17-10-2024

DAY 9

CONSTRAINTS

4. CHECK

- Use for validations (Used for checking Purposes)
- e.g. sal<1000 , age>25,etc.
- To add limitation for perticular column while creating the table

```
create table emp
(
    empno int auto_increment primary key,
    ename varchar (25) check(ename=upper(ename)),
    sal float default 7000
    check (sal between 5001 and 2999999),
    deptno int reference dept(deptno),
    status char(1) default 'T'
    check(status in('T','P','R')),
    comm float not null,
    mob_no char(15) unique,
    check(sal+comm<5000000)
);
```

DEFAULT

- Default is not a constraint
- clause we can use with create table
- I you enter some value then it will take that value ; if nothing is specified then it will take default value

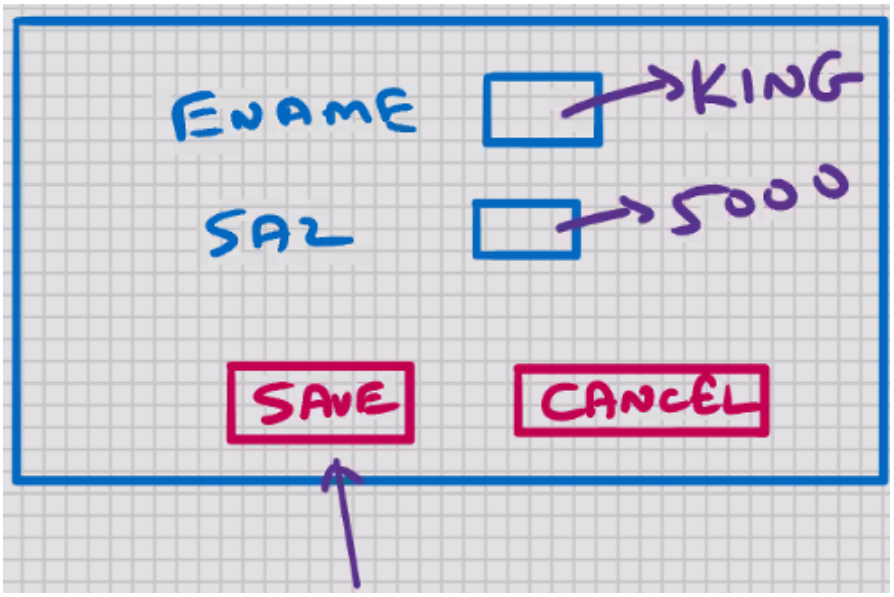
Auto Increment

To make use of DEFAULT value and AUTO_INCREMENT ,use the following INSERT Statement

- Insert into emp(ename,deptno,comm,mob_no) values(.....);
- AUTO_INCREMENT by default start from 1 and increment by 1
- Roll-back and commit have no effect on Auto_Increment (it has been designed in this manner on purposse keeping in view a multi-user

environment)

- to avoid missing number problem :-
- Do not issue the INSERT statement to the database at the time of data entry ; when user does data entry , you store the rows in an array; when user issues a commit, you issue the INSERT statements to databsae followed by COMMIT.



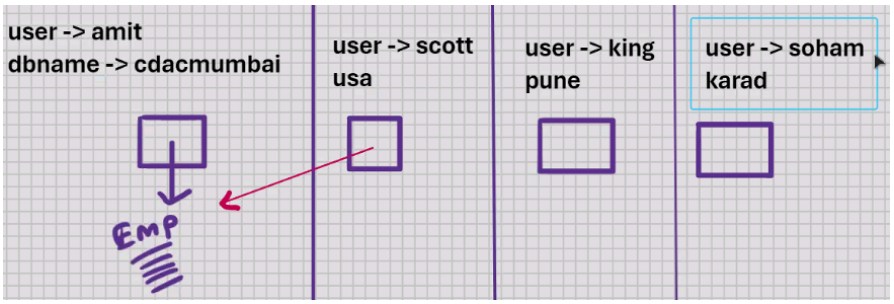
PRIVILEGES

GRANT and REVOKE (DCL)

-Permission to Select :

```
root_mysql> grant select on cdacmumbai.emp to scott@local
```

- *db_name.table_name*



- Permission to Insert :

```
root_mysql> grant insert on cdacmumbai.emp to scott@local
```

- Permission to Update :

```
root_mysql> grant update on cdacmumbai.emp to scott@local
```

- Permission to Delete :

```
root_mysql> grant delete on cdacmumbai.emp to scott@local
```

- We can not grant 'DROP' permission
- All Permission :

```
root_mysql> grant all privileges on cdacmumbai.emp to sco
```

