Aman Yadav, Bsc III-d Sem CS, 20207005, GGV/20/05105, DBMS, final exam. 11-03-2022

| Ans No - 4 |

DML - is also known as data manipulation language it allow you to manage the data stored in the database. DML commands only affect one or more rows this offers efficient human interaction.

DML - commands

1) **insert** - this command is used to insert data into rows of table
   syntax: insert into table_name values ('values');

2) **delete** - delete command is used to remove one or more row from the table this can be done by using where clause.
   syntax - delete from table_name where 'condition';

| Ans No - 2 |

RDBMS

1) Redundancy of data is reduced with the help of key and indexes in RDBMS

2) It features multiple layers of security while handing the data.
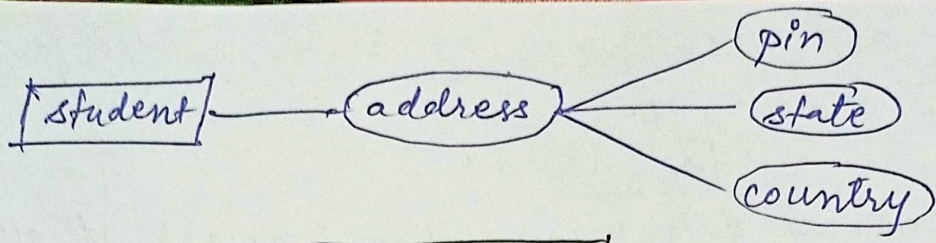
3) Oracle, MYSQL, SQL server are software for RDBMS.

DBMS

1) Data redundancy is common in DBMS.

2) There is only low security while handling the data

3) for pro, XML, microsoft access are the software for DBMS.

| Ans No - 05 |

composite attribute :- An attribute that is a combination of other attribute is known as composite attribute. for example, in student entity, the student address is a composite attribute as an address is composed of other attribute such as pin code, state, country. The attributes which can be devided into sub-parts are called composite attribute.

student —— address — pin
address — state
address — country

Ans NO - 06

foreign key - a foreign key is one of the key that is used to link two tables together via the primary key. It means the column of one table point to the primary key attribute of the other table. It further means that if any attribute is a set as a primary key attribute will work in another table as a foreign key attribute.

foreign key is used to link and maintain relation between two table

Student

sid	sname	course
01	aman	computer
02	nilima	AI
03	prerna	biology
04	ebenezer	mathe
05	abhay	maths

Primary key: sid

Department

sid	dname
01	CSIT
02	CSIT
03	Biology dept.
04	Math dept.
05	Math dept.

foreign key: sid

foreign key help us to maintain refrential integrity. It is clear from above that primary key(sid) also get the refrence from some other table. the table that contains the primary key is known as the refrenced table for other table that is having foreign key.

Ans NO-7

1. Union - union operation is denoted by ∪. union operation eliminate the duplicate tuple. the name and number of attributes must be same. and it won't allow duplicate tuple.

example: R

eid	ename
1	aman
2	nilima

S

eid	ename
3	prerna
4	abhay
5	ebenezer

RUS →

eid	ename
1	aman
2	nilima
3	prerna
4	abhay
5	ebenezer

2) **Intersection operation** - - is denoted by ∩ . both table must have same name and no. of attribute.

Intersection operation between two table helps us to find the common tuples only.

example! R

eid	ename
101	aman
102	nilima

S

eid	ename
101	aman
102	nilima
103	priyvrat

R ∩ S →

eid	ename
101	aman
102	nilima

[Ans No - 9]

Delete :- Delete command helps us to remove ~~two~~ one or many rows. it depends on the condition which is applied in where clause.

syntax: delete from table_name where 'condition';

Drop : By using drop command we can remove entire table from the database. After removing (Dropping) the table from database we can't retrieve.

syntax: drop table table_name;

Difference —

Delete	Drop.
1) This comes under DML command.	1) Drops comes under DDL command.
2) where clause is used to add filtering.	2) No where clause is available.
3). Delete command may face shortage of memory	3) Drop command may cause fragmentation

| Ans NO -110 |

<u>3rd Normal form</u> :— 'A table is in 3rd normal form if following condition holds.

