1:-

Aim:- Create a Student Table having three column Roll number with integer datatype, Name with varchar(15) datatype and Marks with integer datatype.

Description:-

I have created a table by name as Student and having three column roll number , name, marks. which is used to store the data of the student.

Syntax:-

Create table Table\_Name(column1 datatype,column2 datatype);

Example:-

Create table STUDENT(ROLL\_NO INT,NAME varchar(15),MARKS INT);

Output:-

Table created.

2:-

Aim:- Insert the data in the Student Table in the respected column according to its order Roll number with integer datatype, Name with varchar(15) datatype and Marks with integer datatype.

Description:-

I inserted the data in the table by using insert command and this command is used

to enter the the data in the created table and that in database.

Syntax:-

INSERT INTO table name(column1 name, column2 name, column3 name) VALUES(integer value, ‘name’, integer value);

Example:-

INSERT INTO STUDENT(ROLL\_NO,NAME,MARKS) VALUES(1,'MALIK',33);

Output:-

1 row created.

3:-

Aim:- Display the data of the table student which was inserted using previous command and command will be used is ‘select’ command;

Description:-

I used the select command to display the record of student table which ever is required to display \* symbol is used to display all column of the table and if we want to display the specific column then on the place of star or \* symbol, we will simply write the column name.

Syntax:-

* select \* from table name;
* select column name, column name, ... from table name;

Example:-

select \* from student;

Output:-

ROLL\_NO NAME MARKS

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

2 UTKARSH 33

3 AABBCC 65

4 AABBCCD 95

1 XYZ 33

4:-

Aim :- Delete the data from the table;

Description:- I used the Delete command to delete the record from the table whichever is required.

Syntax:-

DELETE FROM table name condition to select the row;

Example:-

DELETE FROM STUDENT WHERE ROLL\_NO = 1;

Output:-

1 row deleted.

5:-

Aim:-Display the data to check the data is deleted from table or not.

Description:-

I displayed the data to check row deleted or no

Syntax:- select \* from table name;

Example:- select \* from student;

Output:-

ROLL\_NO NAME MARKS

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

2 UTKARSH 33

3 AABBCC 65

4 AABBCCD 95

6:-

Aim:- Create a Teacher Table having three column name, TID and DPTS.

Description:-

I have created a table by name as Teacher and having three column Name with datatype varchar(15) , TID with datatype int, DPT with varchar(5) . which is used to store the data of the Teachers. And inserted data using

“INSERT INTO TEACHER(NAME,TID,DPT) VALUES('TARUN',1123,'IT');” command.

Syntax:-

Create table Table\_Name(column1 datatype,column2 datatype);

Example:-

CREATE TABLE TEACHER(NAME VARCHAR(15),TID INT,DPT VARCHAR(5));

Output:- Table created.

7:-

Aim:- Display the data of the Teacher table.

Description:-

In this I displayed the data of the teacher table using select command.

Syntax:- select \* from table name;

Example:-

SELECT \* FROM TEACHER;

Output:-

NAME TID DPT

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

TARUN 1123 IT

PTRZZ 1163 CSE

PANDIT 1223 CHE

MLOPS 22323 CHE

YYY 22323 CHE

XCD 4556323 CHE

6 rows selected.

8:-

Aim:- Insert the data in the Teacher table using command line input.

Description:- I used the insert command and inserted the data using command line.

Syntax:- insert into table name values(‘&column1 name’,’&column2 name’,’&column3 name’);

Example:-

INSERT INTO TEACHER VALUES('&NAME','&TID','&DPT');

Output:-

Enter value for name:XYZ

Enter value for tid: 123

Enter value for dpt: CSE

old 1: INSERT INTO TEACHER VALUES('&NAME','&TID','&DPT')

new 1: INSERT INTO TEACHER VALUES('XYZ','123','CSE')

1 row created.

SELECT \* FROM TEACHER;

Output:-

NAME TID DPT

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

TARUN 1123 IT

PTRZZ 1163 CSE

PANDIT 1223 CHE

MLOPS 22323 CHE

YYY 22323 CHE

XYZ 123 CSE

9:-

Aim:- Drop the table which was made with the name student.

Description:-

I dropped the table using drop command. It is used to delete the or remove the existing table in the database which is not required or useless.

Syntax:-

Drop table table\_name;

Example:-

DROP TABLE STUDENT;

Output:-

Table dropped.

10:-

Aim:- create a new student table with column s\_id, name and dpt having primary key.

Description:- I created a table named student and column dpt having the primary key and rest of column are same as previous student table.

Syntax:-

CREATE TABLE table\_name(col1 datatype,col2 data type,col3 data type PRIMARY KEY);

Example:-

CREATE TABLE STUDENT(S\_ID INT,NAME VARCHAR(15),DPT VARCHAR(5) PRIMARY KEY);

Output:-

Table created.

11:-

Aim:- Display the both table student and teacher with some condition.

Description:-

Syntax:-

SELECT \* FROM table1 obj1, table2 obj2 condition for joining;

Example:-

SELECT \* FROM STUDENT S, TEACHER T WHERE S.DPT=T.DPT;

Output:-

S\_ID NAME DPT NAME TID DPT

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

123 ASASSDDF IT WXYZ 1123 IT

432 SAGWEYWEY CHE MLOPS 1223 CHE

432 SAGWEYWEY CHE MLOPS 22323 CHE

432 SAGWEYWEY CHE MLOFS 22323 CHE

432 SAGWEYWEY CHE MWLOFS 4556323 CHE

432 SAGWEYWEY CHE MWLOFS 43333 CHE

432 SAGWEYWEY CHE MWLOFS 43333 CHE

7 rows selected.