- Permission to All user (Public) :

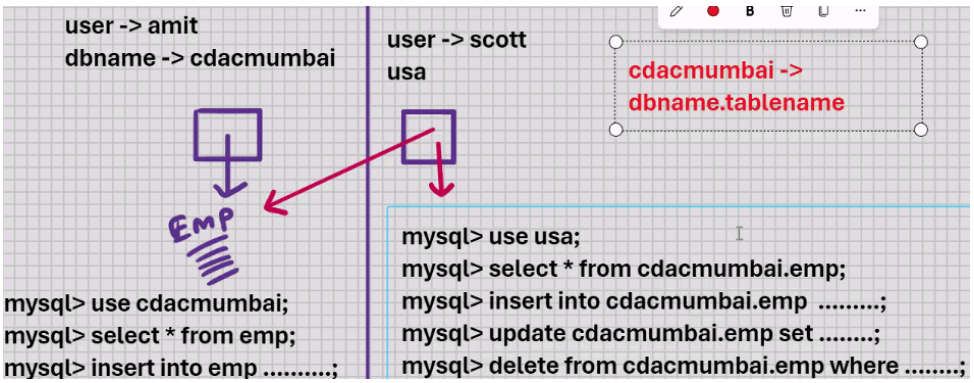
```
root_mysql> grant all privileges on cdacmumbai.emp to pub
```

REVOKE

- Removing the permission (REVOKE)

```
root_mysql>revoke select on cdacmumbai.emo from localhost@Kin
```

Multi user Project :



SYSTEM TABLES

- MySQL Created
- Automatically created when you install MySQL
- 78 system tables in MySQL v9(Actually they are views)
- set of System tables is also known as DATABASE CATALOG
- set of System tables is also known as DATA DICTIONARY
- Stored in *Information_schema*
- login as a root user :-

```
mysql> use information_schema;
mysql> show tables;
```

Database Admin

- All the system tables are READ_ONLY
- DDL for user is DML for System User

TYPES OF DATA

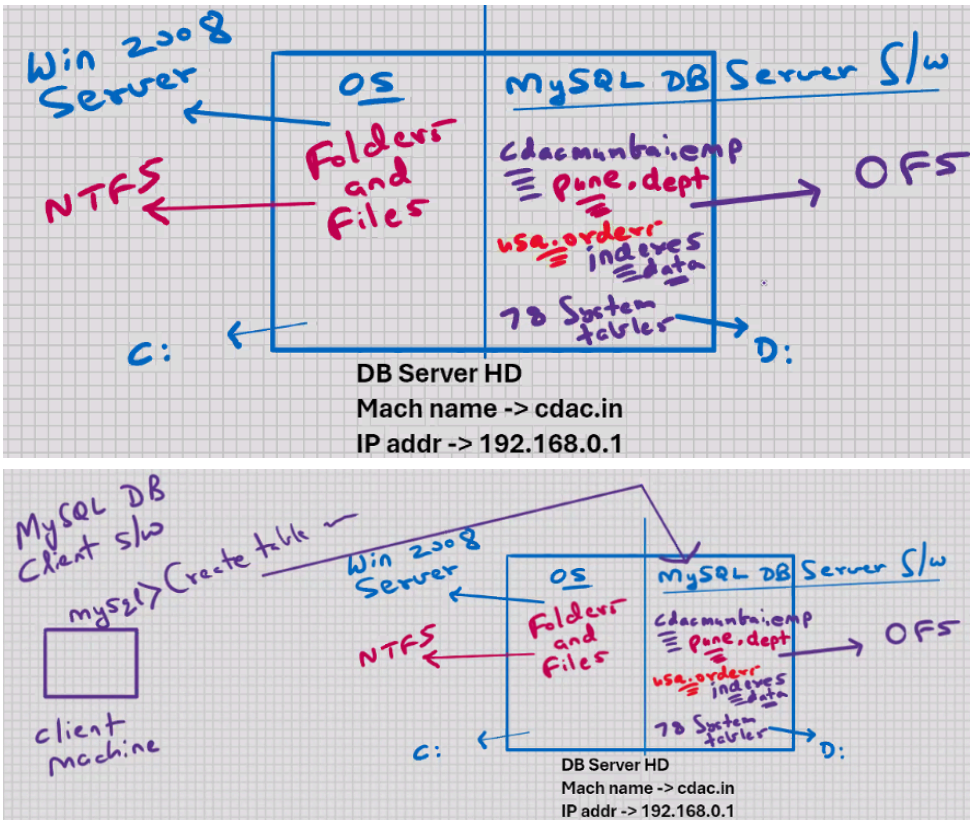
1. User Data

- User Created
- User Tables and Indexes

2. System data (Meta-DATA)

- My SQL Created
- Data is Stored is System tables
- also known as meta-data(data about data)

File Structure (MySQL Architecture):



- It is based on "linux kernel".