1) table must be in 2nd Normal form.

2). Transitive functional dependency — There should not be any transitive dependency.

<u>Transitive dependency</u> — when a non-prime attribute determine the non-prime attribute, then this is said to be a transitive dependency.

non-prime attribute $\longrightarrow$ non prime attribute.

— we can remove transitive dependency by splitting the npa → npa

roll no.	state	city
1	chhattisgarh	janjgir
2	maharashtra	mumbai
3	andhrapradesh	hyderabad
4	tamil nadu	chennai

CK – {roll no}

FD – { roll no → state, state → city }

it is not in 3NF because of state → city.

| Ans NO -12 |

<u>Acid properties in DBMS.</u>

<u>Atomicity</u> — It ensure that either the transaction occurs completely or it does not occur at all. It ensure that transaction should not occur partially.

<u>Consistency</u> :— This property ensures that integrity constraints are mainteed. It ensure that database remains consistent before and after transaction.

<u>Isolation</u> :— when we have multiple transaction occurs simultaneously without causing any inconsistency. The resultant system after executing all transaction were executed serially one after another.
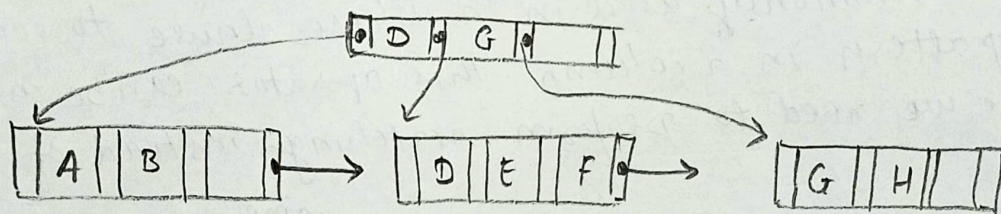
- <u>Durability</u> - This property ensure that all the change made by transaction after its successfully execution are written successfully to the disk. It also ensure that these changes exist permanently and never lost even after system failure.

<div align="center">| Ans No - 13 |</div>

<u>B-Tree</u> - a B tree is a balanced search tree that follows a multi-level index format. The B tree denote actual data pointers. B-tree ensures that all leaf node remains at the same height, thus balanced. The leaf nodes are linked using link list. Therefore B tree support random access as well as sequential access.

<u>structure</u> - every B tree is of order of n and it is fixed.

<u>internal nodes</u>
- it contains atleast $\frac{n}{2}$ pointers except the root node.
- internal node can contain n pointers most.

<u>Leaf nodes:-</u>
- it contains $\frac{n}{2}$ pointers and $\frac{n}{2}$ key values
- at most it can contain n for both pointer and key.
- every leaf node contain on block pointer p to point next leaf node and form a linked list.

<div align="center">| Ans NO - 17 |</div>

Aggregate function is a function where multiple rows are grouped together as input on certain criteria to form a single value of more significant meaning.

count() : this will give the output of total number present inside the particular column.

id	name	sal,
1	A	80
2	B	40
3	C	60

count(*) ; will give 3 as output.

sum() ; this will give the sum of a specific column like sum(sal) ; will give output as 180.

min() ; this will give the minimum value from the column like min(sal) ; will give output 40.

[Ans No-18]

a) Like. Like is a logical operator that is used to determine wheather a specified character, string matches a specifie-d pattern it is commonly used in a where clause to search for a specific pattern in a column. this operator can be useful in cases where we need to perform matching instead of equal or not equal.

syntax : select name from table-name where^ like '_a%';
                                              name

b) between :- between keyword allow you to easily test if an expression which is in range of values (inclusion) the values can be text, numbers, date.

syntax :- select name from table-name between (__'); this will give inclusion value from conditions.

