**Commands**

SQL> create table instructor (ID char(5),NAME varchar(20),DEPT\_NAME varchar(20),SALARY numeric(8,2));

Table created.

SQL> insert into instructor values('10001','ravi','CSE',10000.00);

1 row created.

SQL> select \* from instructor;

ID NAME DEPT\_NAME SALARY

----- -------------------- -------------------- ----------

10001 ravi CSE 10000

SQL> delete from student;

4 rows deleted.

SQL> delete from instructor;

1 row deleted.

SQL> select \* from instructor;

no rows selected

SQL> drop table instructor;

Table dropped.

SQL> select \* from instructor;

select \* from instructor

\*

ERROR at line 1:

ORA-00942: table or view does not exist

SQL> create table instructor (ID char(5),NAME varchar(20) NOT NULL,DEPT\_NAME varchar(20),SALARY numeric(8,2),PRIMARY KEY(ID),UNIQUE(DEPT\_NAME));

Table created.

SQL> create table instructor (ID char(5) PRIMARY KEY,NAME varchar(20) NOT NULL,DEPT\_NAME varchar(20),SALARY numeric(8,2) UNIQUE,FOREIGN KEY(DEPT\_NAME) REFERENCES DEPARTMENT);

Table created.

SQL> ALTER TABLE DEPARTMENT ADD DID VARCHAR(20);

Table altered.

SQL> ALTER TABLE DEPARTMENT DROP COLUMN DID;

Table altered.

SQL> ALTER TABLE DEPARTMENT MODIFY BUDGET VARCHAR(20);

Table altered.

SQL> DESC DEPARTMENT;

Name Null? Type

----------------------------------------- -------- ----------------------------

DEPT\_NAME NOT NULL VARCHAR2(15)

BUILDING VARCHAR2(20)

BUDGET NUMBER(38)

DID VARCHAR2(20)

SQL> DESC INSTRUCTOR;

Name Null? Type

----------------------------------------- -------- ----------------------------

ID NOT NULL CHAR(5)

NAME NOT NULL VARCHAR2(20)

DEPT\_NAME VARCHAR2(20)

SALARY NUMBER(8,2);

SQL> select \* from instructor;

no rows selected

SQL> insert into instructor values('10001','ravi','CSE',10000.00);

insert into instructor values('10001','ravi','CSE',10000.00)

\*

ERROR at line 1:

ORA-02291: integrity constraint (SYSTEM.SYS\_C004030) violated - parent key not

found

SQL> insert into instructor values('10001','ravi','CSE',10000.00);

insert into instructor values('10001','ravi','CSE',10000.00)

\*

ERROR at line 1:

ORA-02291: integrity constraint (SYSTEM.SYS\_C004030) violated - parent key not

found

SQL> insert into DEPARTMENT values('CSE','BLOCK-A','10000');

1 row created.

SQL> insert into instructor values('10001','ravi','CSE',10000.00);

1 row created.

SQL> select \* from instructor;

ID NAME DEPT\_NAME SALARY

----- -------------------- -------------------- ----------

10001 ravi CSE 10000

SQL> select \* from DEPARTMENT;

DEPT\_NAME BUILDING BUDGET

--------------- -------------------- --------------------

CSE BLOCK-A 10000

SQL> SELECT ID,NAME FROM INSTRUCTOR;

ID NAME

----- --------------------

10001 ravi

SQL> insert into instructor values('10001','ravi','CSE',10000.00);

insert into instructor values('10001','ravi','CSE',10000.00)

\*

ERROR at line 1:

ORA-00001: unique constraint (SYSTEM.SYS\_C004028) violated

SQL> insert into instructor values('10002',NULL,'ECE',20000.00);

insert into instructor values('10002',NULL,'ECE',20000.00)

\*

ERROR at line 1:

ORA-01400: cannot insert NULL into ("SYSTEM"."INSTRUCTOR"."NAME")

SQL> select all name from instructor;

NAME

--------------------

sai

sai

sai

SQL> select distinct name from instructor;

NAME

--------------------

Sai

SQL> select id, salary/1 from instructor;

