DBMS

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Assignment No. 2.

Q.1) Explain terminology of 'RDBMS'.

→ All modern database system like SQL, MSSQL server, IBM DB2, oracle, My SQL etc are based on RDBMS.

It is based on relational model introduced by E.F.codd.

- Terminologies of RDBMS

1) Table -

Everything in relational DB is stored in the form of relations.

The RDBMS DB uses tables to store a data.

A table is collection of relational data which contains rows & column to store data.

Each table represent same real word object such as person, place, or event.

Properties of Relation

- Each relⁿ has a unique name by which it is idenfied in the DB.
- Relation doesn't contains duplicate tuples or rows.
- Tuples of relation have no specific order.

All attributes in a relation are atomy. Each cell of relation contains exactly one values.

primary key → Eid

↓ attributes, column, field

row →

Eid	Ename	Designation	salary	address
1	Ram	HOD	80,000	pandharpur
2	Monali	professor	70,000	-11-
3	Geeta	HOD	80,000	-11-

cardinality

Degree

Row, records or tuple -

Row is also called record or tuple. It contain specific information of each entry in the table.

It is horizontal in a table.

Property

- No two records are identical each others.
- All records of a relation have the same no. of entities. The order of rows is irrelavent.
- They are identify thy there contents not there position.

column-

column is vertical entities in the table which contains all information associated with a specific field.

For examples, Ename is a column which contain all information about empolyees name.

Data item or cell -

The smallest unit of data in the table is the individual data item. It is stored at insertion of tuples and attribute.

Degree -

Total no. of attribute that comprises relation or table is known as degree of table.

Cardinality -

The total no. of tuples at any one time in relation is known as table of cardinality.

The relation who cardinality is zero is an empty table.

Q.2) Explain mapping cardinality with example.

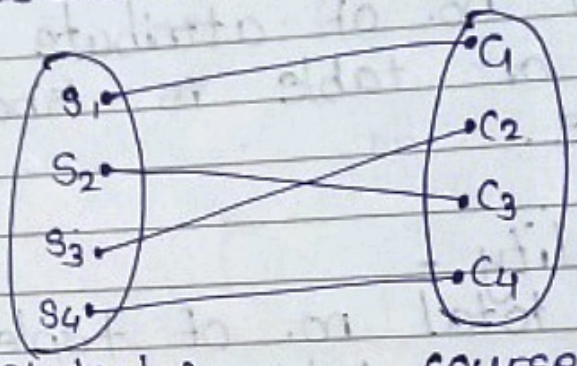
→ Cardinality ratio express the no. of entities to which other Entity can be associated via relationship set mapping cardinalities are most usefull in describing binary relationship sets although they can constribute to the discription of relationship sets that involved more than two entity set.

There are 4 types of mapping cardinality.

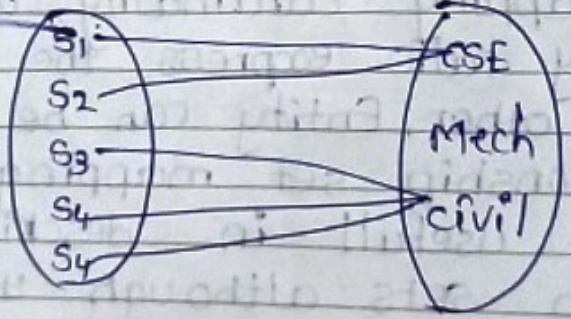
1) One to one
2) Many to one

3) one to many
4) Many to many

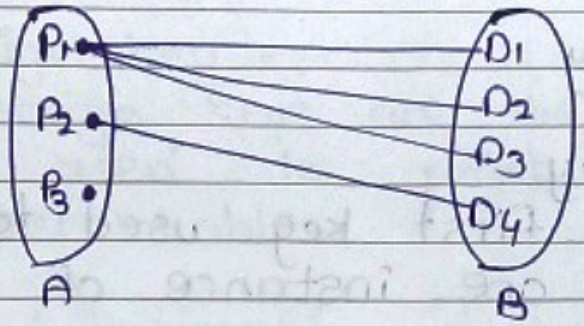
1) One to one -
An entity in set A is an associ with atmost one entity in set B a B is associated with atmost one enti in A.



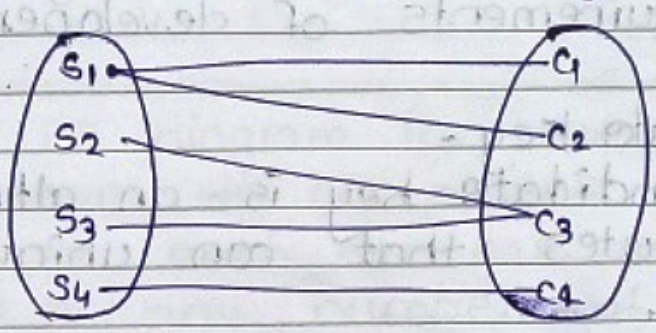
2) Many to one -
An entity in set A is associated atmost one entity in set B.



3) One to many -
An entity in set A is associated any number of entity in B if entity B however can be associated with one entity in A.



4) Many to many :-
One or more than one entity from set A that can be associated with one or more than an entity of B.



Q.3) What are types of keys?

→ key play important role in relational database.
keys help to identify relationships uniquely and thus distinguish relationships from each other.

Types of keys :-

1) Primary key
2) candidate key
3) Super key
4) Foreign key
5) Alternate key

6) composite key

1) Primary key -
- It is the first key used to identify one & only one instance of an entity uniquely.
- An entity can contain multiple keys, the key which is most suitable from those ~~fits~~ list becomes a primary key.
- The selection of primary key is based on requirements of developer.

