SESSION 2

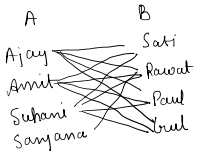
13 June 2024 18:44

What is self-join and Cross join.

Table → A

Self Join → A join A

Cross Join → Joining each & every row of a table to each & every row of another table.



Cartesian Product [4×4]
= 16 rows

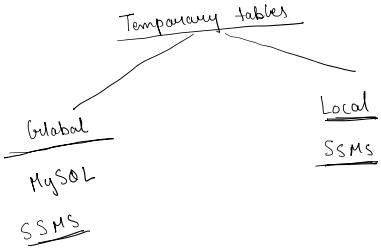
What is the difference between having and where clause?

where → filter data from original table.

having → Grouped → filter

What are temporary tables and what is the difference between global temporary and local temporary?

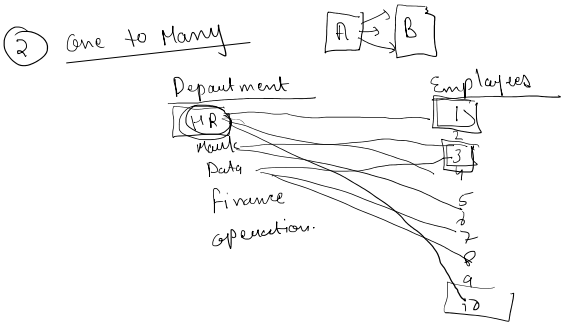
temporary tables → virtual, that are not stored in the memory, they are only active for an instance



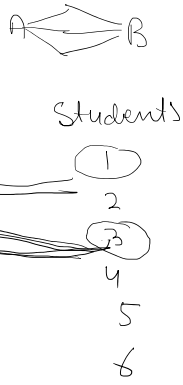
What types of relationships are used in MYSql ?

① One to one [A B]

② One to Many



③ Many to Many



→ one to one.

→ one to Many.

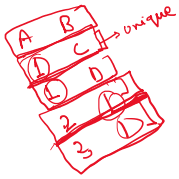
→ Many to Many.

What are Different types of constraints used in SQL ?

- CONSTRAINT → are some commands to control the entry of data in database

Types of Constraints

① Primary key → • It will restrict duplicate as well as null values.

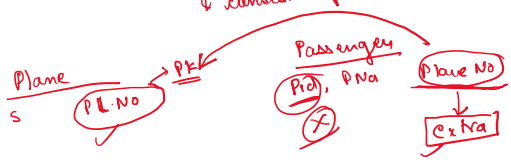


- Clustered index
- Unique and always one in a table.
- It can be on a single column or group of column.

② Unique key → • It restrict duplicate values only.
- It dont restrict null values, until and unless null value becomes a duplicate
- Can be many in number.
- Non-Clustered index is created.

③ Foreign key → It always refers to primary key of another table.

→ It is used to maintain data integrity & consistency.



④ Not Null → dont allow any value to be null in the column.

```
Create table Ajay
(
  roll int not null
)
```

⑤ Default

```
create table warehouse
(
  Pid int
  Price int default (50)
)
```

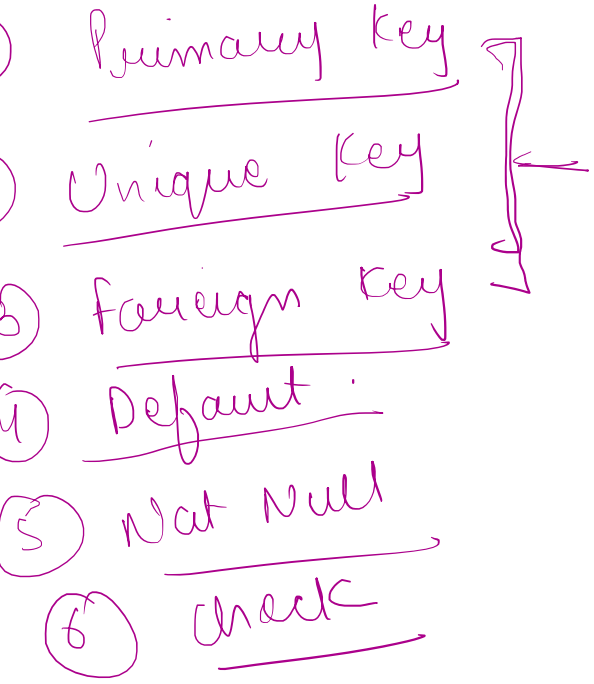
⑥ Check → Check value of column before letting it into table.

```
create table
(
  Pid
  Pn
  Number check (len(No) = 10)
)
```

Is there any difference between Null value and Zero ?