ID SALARY/1

-------------------- ----------

1 1

1 1

1 2

SQL> select id,salary/1 sal from instructor;

ID SAL

-------------------- ----------

1 1

1 1

1 2

SQL> select name from instructor;

NAME

--------------------

sai

sai

sai

SQL> select all name from instructor;

NAME

--------------------

sai

sai

sai

SQL> select name from instructor where salary=2;

NAME

--------------------

Sai

SQL> select name from instructor where salary=2 and dept\_name='cse';

NAME

--------------------

Sai

SQL> select name from instructor where salary=2 or dept\_name='cse';

NAME

--------------------

sai

sai

sai

SQL> select \* from instructor,department;

ID NAME DEPT\_NAME SALARY

-------------------- -------------------- -------------------- ----------

DID DEPT\_NAME

-------------------- --------------------

1 sai cse 1

1 cse

1 sai cse 1

1 cse

1 sai cse 2

1 cse

SQL> select name,id from instructor,department where instructor.dept\_name=department.dept\_name;

NAME ID

-------------------- --------------------

sai 1

sai 1

sai 1

SQL> select distinct I.name from instructor I where I.dept\_name='cse';

NAME

--------------------

Sai

SQL> select name from instructor where name like '%s%';

NAME

--------------------

sai

sai

sai

SQL> select name from instructor where name like 's\_\_';

NAME

--------------------

sai

sai

sai

SQL> select name from instructor where name like '\_a\_';

NAME

--------------------

sai

sai

sai

SQL> select dept\_name from department order by dept\_name;

DEPT\_NAME

--------------------

cse

ece

it

SQL> select dept\_name from department order by dept\_name desc;

DEPT\_NAME

--------------------

it

ece

cse

SQL> select salary from instructor where salary between 1 and 2;

SALARY

----------

1

1

2

SQL> select \* from department where did=4 union select \* from department where did=3;

DID DEPT\_NAME

-------------------- --------------------

3 a

3 eee

3 eee%e

3 eee\_e

4 a

SQL> select \* from department where did=4 union all select \* from department where did=3;

DID DEPT\_NAME

-------------------- --------------------

4 a

3 eee

3 eee\_e

3 eee%e

3 a

SQL> select \* from department where did=4 intersect all select \* from department where did=3;

select \* from department where did=4 intersect all select \* from department where did=3

\*

ERROR at line 1:

ORA-00928: missing SELECT keyword

SQL> select \* from department where did=4 intersect select \* from department where did=3;

no rows selected

SQL> select \* from department where did=4 intersect all select \* from department where did=3;

select \* from department where did=4 intersect all select \* from department where did=3

\*

ERROR at line 1:

ORA-00928: missing SELECT keyword

SQL> select \* from department where did=4 except all select \* from department where did=3;

select \* from department where did=4 except all select \* from department where did=3

\*

ERROR at line 1:

ORA-00933: SQL command not properly ended

SQL> select \* from department where did=4 except select \* from department where did=3;

select \* from department where did=4 except select \* from department where did=3

\*

ERROR at line 1:

ORA-00933: SQL command not properly ended

SQL> select \* from department where dept\_name is null;

no rows selected

SQL> insert into department values(2,);

insert into department values(2,)

\*

ERROR at line 1:

ORA-00936: missing expression

SQL> insert into department values(2,'');

1 row created.

SQL> select \* from department where dept\_name is null;

DID DEPT\_NAME

-------------------- --------------------

2

SQL> select \* from department where dept\_name is not null;

DID DEPT\_NAME

-------------------- --------------------

1 cse

2 ece

3 eee

3 eee\_e

3 eee%e

4 a

1 a

2 a

3 a

9 rows selected.