[Ans No - 19]

Group by statement groups row that have same values into summary of rows, group by clause is often used with aggregate function. to group the result set by one or more column
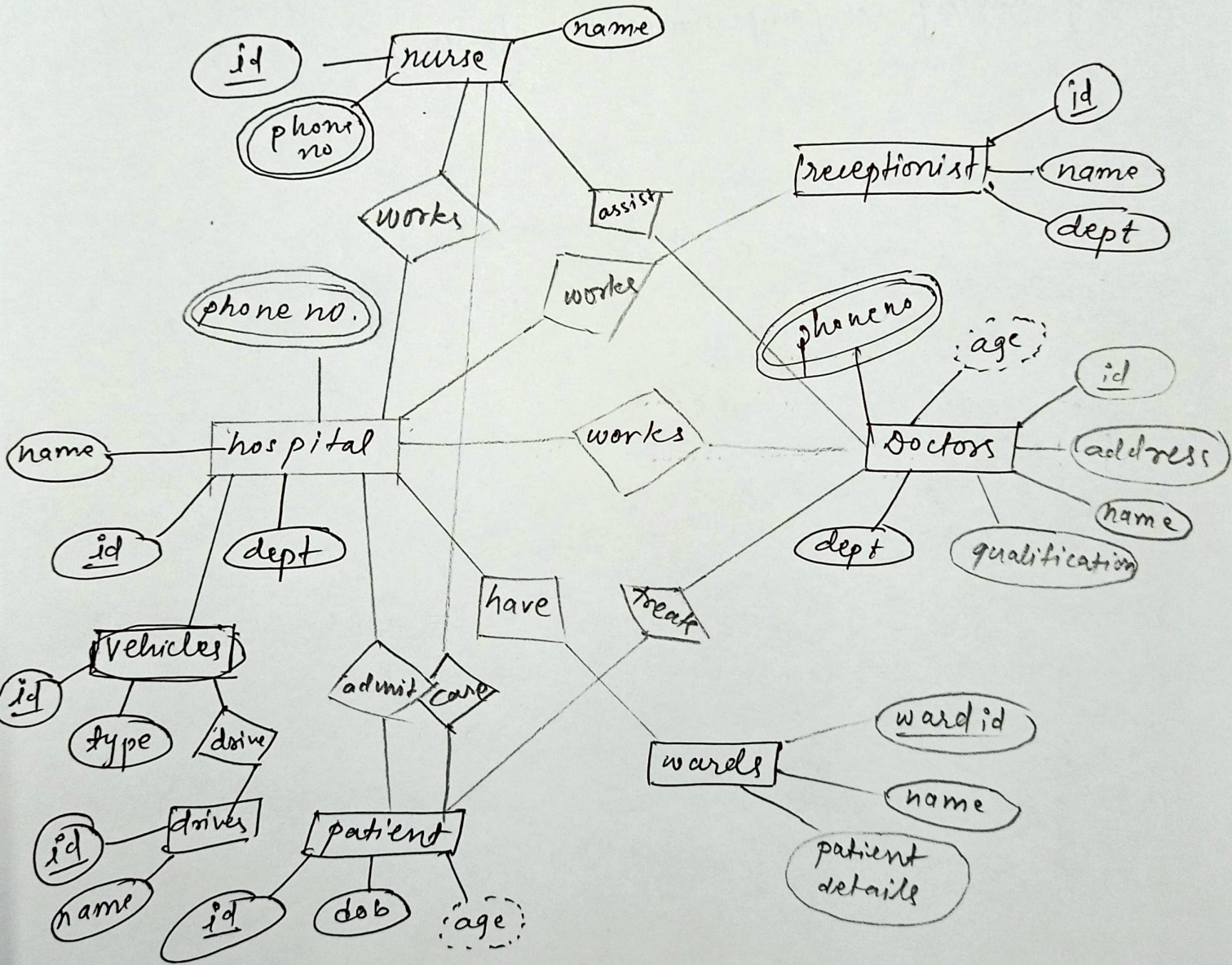
syntax:

select coulumn-name from table-name where condition group by column-name, order by column-name;

we can also use desc asc and aggregate functions with this.

Ans NO-14

⊕ Entity Relationship Diagram of Hospital Manage-ment

a. select emp. ename, emp. street, emp. city from emp join works on emp. ename = works. ename where vcompany-name = "satyam";
works.

b. select company-name, city from company group by city having company-name = "infosys";