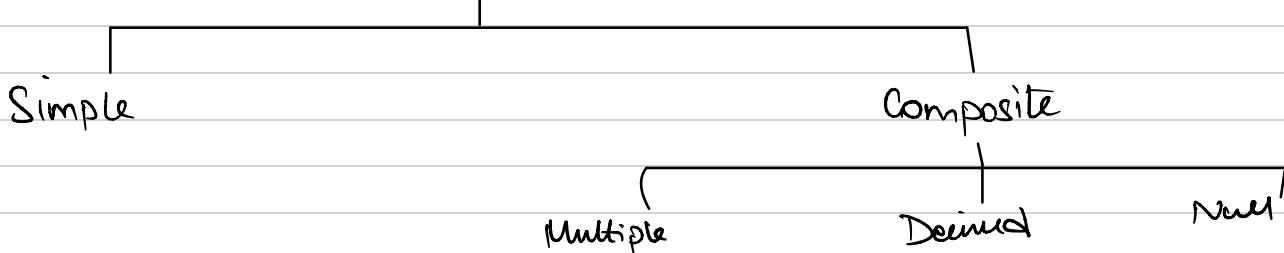
NORMALISATION

- * It is a method to design a relational DB so that the DB contains no redundant information to maintain consistency
- * There are Different forms of Normalization which all depends on functional Dependency

ATTRIBUTES

- * Attribute of an Entity Set is a function that maps the Entity-Set function to its domain.
- * Each Entity Set is (Attribute, Data value) pair

TYPES



CONSTRAINTS

limits to which the contents of DB must conform to.

Achieved using

Mapping Cardinalities

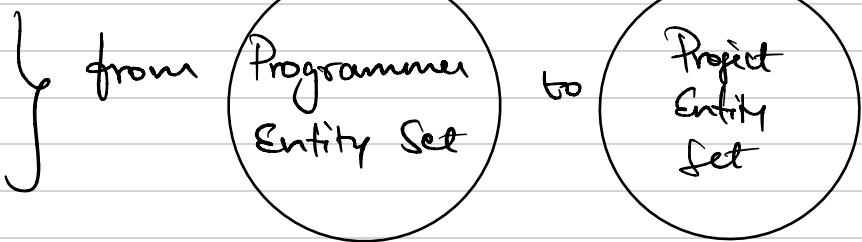
Participation Constraints

MAPPING CARDINALITY:

* Refers to Number of Entities to which another entity can be associated via Relationship Set

* For a Binary Relationship Set, the Mapping Cardinality:

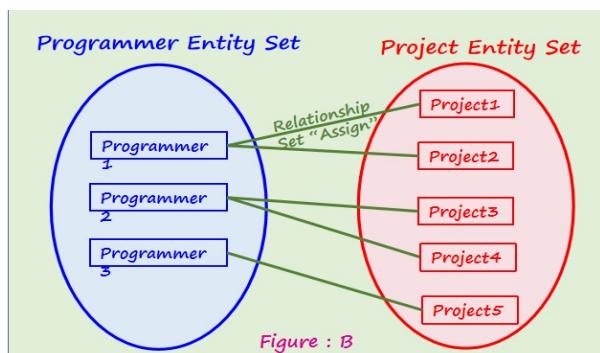
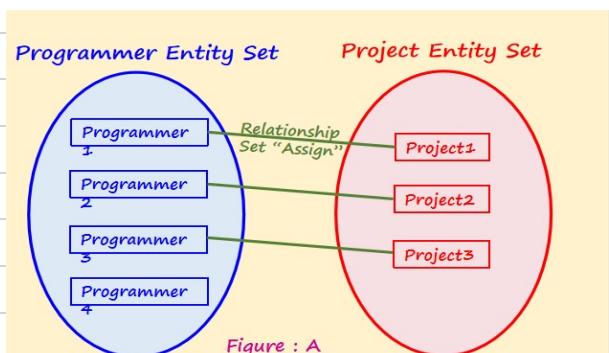
- (1:1)
- (1:M)
- (M:1)
- (M:N)