SQL> select avg(salary) from instructor;

AVG(SALARY)

-----------

1.33333333

SQL> select \* from instructor;

ID NAME DEPT\_NAME SALARY

-------------------- -------------------- -------------------- ----------

1 sai cse 1

1 sai cse 1

1 sai cse 2

SQL> select avg(salary) from department;

select avg(salary) from department

\*

ERROR at line 1:

ORA-00904: "SALARY": invalid identifier

SQL> select avg(did) from department;

AVG(DID)

----------

2.4

SQL> select avg(did) from department where did=3;

AVG(DID)

----------

3

SQL> select avg(did) from department where did=2;

AVG(DID)

----------

2

SQL> select avg(did) from department where dept\_name='eee';

AVG(DID)

----------

3

SQL> select avg(did) from department where dept\_name='a';

AVG(DID)

----------

2.5

SQL> select avg(did),dept\_name from department group by dept\_name;

AVG(DID) DEPT\_NAME

---------- --------------------

3 eee%e

2

1 cse

3 eee

2.5 a

2 ece

3 eee\_e

7 rows selected.

SQL> select avg(salary),dept\_name,name from instructor group by dept\_name;

select avg(salary),dept\_name,name from instructor group by dept\_name

\*

ERROR at line 1:

ORA-00979: not a GROUP BY expression

SQL> select avg(salary),dept\_name from instructor group by dept\_name;

AVG(SALARY) DEPT\_NAME

----------- --------------------

1.33333333 cse

SQL> select avg(did),dept\_name from department group by dept\_name;

AVG(DID) DEPT\_NAME

---------- --------------------

3 eee%e

2

1 cse

3 eee

2.5 a

2 ece

3 eee\_e

7 rows selected.

SQL> select avg(did),dept\_name from department group by dept\_name having avg(did)>2;

AVG(DID) DEPT\_NAME

---------- --------------------

3 eee%e

3 eee

2.5 a

3 eee\_e

SQL> select sum(salary),dept\_name from instructor group by dept\_name;

SUM(SALARY) DEPT\_NAME

----------- --------------------

4 cse

SQL> select count(salary),dept\_name from instructor group by dept\_name;

COUNT(SALARY) DEPT\_NAME

------------- --------------------

3 cse

SQL> select count(did),dept\_name from department;

select count(did),dept\_name from department

\*

ERROR at line 1:

ORA-00937: not a single-group group function

SQL> select count(did) from department;

COUNT(DID)

----------

10

SQL> select count(did),dept\_name from department;

select count(did),dept\_name from department

\*

ERROR at line 1:

ORA-00937: not a single-group group function

SQL> select count(did) from department;

COUNT(DID)

----------

10

SQL> select count(\*) from department;

COUNT(\*)

----------

10

SQL> select \* from department;

DID DEPT\_NAME

-------------------- --------------------

1 cse

2 ece

3 eee

3 eee\_e

3 eee%e

4 a

1 a

2 a

3 a

2

10 rows selected.

SQL> select count(did) from department;

COUNT(DID)

----------

10

SQL> select count(dept\_name) from department;

COUNT(DEPT\_NAME)

----------------

9

SQL> select min(did) from department;

MIN(DID)

--------------------

1

SQL> select max(did) from department;

MAX(DID)

--------------------

4

SQL> select \* from department cross join instructor;

DID DEPT\_NAME ID

-------------------- -------------------- --------------------

NAME DEPT\_NAME SALARY

-------------------- -------------------- ----------

1 cse 1

sai cse 1

1 cse 1

sai cse 1

1 cse 1

sai cse 2

DID DEPT\_NAME ID

-------------------- -------------------- --------------------

NAME DEPT\_NAME SALARY

-------------------- -------------------- ----------

1 cse 2

ravi civil 3

2 ece 1

sai cse 1

2 ece 1

sai cse 1

DID DEPT\_NAME ID

-------------------- -------------------- --------------------

NAME DEPT\_NAME SALARY

-------------------- -------------------- ----------

2 ece 1

sai cse 2

2 ece 2

ravi civil 3

3 eee 1

sai cse 1

DID DEPT\_NAME ID

-------------------- -------------------- --------------------

NAME DEPT\_NAME SALARY

-------------------- -------------------- ----------

3 eee 1

sai cse 1

3 eee 1

sai cse 2

3 eee 2

ravi civil 3

DID DEPT\_NAME ID

-------------------- -------------------- --------------------

NAME DEPT\_NAME SALARY

-------------------- -------------------- ----------

4 it 1

sai cse 1

4 it 1

sai cse 1

4 it 1

sai cse 2

DID DEPT\_NAME ID

-------------------- -------------------- --------------------

NAME DEPT\_NAME SALARY

-------------------- -------------------- ----------

4 it 2

ravi civil 3

16 rows selected.

