

Name :- Kalani Kanan Gityan

Semester :- 5

Subject :- DBMS

Seat No :- CS5A021

Pg No :- 1/6 of Q2.

Sign :- K. G. Kalani

#### 4) Roles of DBA.

- i) The DBA needs to perform many roles to keep the database up and running.
- ii) The database administrator needs to manage DBMS software and servers.
- iii) He is also responsible for deciding on the storage and access methods.
- iv) The DBA performs all data field or adding new fields into database.
- v) System administrator / designer.
- vi) The DBA writes programs to design database and to design the means of reorganization database periodically.
- vii) The DBA also determines and implement database searching strategies.
- viii) System analyst.
- ix) DBA needs to analyze the system performance and fine tune the DBMS activities.
- x) DBA needs to take care of system crashes by planning proper recovery procedures.

Teacher's Sign.: \_\_\_\_\_

Teacher



pg No :- 2/56 of Q2 Sign :- K.G. Kalaw

## 8) Data independence and their types.

Concept of data independence can be explained with help of 3 scheme architecture. The three schema architecture can make it easier to achieve true data independence.

Data independence can be defined as the capacity to change one level of schema without changing the schema at next higher level.

Types of Data Independence.

- Logical Data Independence.
- Physical data independence.

a) Logical Data Independence.

- It is the capacity to change conceptual schema without having any change to external schema.
- Separating external view from conceptual view enables us to change the conceptual view affecting the external view. This separation is sometimes called logical data independence.

b). Physical data Independence

- It is a capacity to change internal schema without having any change to conceptual schema.
- The separation of conceptual view from internal view enables us to provide a logical description of database without need to specify physical structures.

Teacher's Sign.: \_\_\_\_\_



pg No :- 3/56 of Q2. Sign :- R.G. Kalaw

c) Specialization and Generalization in EER with example

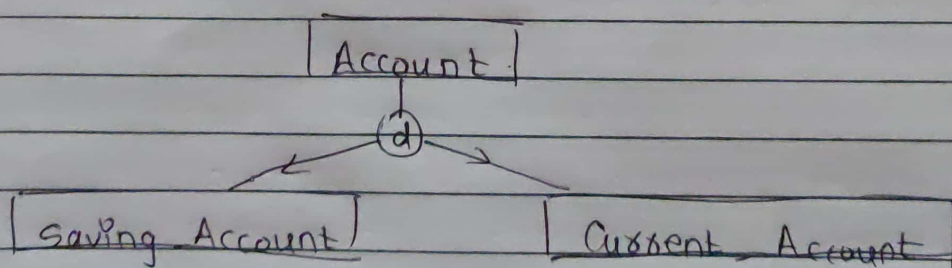
EER model includes concepts of ER model and the concepts of aggregation, specialization and generalization.

### Specialization

- i) Specialization Follows a top-down approach of superclass / subclass relationship
- ii) Specialization is a process of defining a set of subclass of entity type, this entity type is called super class of specialization.
- iii) The set of subclass that forms a specialization is defined on basis of distinguishing characteristic of entity in super class.

Example :-

Set of subclass (Saving account, Current Account) are Specialization of super class Account





pg No:- 4/56 of Q2 sign:- K. G. Kalan.

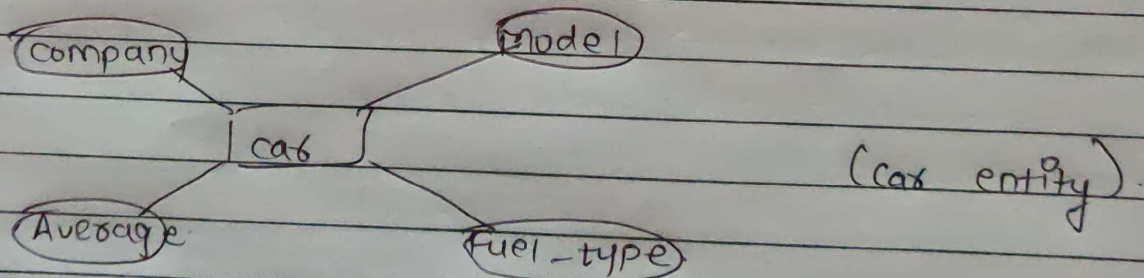
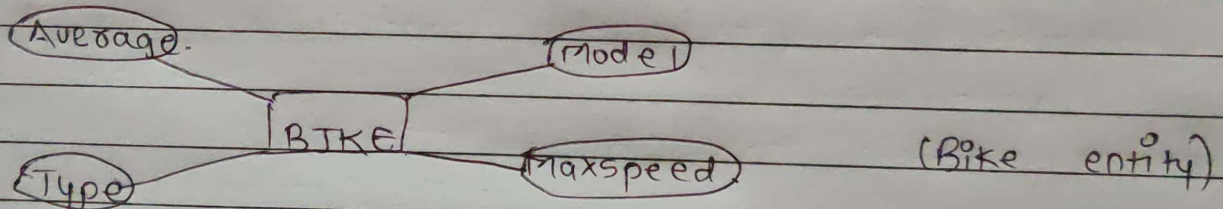
### Generalization:-

This is a reverse process of specialization or this is bottom up approach of superclass/subclass relationship.

Generalization is a process in which we differentiate among several entity types identifying the common features and generalizing them to a single super class of which original entity type are special subclass.

### Example:-

Car and bike are all having common attribute they can generalize to super class vehicle.





pg No :- 576 of Q2. Sign + B. G. Kaland

- D) Constraints make sure that only authorised users will make modifications to database and changes should not lead to loss of data consistency and correctness.

Integrity constraints are.

- Entity integrity constraints.
- Referential integrity constraints.

Entity constraints allows us to test whether the tuple inserted into database are correct or not.

The create table command may also include entity constraints which can primary key of table.

Types of Entity constraints.

- Unique constraint
  - In case of unique constraint, no two tuples can have the same values.
- example :- EMAIL varchar(30) UNIQUE.

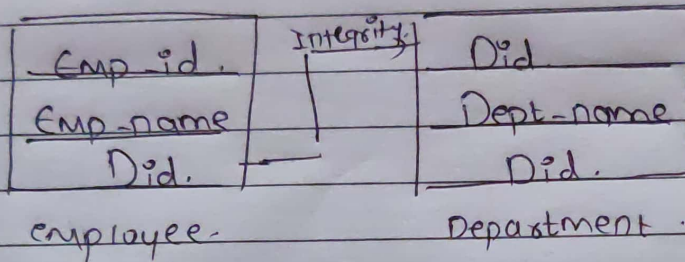
- Primary constraint.
  - Primary constraint is same as the unique constraint. In primary constraint also, no two tuples can have the same values, but the only difference is in primary constraint there cannot be any NULL value.
- eg:- STUDENT ID, char(10) PRIMARY KEY



Page : 6/6 of Q2 Sign :- (C.G. Kalaw)

### Referential Integrity Constraint

- i) It is specified between two tables to maintain the consistency among tuples in two tables.
- ii) The tuple in one relation refers to an existing tuple in another relation.



### Referential Integrity