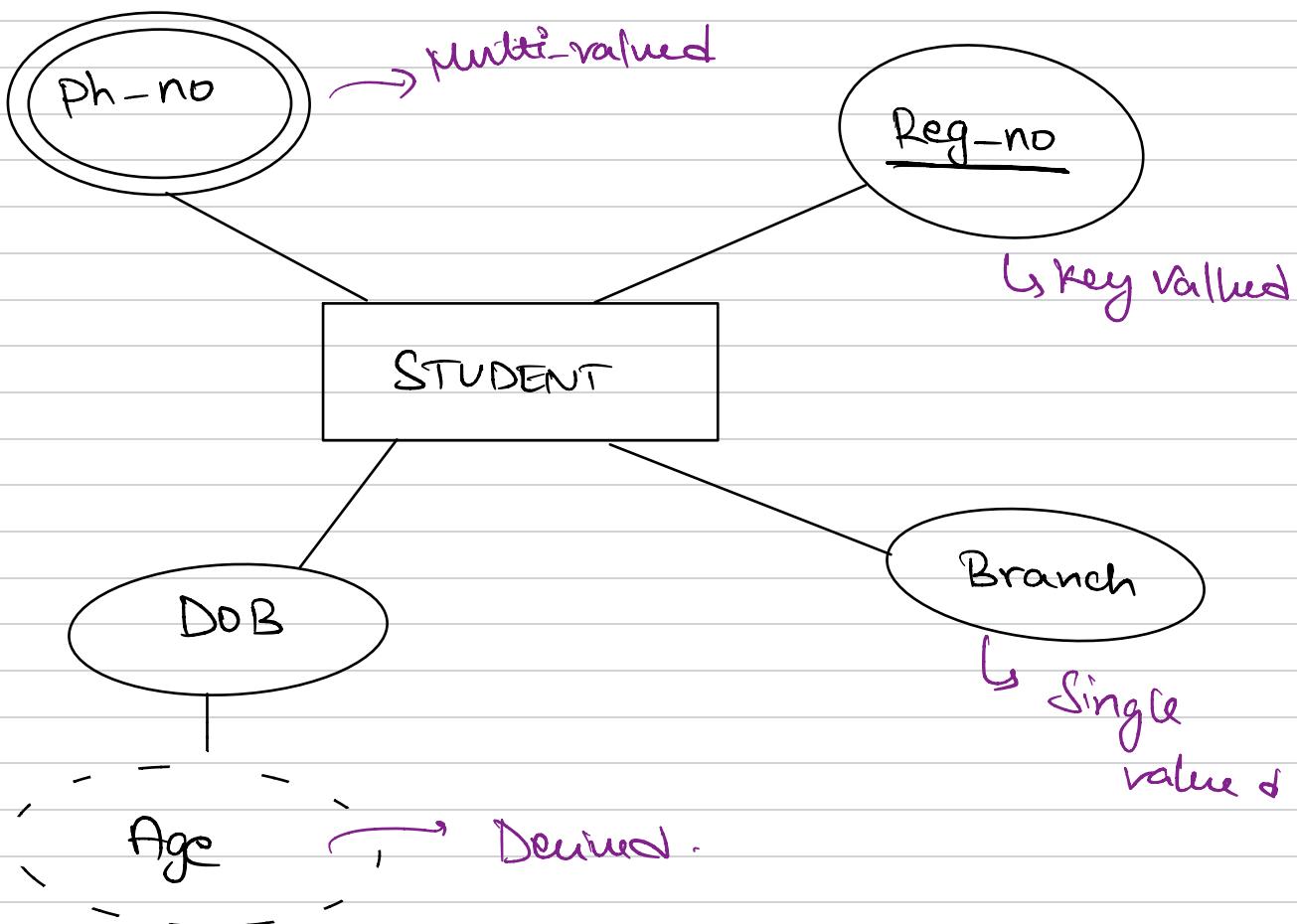
PARTICIPATION CONSTRAINTS:

(i) Total Participation: Every E participate in atleast one R

(ii) Partial Participation: Only some E participate in R.