SQL> select \* from department natural inner join instructor;

DEPT\_NAME DID ID

-------------------- -------------------- --------------------

NAME SALARY

-------------------- ----------

cse 1 1

sai 1

cse 1 1

sai 1

cse 1 1

sai 2

SQL> select \* from department natural left outer join instructor;

DEPT\_NAME DID ID

-------------------- -------------------- --------------------

NAME SALARY

-------------------- ----------

cse 1 1

sai 1

cse 1 1

sai 1

cse 1 1

sai 2

DEPT\_NAME DID ID

-------------------- -------------------- --------------------

NAME SALARY

-------------------- ----------

eee 3

ece 2

it 4

6 rows selected.

SQL> select \* from department natural right outer join instructor;

DEPT\_NAME DID ID

-------------------- -------------------- --------------------

NAME SALARY

-------------------- ----------

cse 1 1

sai 2

cse 1 1

sai 1

cse 1 1

sai 1

DEPT\_NAME DID ID

-------------------- -------------------- --------------------

NAME SALARY

-------------------- ----------

civil 2

ravi 3

SQL> select \* from department natural full outer join instructor;

DEPT\_NAME DID ID

-------------------- -------------------- --------------------

NAME SALARY

-------------------- ----------

cse 1 1

sai 1

cse 1 1

sai 1

cse 1 1

sai 2

DEPT\_NAME DID ID

-------------------- -------------------- --------------------

NAME SALARY

-------------------- ----------

eee 3

ece 2

it 4

DEPT\_NAME DID ID

-------------------- -------------------- --------------------

NAME SALARY

-------------------- ----------

civil 2

ravi 3

7 rows selected.

SQL> create view view1 as select name,dept\_name from instructor;

View created.

SQL> select \* from view1;

NAME DEPT\_NAME

-------------------- --------------------

sai cse

sai cse

sai cse

ravi civil

SQL> update view1 set name='raju';

4 rows updated.

SQL> select \* from view1;

NAME DEPT\_NAME

-------------------- --------------------

raju cse

raju cse

raju cse

raju civil

SQL> alter view view1 add column id char(10);

alter view view1 add column id char(10)

\*

ERROR at line 1:

ORA-00922: missing or invalid option

SQL> alter table view1 add column id char(10);

alter table view1 add column id char(10)

\*

ERROR at line 1:

ORA-00904: : invalid identifier

SQL> alter table view1 add modify name varchar(10);

alter table view1 add modify name varchar(10)

\*

ERROR at line 1:

ORA-00904: : invalid identifier

SQL> desc instructor;

Name Null? Type

----------------------------------------- -------- ----------------------------

ID VARCHAR2(20)

NAME VARCHAR2(20)

DEPT\_NAME VARCHAR2(20)

SALARY NUMBER(3,2)

SQL> alter table view1 add modify name varchar(10);

alter table view1 add modify name varchar(10)

\*

ERROR at line 1:

ORA-00904: : invalid identifier

SQL> alter table view1 add delete name;

alter table view1 add delete name

\*

ERROR at line 1:

ORA-00904: : invalid identifier

SQL> truncate view view1;

truncate view view1

\*

ERROR at line 1:

ORA-03290: Invalid truncate command - missing CLUSTER or TABLE keyword

SQL> drop view view1;

View dropped.

SQL> insert into view1 values('ravi','civil');

insert into view1 values('ravi','civil')

\*

ERROR at line 1:

ORA-00942: table or view does not exist

SQL> create view view1 as select name,dept\_name from instructor;

View created.

SQL> insert into view1 values('ravi','civil');

1 row created.

