DBT

(Database Technologies)

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Software Development Tools of MySQL

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- MySQL Enterprise Backup

- MySQL Enterprise High Availability

- MySQL Enterprise Encryption

- MySQL Enterprise Monitor

- MySQL Query Analyzer

- etc.

MySQL Datatypes

- Char

- Varchar

- Tinytext

- Text

- Mediumtext

- Longtext

- Binary

- Varbinary

- Tinyblob

- Blob

- Mediumblob

- Longblob

- Enum

- Set

(Int Datatypes could be Signed or Unsigned):-

- Tinyint

- Smallint

- Mediumint

- Int

- Bigint

- Float

- Double

- Decimal

- Bit

- Boolean

- Date

- Time

- Datetime

- Year

Create table, Insert and Select statements

create table emp
(
Empno char(4),
Ename varchar(25),
Sal float,
City varchar(15),
Dob date
);

Insert into emp
Values('1', 'Amit', 5000, 'Mumbai', '1995-05-04');

Select * from emp;

Select empno, ename from emp;

Select * from emp
where sal > 2000;

Select * from emp
Where sal > 2000 and sal < 3000;

Select * from emp
where job = 'MANAGER';

Select * from emp
where job = 'MANAGER' or job = 'CLERK';

select ename, sal*12 from emp;

select ename, sal*12 "ANNUAL" from emp;

select distinct job from emp;

select deptno, job, ename, sal, hiredate from emp
order by ename;

select deptno, job, ename, sal, hiredate from emp
order by ename desc;

select deptno, job, ename, sal, hiredate from emp
order by deptno;

select deptno, job, ename, sal, hiredate from emp
order by deptno, job;

```sql
select deptno, job, ename, sal, hiredate from emp
order by deptno desc, job;


select * from emp
where ename like 'A%';


select * from emp
where ename like '%A';


select * from emp
where ename like '%A%';


select * from emp
where ename like '_ _A%';


select * from emp
where sal between 2000 and 3000;


select * from emp
where city in ('Mumbai' 'Delhi');
```

Some basic commands post logon

Show databases;

Use mysql;

Select user from user;

Use [db_name];

Show tables;

Desc emp;

Functions

Char Functions

Select Concat(fname,lname) from emp;

Select Upper(fname) from emp;

Select Lower(fname) from emp;

Select Lpad(ename,25,' ') from emp;

Select Lpad(ename,25,'*') from emp;

Select Rpad(ename,25,' ') from emp;

Select Rpad(ename,25,'*') from emp;

Select Ltrim(ename) from emp;

Select Rtrim(ename) from emp;

Select Trim(ename) from emp;

Select Substr(ename,3) from emp;

Select Substr(ename,3,2) from emp;

Select Replace(ename,'un','xy') from emp;

Select Instr(ename,'un') from emp;

Select Length(ename) from emp;

Select Ascii(ename) from emp;

Select char(65 using utf8) from dual;

Select * from emp where soundex(ename) = soundex('Aroon');

Number Functions

Select Round(sal) from emp;

Select Truncate(sal,0) from emp;

Select Ceil(sal) from emp;

Select Floor(sal) from emp;

Select Sign(-15) from dual;

Select Mod(9,5) from dual;

Select Sqrt(81) from dual;

Select Power(10,3) from dual;

Select Abs(-10) from dual;

MySQL Date Functions

Select Sysdate() from dual;

select adddate(sysdate(),2) from dual;

select datediff(sysdate(),hiredate) from emp;

SELECT DATE_ADD(hiredate, INTERVAL 2 MONTH) from emp;

SELECT DATE_ADD(hiredate, INTERVAL 1 year) from emp;

Select last_day(hiredate) from emp;

select dayname(sysdate()) from dual;

Select addtime('1997-01-15 10:00:00.00000','1') from dual;

Environment Functions

Select User() from dual;

Show character set;

Sub-queries

```
select ename from emp
   where sal =
   (select min(sal) from emp);


select * from emp
   where deptno =
   (select deptno from emp
   where ename = 'Thomas');


select * from emp
   where job =
   (select job from emp
   where ename = 'Kirun');
```

Indexes

- To see which all indexes are created for specific table:-

show indexes from emp;

- To see all indexes on all tables in the database:-

use information_schema;
Select * from statistics;

- To drop the index:-

Drop index indexname on emp;

Alter table

Rename table emp to employees;

alter table emp add panno char(10);

alter table emp drop column panno;

alter table emp modify ename varchar(30);

Alter table emp modify ename varchar(20);

Alter table emp modify empno char(4);

Insert into emp select * from emp2;

Create table emp_copy
As
Select * from emp;

Constraints

Primary key constraint

select * from
information_schema.table_constraints;

Select * from
information_schema.key_column_usage where
table_name = 'EMP';

Not null constraint:-

• To see not null columns:-

Desc emp;

Alter table emp modify ename varchar(25) null;

Unique constraint

Show indexes from emp;