Yes → Null Value means absence of anything [including 0]

0 → Numeric


Primary key
Unique key
Foreign key
Default
Not Null
check


row → empty
→ null

Differences

1) Stored Procedure & Views.

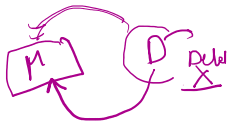
Stored Procedure	Views.
It is set of SQL statements with an assigned name stored in the database.	It is just a virtual table based on the result of SQL query. → Table part
Can have statements of DML operations like insert, update and delete.	It can have only data querying operations such as Select, from, where etc. → No DML
Can contain logic and flow of command statements like if else etc.	It is purely a select query without any procedural logic.
Can accept input parameters and return output parameters.	Does not generally accept parameters
Can handle transaction and control and control commit / rollback behaviour.	Does not support transactions.

2) Stored procedure and functions

Stored Procedure	functions
Values may or may not be changed in original table.	Never change the value of the original table it creates new column for function called.
DML commands are allowed.	DML commands are not allowed.
functions can be used inside Procedure	Procedure cannot be used inside function
Procedure may or may not return values.	Functions always return a value.
We can use procure as a table.	We cannot use functions as table.

for logic building

3) Merge and Join



Merge [Upsert → update, Insert, Delete]	Join
It is used to synchronize data between two tables combining insert, update and delete options into a single statement. Merge is typically used when you want to maintain data consistency and perform conditional updates or insert data based on specific conditions	It is used to combine rows from multiple tables based on related column between them. They are primarily used to retrieve data by combining information from different tables
It is used for manipulating data by updating or deleting rows based on conditions	Retrieve information from multiple tables.

4) Delete and Truncate

Delete	Truncate
• It is a DML command	It is a DDL command
• Just delete all the data.	Drop a table and again create it in the background.
• where clause can be used with delete.	where clause is not used with truncate command
• It is slower way to delete data	Its faster than delete command.

(5) OLAP and OLTP

OLAP	OLTP
It stands for online Analytical Processing	It stands for online transactional Processing.
It is used for analytical queries involving aggregations, comparisons of large volume of data.	It is simple and straightforward involving individual record retrival, update and delete.
It is used for storing historical data and capable of handling large volumes of data.	It stores current or operational data and are designed to handle high volume of small, frequent transactions.
They are slower or have large response time for individual transactions	It prioritizes low-latency responses for individual transactions.

Flexible

Varchar → Stores 1 byte per character

→ Take only ASCII character.

Ajay → 4 bytes

nvarchar ⇒ Stor

⇒ It

Ajay → 8 bytes

Char → It is not flexible, if char is defined

entered 6 characters only, rest 94 c

th blank spaces. but it will occu

es 2 bytes per character.

can take unicode characters also.

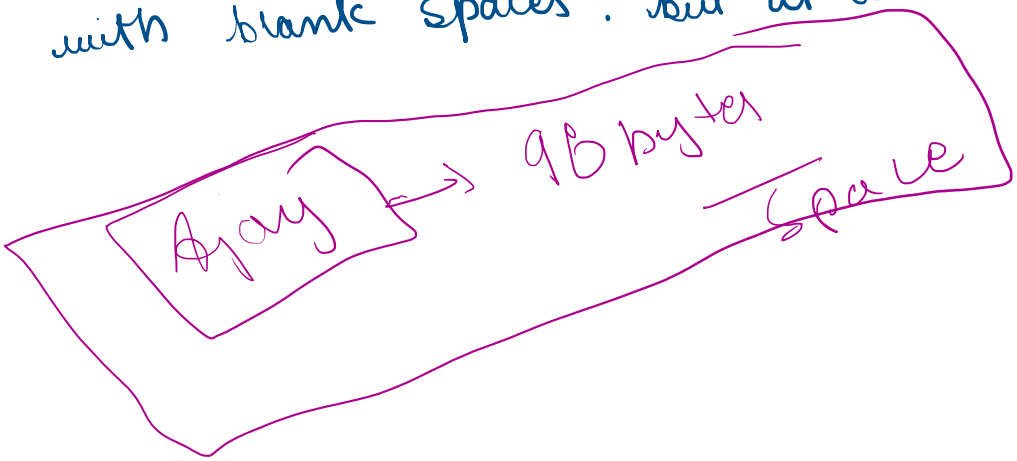
as 100 characters & we have

characters will be filled

py spaces worth 100 characters.

entered ...

with blank spaces. but it will occu



py spaces worth 100 characters.

→ 100 bytes.