SQL> select \* from view1;

NAME DEPT\_NAME

-------------------- --------------------

raju cse

raju cse

raju cse

raju civil

ravi civil

SQL> delete from view1;

5 rows deleted.

SQL> create view view2 as select id,dept\_name from instructor;

View created.

SQL> select \* from view1 cross join view2;

no rows selected

SQL> create view view3 as select id,dept\_name from instructor;

View created.

SQL> select \* from view3 cross join view2;

no rows selected

SQL> select \* from view1;

no rows selected

SQL> select \* from view2;

no rows selected

SQL> select \* from view3;

no rows selected

SQL> drop view view1;

View dropped.

SQL> drop view view2;

View dropped.

SQL> drop view view3;

View dropped.

SQL> create view view3 as select id,dept\_name from instructor;

View created.

SQL> select \* from view3;

no rows selected

SQL> select \* from instructor;

no rows selected

SQL> select \* from department;

DID DEPT\_NAME

-------------------- --------------------

1 cse

2 ece

3 eee

4 it

SQL> create view view1 as select dept\_name from department;

View created.

SQL> select \* from view1;

DEPT\_NAME

--------------------

cse

ece

eee

it

SQL> create view view2 as select did from department;

View created.

SQL> select \* from view2;

DID

--------------------

1

2

3

4

SQL> select \* from view1 cross join view2;

DEPT\_NAME DID

-------------------- --------------------

cse 1

cse 2

cse 3

cse 4

ece 1

ece 2

ece 3

ece 4

eee 1

eee 2

eee 3

DEPT\_NAME DID

-------------------- --------------------

eee 4

it 1

it 2

it 3

it 4

16 rows selected.

SQL> select \* from department cross join view2;

DID DEPT\_NAME DID

-------------------- -------------------- --------------------

1 cse 1

1 cse 2

1 cse 3

1 cse 4

2 ece 1

2 ece 2

2 ece 3

2 ece 4

3 eee 1

3 eee 2

3 eee 3

DID DEPT\_NAME DID

-------------------- -------------------- --------------------

3 eee 4

4 it 1

4 it 2

4 it 3

4 it 4

16 rows selected.

SQL> update view1 set dept\_name='raju';

4 rows updated.

SQL>

SQL> select \* from view1;

DEPT\_NAME

--------------------

raju

raju

raju

raju

SQL> select \* from department;

DID DEPT\_NAME

-------------------- --------------------

1 raju

2 raju

3 raju

4 raju

SQL> select \* from department;

DID DEPT\_NAME

-------------------- --------------------

1 raju

2 raju

3 raju

4 raju

SQL> select did from department where did in(select did from department where dept\_name='raju');

DID

--------------------

1

2

3

4

SQL> drop table department;

Table dropped.

SQL> select \* from view1;

select \* from view1

\*

ERROR at line 1:

ORA-04063: view "SYSTEM.VIEW1" has errors

SQL> select \* from view2;

select \* from view2

\*

ERROR at line 1:

ORA-04063: view "SYSTEM.VIEW2" has errors

SQL> create table department(did numeric,dept\_name varchar2(20));

Table created.

SQL> insert into department values(1,'cse');

1 row created.

SQL> insert into department values(2,'eee');

1 row created.

SQL> insert into department values(3,'ece');

1 row created.

SQL> select \* from department;

DID DEPT\_NAME

---------- --------------------

1 cse

2 eee

3 ece

SQL> select \* from instructor;

no rows selected

SQL> create view view2 as select did from department;

create view view2 as select did from department

\*

ERROR at line 1:

ORA-00955: name is already used by an existing object

SQL> select \* from view1;

DEPT\_NAME

--------------------

cse

eee

ece

SQL> select \* from view2;

DID

----------

1

2

3

SQL> select dept\_name from department where did in(select did from department where dept\_name='cse');

DEPT\_NAME

--------------------

cse

SQL>

SQL> select \* from department where did in(select did from department where dept\_name='cse');

DID DEPT\_NAME

---------- --------------------

1 cse

SQL> select \* from instructor;

no rows selected

SQL> insert into instructor values(1,'ece','civil',2);

1 row created.