- Unique constraint is also an index so to drop it use:-

drop index deptno on emp;

drop index mob_no on emp;

Foreign key constraint

Alter table emp drop foreign key fk_emp_deptno;

- Can specify on delete cascade and on update cascade

- To disable the foreign key constraint:-
  For current connection:-
  set foreign_key_checks = 0;
  set foreign_key_checks = 1;
For all connections:-
  set global foreign_key_checks = 0;
  set global foreign_key_checks = 1;

MySQL-PL

Stored Procedures

```
delimiter //
create procedure abc()
Begin
insert into tempp values(1, 'Hello');
end //
delimiter ;
```

- To call the stored procedure:-

```
call abc();
```

```
delimiter //
create procedure abc()
Begin
declare x int;
set x = 10;
insert into tempp values(x, 'Hello');
end //
delimiter ;
```

```
delimiter //
create procedure abc()
Begin
declare x int(4) default 10;
insert into tempp values(x, 'Hello');
end //
delimiter ;


delimiter //
create procedure abc()
Begin
declare x char(15) default 'CDAC';
insert into tempp values(1, x);
end //
delimiter ;
```

```
delimiter //
create procedure abc()
Begin
declare x char(15) default 'KING';
declare y float(7,2) default 3000;
declare z float(2,1) default 0.4;
declare hra float(7,2);
set hra = y*z;
insert into tempp values(y,x);
insert into tempp values(hra,'HRA');
end //
delimiter ;


delimiter //
create procedure abc()
Begin
declare x int(4);
select sal into x from emp where ename = 'KING';
insert into tempp values(x, 'KING');
end //
delimiter ;
```

```
delimiter //
create procedure abc()
Begin
declare x int(4);
declare y char(15);
select sal, job into x, y from emp where ename =
'KING';
insert into tempp values(x, y);
end //
delimiter ;
```

• To see which all procedures are created:-

show procedure status; <- shows all procedures in all schemas

show procedure status where name like 'A%';

• To view the source code of stored procedure:-

show create procedure abc;

Remarks

- -- for Single Line comment

- /* … */ for Multi-Line comment

If statement

```
delimiter //
create procedure abc()
Begin
declare x int(4);
select sal into x from emp where ename = 'KING';
if x > 4000 then
insert into tempp values(x, 'High sal');
end if;
end //
delimiter ;
```

```
delimiter //
create procedure abc()
Begin
declare x int(4);
select sal into x from emp where ename = 'KING';
if x > 5000 then
insert into tempp values(x, 'High sal');
Else
insert into tempp values(x, 'Low sal');
end if;
end //
delimiter ;
```

```
delimiter //
create procedure abc()
Begin
declare x int(4);
select sal into x from emp where ename = 'KING';
if x > 4000 then
insert into tempp values(x, 'High sal');
else
if x < 5000 then
insert into tempp values(x, 'Low sal');
else
insert into tempp values(x, 'Medium sal');
end if;
end if;
end //
delimiter ;
```

```sql
delimiter //
create procedure abc()
Begin
declare x int(4);
select sal into x from emp where ename = 'KING';
if x > 5000 then
insert into tempp values(x, 'High sal');
elseif x < 5000 then
insert into tempp values(x, 'Low sal');
else
insert into tempp values(x, 'Medium sal');
end if;
end //
delimiter ;
```

Case statement

```
delimiter //
create procedure abc()
Begin
declare x int(4);
select sal into x from emp where ename = 'KING';
case
when x > 5000 then
     insert into tempp values(x, 'High sal');
when x < 5000 then
     insert into tempp values(x, 'Low sal');
else
     insert into tempp values(x, 'Medium sal');
end case;
end //
delimiter ;
```

Loops

While loop

WHILE expression DO

    ………………………….;

    ………………………….;

END WHILE;

```
delimiter //
create procedure abc()
Begin
declare x int default 1;
while x < 10 do
    insert into tempp values(x, 'in while loop');
    set x = x + 1;
end while;
end //
delimiter ;
```

```
delimiter //
create procedure abc()
Begin
declare x int default 1;
declare y int default 1;
while x < 10 do
      while y < 10 do
      insert into tempp values(y, 'in y loop');
      set y = y + 1;
      end while;
      insert into tempp values(x, 'in x loop');
      set x = x + 1;
end while;
end //
delimiter ;
```

Repeat loop (similar to Do While loop)

```
REPEAT
    ………………………………;
    ………………………………;
UNTIL expression
END REPEAT;
```

Repeat loop

```
delimiter //
create procedure abc()
Begin
declare x int default 1;
repeat
    insert into tempp values(x, 'in loop');
    set x = x + 1;
    until x > 5
end repeat;
end //
delimiter ;
```

Stored Functions

```
delimiter //
create function abc()
returns int
Deterministic
Begin
return 10;
end;
//
```

• To see which all functions are created:-

show function status; <- shows all functions in all schemas

show function status where name like 'A%';

• To view the source code of stored function:-

show create function abc;