Representation in ER Diagram



Types of Constraints

DOMAIN
CONSTRAINTS

- NOT NULL
- CHECK
- UNIQUE
- PRIMARY KEY

INTEGRITY
CONSTRAINTS

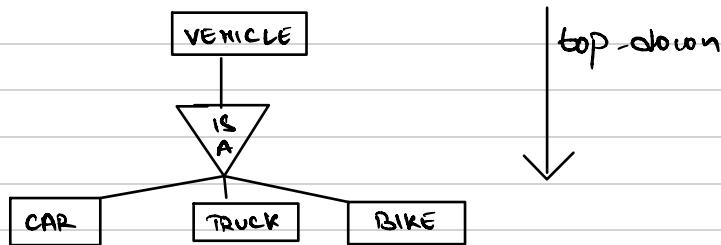
- REFERENTIAL / FOREIGN KEY

EXTENDED ER FEATURES

- 1) Specialization
- 2) Aggregation
- 3) Generalization
- 4) High-low Level Entity Sets
- 5) Attribute Inheritance.

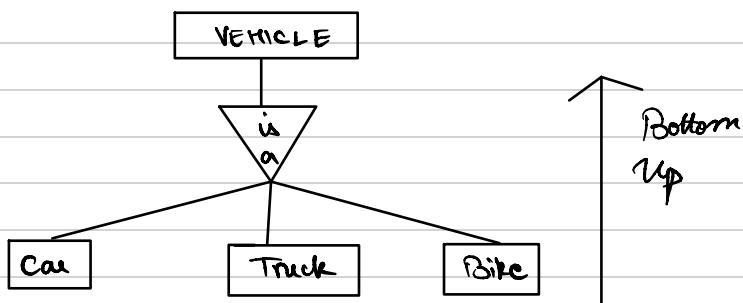
SPECIALIZATION:

- * Process of designating subgrouping within an Entity set that share different characteristic.
- * Top-Down Approach
- * One Entity is broken down into multiple low-level Entity



GENERALIZATION:

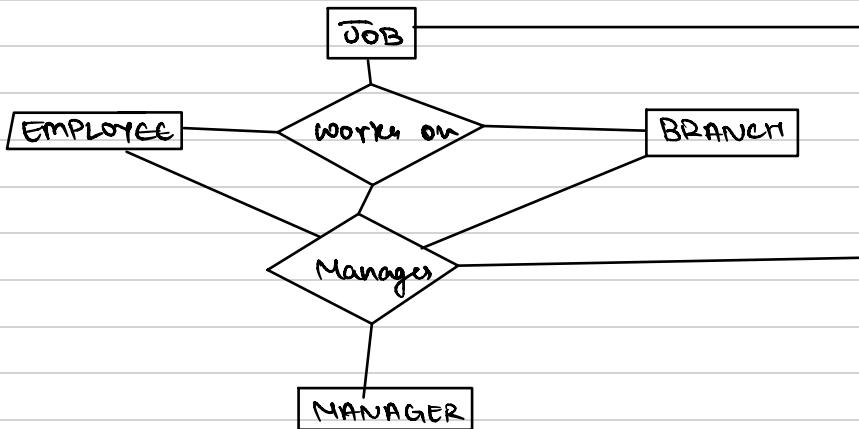
- * Process of generalizing an entity which contains generalized attributes or properties of generalized entities.
- * It is a Bottom-Up approach.



→ Mainly used to Depict ternary relationship

AGGREGATION:

- * Used to describe the relationship b/w a whole object and its component

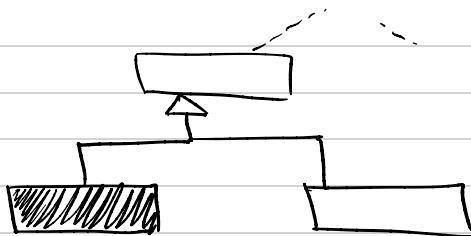


ATTRIBUTE INHERITANCE:

- * Attributes of Higher-level Entity Sets are inherited by that of lower level Entity Set.

SINGLE INHERITANCE:

- * If the Entity-Set is of a lower-level Entity Set and has only One ISA relationship



MULTIPLE INHERITANCE:

- * Lower Level Entity Set in more than one ISA relationship