SQL> insert into instructor values(1,'mohan','cse',1);

1 row created.

SQL> select \* from department where dept\_name in(select dept\_name from instructor where name='mohan');

DID DEPT\_NAME

---------- --------------------

1 cse

SQL> select \* from department where dept\_name not in(select dept\_name from instructor where name='mohan');

DID DEPT\_NAME

---------- --------------------

2 eee

3 ece

SQL> select \* from instructor where salary>some(select salary from instructor where id=1);

ID NAME DEPT\_NAME SALARY

-------------------- -------------------- -------------------- ----------

1 ece civil 2

SQL> select \* from instructor;

ID NAME DEPT\_NAME SALARY

-------------------- -------------------- -------------------- ----------

1 ece civil 2

1 mohan cse 1

SQL> select \* from instructor where salary>all(select salary from instructor where id=1);

no rows selected

SQL> select \* from instructor where salary>=all(select salary from instructor where id=1);

ID NAME DEPT\_NAME SALARY

-------------------- -------------------- -------------------- ----------

1 ece civil 2

SQL> select \* from instructor where exists(select salary from instructor where id=1);

ID NAME DEPT\_NAME SALARY

-------------------- -------------------- -------------------- ----------

1 ece civil 2

1 mohan cse 1

SQL> select \* from instructor where name='mohan' and exists(select salary from instructor where id=1);

ID NAME DEPT\_NAME SALARY

-------------------- -------------------- -------------------- ----------

1 mohan cse 1

SQL> select \* from instructor where name='mohan' and exists(select salary from instructor where id=2);

no rows selected

SQL> select \* from instructor where name='mohan' and not exists(select salary from instructor where id=2);

ID NAME DEPT\_NAME SALARY

-------------------- -------------------- -------------------- ----------

1 mohan cse 1

SQL> select \* from instructor where name='mohan' and not exists(select salary from instructor where id=1);

no rows selected

SQL> select \* from instructor where name='mohan' and unique(select salary from instructor where id=1);=1);

select \* from instructor where name='mohan' and unique(select salary from instructor where id=1);=1)

\*

ERROR at line 1:

ORA-00936: missing expression

SQL> select \* from instructor where name='mohan' and unique(select salary from instructor where id=1);

select \* from instructor where name='mohan' and unique(select salary from instructor where id=1)

\*

ERROR at line 1:

ORA-00936: missing expression

SQL> select \* from instructor where unique(select salary from instructor where id=1);

select \* from instructor where unique(select salary from instructor where id=1)

\*

ERROR at line 1:

ORA-00936: missing expression

SQL> select \* from instructor where unique(select salary from instructor where id=1);

select \* from instructor where unique(select salary from instructor where id=1)

\*

ERROR at line 1:

ORA-00936: missing expression

SQL> select \* from instructor where unique (select salary from instructor where id=1);

select \* from instructor where unique (select salary from instructor where id=1)

\*

ERROR at line 1:

ORA-00936: missing expression

SQL> select \* from (select id,salary from instructor where id=1);

ID SALARY

-------------------- ----------

1 2

1 1

SQL> select \* from view1

2 select \* from view1;

select \* from view1

\*

ERROR at line 2:

ORA-00933: SQL command not properly ended

SQL> select \* from view1;

DEPT\_NAME

--------------------

cse

eee

ece

SQL> select \* from view2;

DID

----------

1

2

3

SQL> select id from (select id,salary from instructor where id=1);

ID

--------------------

1

1

SQL> select id from (select id,salary from instructor where id=1) where name='mohan';

select id from (select id,salary from instructor where id=1) where name='mohan'

\*

ERROR at line 1:

ORA-00904: "NAME": invalid identifier

SQL> select id from (select id,salary from instructor where id=1) where id=1;

ID

--------------------

1

1

SQL> select id from (select id,salary from instructor where id=1) where id=2;

no rows selected

SQL> create view v as select id,salary from instructor where id=1;

View created.

SQL> select id from v where id=2;

no rows selected

SQL> select id from v where id=1;

ID

--------------------

1

1