STORED OBJECTS

- objects that are stored in the database
- e.r. CREATE TABLES ,INDEXES
- anything that you do with *CREATE* command is a stored object

VIEWS

- Present in all RDBMS and some of the DBMS

EMP				USER	DB
EMPNO	ENAME	SAL	DEPTNO	SCOTT	USA
1	A	5000	1		
2	B	6000	1	**USER**	**DB**
3	C	7000	1	SOHAM	PUNE
4	D	9000	2		
5	E	8000	2		

- View is a handel to a table
- Stores the address of the table

- View is a HD pointer (Stores the address of the table knows as LOCATOR)
- Used for indirect access to the table
- Used for Security Perposes
- Used to Ristrict the access of users

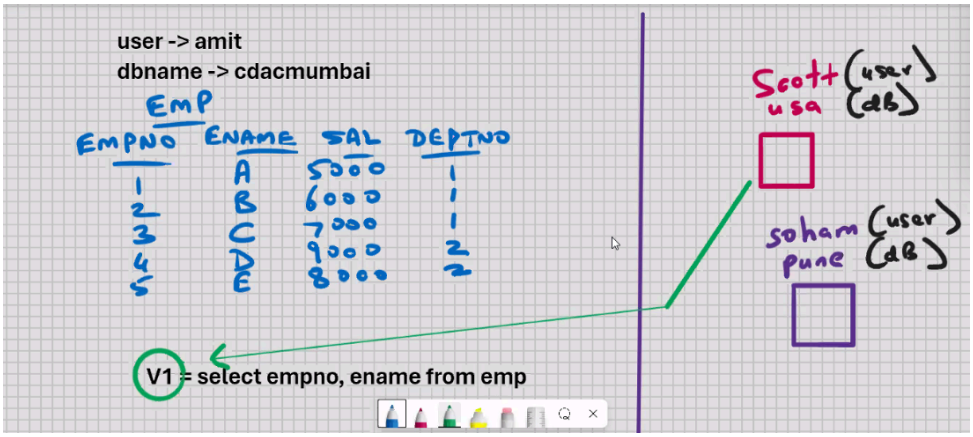
create view:

```
create view view_name;
```

```
amit_mysql> create view V1
            as
            select empno,ename from emp;
```

```
root_mysql> grant select on cdacmumbai.V1 to scott@localhost;
```

```
scott_mysql> select * from cdacmumbai.V1;
```



- Used to restrict the column access
- VIEW DOSE NOT CONTAIN DATA
- Only the definition is stored
- VIEW is a Stored Qurey(Stored in database)
- SELECT Statement on which the view is based it is stored in the DB in the COMPILED FORMAT
- Execution will be very fast
- We are hiding the source code from other/end user

```
root_mysql> grant select,insert on cdacmumbai.V1 to scott@loc
```

```
scott_mysql> insert into cdacmumbai.V1 values(6,'F');
```

- DML Operations can be performed on view
- DML operations done on a view will affect the base table
- Constraints that are specified on the table will enforced even when you insert via the view

Only owner can drop view

```
amit_mysql> drop view V1;
```

```
create view V2
as
select * from emp where deptno=1;
```

- used to restrict the row access.

```
create view V2
as
select * from emp where deptno=1 with check option;
```

- View With check option
- Used to enforece diff checks for diff users
- to change the SELECT statement of the view:-

```
drop view V!;
create view V1 as ......;
```

```
create or replace view V1
as
select ename,sal from emp;
```

To find out which is table or which is view

```
show full tables;
```

```
desc emp;
desc v1;
```

```
create or replace view v1
as ename,sal*12 "Annual" from emp;
```

- View based on computed column expression ,function, order by ,group by clause,etc.
- you can select from this viwes
- DML operations are not allowed
- Comman for all RDBMS

```
create or replace view v1
as
select dname.ename from emp,dept
where dept.deptno=emp.deptno;

//for granted user
select * from V1;
```

-view based on join ,subquery,union,etc. To see the select statement on which the view is based:-

```
show create view v1;
```

- output--> V1= select.....
- output--> V2= select.....

View based on view is allowed

1.

- union >255 selectr statement
- sub-query> 255 levels
- function within function>255

2.

- join of 40 tables

- complex queries can be stored in view definition