2) Candidate key -
- The candidate key is an altribute or set of attributes that can uniquely identify a tuple.

Minimal super key is candidate key.
- Except for primary key, the remaining attributes are considered a candidate key.
- The candidate key are as strong as primary key.

For example, passport Number, license etc

3) Super key -

A super key is set of attributes that can uniquely identify a tuple.

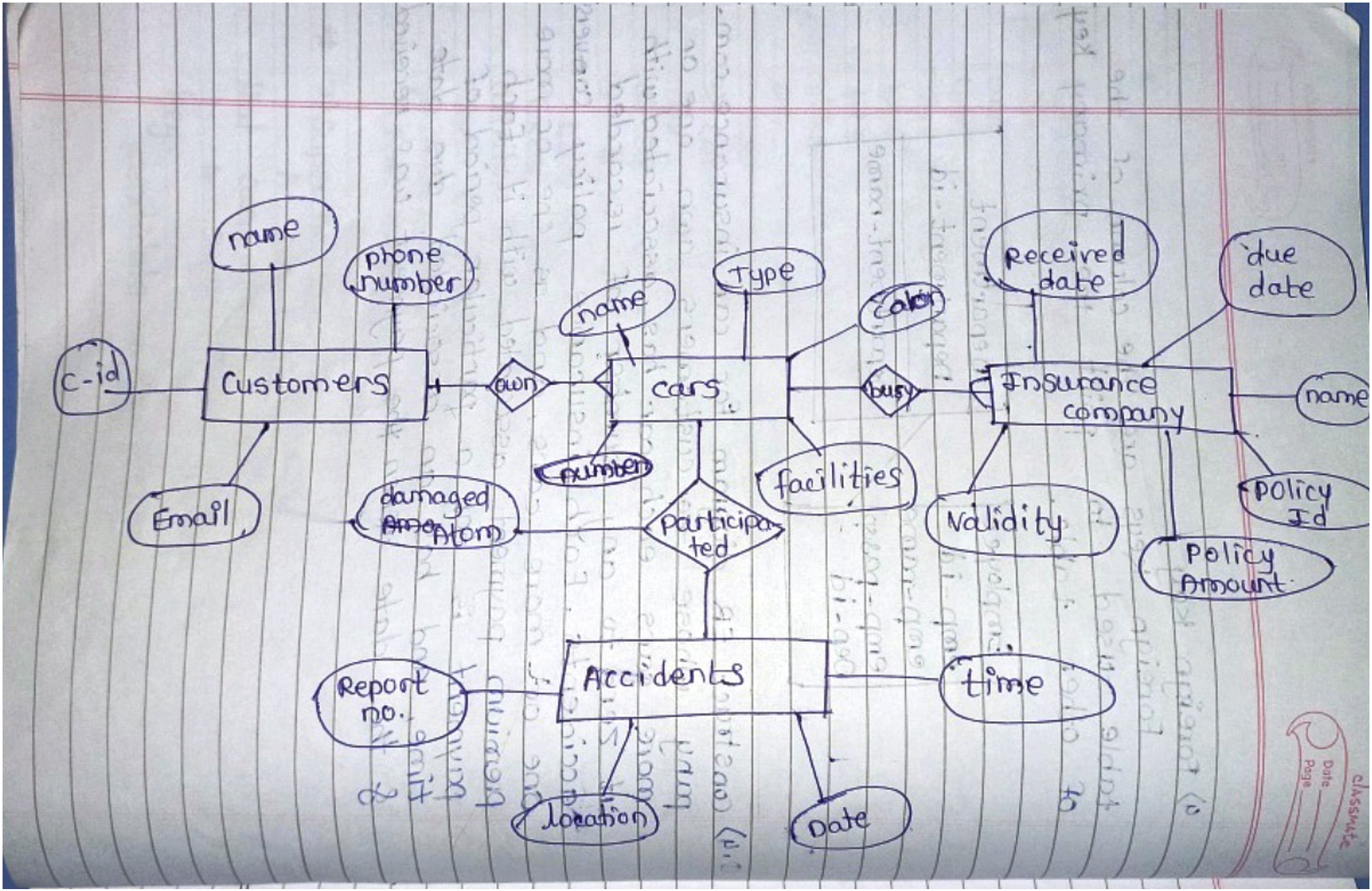
A Super key is superset of candidate key.

candidate key(passport No., license No, SSN, Employee ID)

4) Foreign key -

Foreign keys are the column of the table used to point the primary key of other table.

Q.4) Construct ER diagram for car insurance company whose ~~co~~ customers own one or more cars each car has associated with it zero to any number of recorded accidents. Each insurance policy covers one or more cars, and has one or more premium payment associated with it. Each payment is for a particular period of time, and has an associated due date & the date when the payment was receive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Validity
Policy Id
Policy Amount
Report no.
Accidents
time
location
Date

Q.5. consider the following database as collegeDB.
student(rollno, name, class, subject)
course(c_id, c_name, credit_hours, department)
write SQL statement to do the following update on the database schema.

i) Insert a new student("Johnson", 25, 1, "Maths") in database.

→ Insert into student(rollno, name, class, subject) values(1, "Johnson", 25, "Maths");

ii) update credit_hours=4 where c_id = 101.

c_name = 'Data Science'

i) student

roll-no	name	class	subject
1	johnson	25	Maths

ii) Course

c_id	c_name	credit_hours	department
101	sanjivani	10	Data science

12/9/23