12:-

Aim:- Display the specific column of the specific table with join.

Description:-

Syntax:-

SELECT obj1.col1,obj2.col1,obj1.col4,obj2.col2 FROM table1 obj1, table2 obj2 condition for joining;

Example:-

SELECT S.S\_ID,S.DPT,S.NAME,T.NAME FROM STUDENT S, TEACHER T WHERE S.DPT=T.DPT;

Output:-

S\_ID DPT NAME NAME

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

123 IT ASASSDDF WXYZ

432 CHE SAGWEYWEY MLOPS

432 CHE SAGWEYWEY MLOPS

432 CHE SAGWEYWEY MLOFS

432 CHE SAGWEYWEY MWLOFS

432 CHE SAGWEYWEY MWLOFS

432 CHE SAGWEYWEY MWLOFS

7 rows selected.

13:-

Aim:- Display the tables student, teacher by using full outer join.

Description:-

Syntax:-

SELECT \* FROM table1 obj1 FULL OUTER JOIN table2 obj2 ON condition;

Example:-

SELECT \* FROM STUDENT S FULL OUTER JOIN TEACHER T ON S.DPT=T.DPT ;

Output:-

S\_ID NAME DPT NAME TID DPT

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

123 ASASSDDF IT WXYZ 1123 IT

221 SXGSY CSE PTRZZ 1163 CSE

432 SAGWEYWEY CHE MLOPS 1223 CHE

432 SAGWEYWEY CHE MLOPS 22323 CHE

432 SAGWEYWEY CHE MLOFS 22323 CHE

432 SAGWEYWEY CHE MWLOFS 4556323 CHE

432 SAGWEYWEY CHE MWLOFS 43333 CHE

432 SAGWEYWEY CHE MWLOFS 43333 CHE

EWTEFY 55454 WRE

ESRCS 44443 TERA

3453 SDGBDUY ECE

11 rows selected.

14:-

Aim:- Updating the values of existing column.

Description:- In this step with update command I have given the inputs to the altered(Added)

column.

Syntax:-

update table\_name set attribute=value where condition;

Example:-

update student set S\_ID=1 where dpt=’IT’;

Output:-

1 row updated.

**AIM:-** Alter the column.

Description:- ALTER COMMAND IS USED TO

* ADD COLUMN.
* TO DROP AN EXISTING COLUMN FROM THE SCHEMA.
* TO MODIFY CONSTRAINTS OF EXISTING COLUMN.

Syntax :- ALTER TABLE TABLE\_NAME ADD COLUMN\_NAME CONSTRAINTS;

ALTER TABLE TABLE\_NAME DROP COLUMN COLUMN\_NAME;

ALTER TABLE TABLE\_NAME MODIFY COLUMN\_NAME CONSTRAINTS;

Example:-

alter table teacher add(Salary INT);

Output:-

Table altered.

SQL> select \* from teacher;

NAME TID DPT SALARY

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

WXYZ 1123 IT

PTRZZ 1163 CSE

MLOPS 1223 CHE

MLOPS 22323 CHE

MLOFS 22323 CHE

MWLOFS 4556323 CHE

MWLOFS 43333 CHE

MWLOFS 43333 CHE

EWTEFY 55454 WRE

ESRCS 44443 TERA

10 rows selected.

**Experiment 1:** Create and manipulate identified tables for the course enrollment application .

**Aim :** To identify the scheme for the course enrollment application and ‘CREATE’ tables in oracle database using sql and to

manipulate the tables using the ‘ALTER’ command.

**Identified schemas:**

Students(sid: string, name: string, login: string,age: integer, gpa: real)

Faculty(fid: string, fname: string, sal: real)

Courses(cid: string, cname: string, credits: integer)

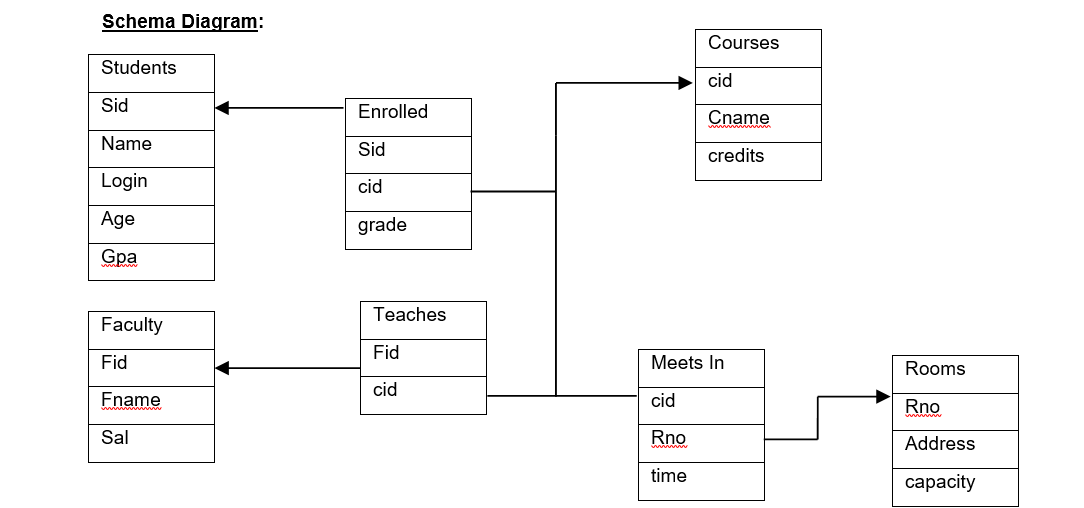
Rooms(rno: integer, address: string, capacity: integer)

Enrolled(sid: string, cid: string, grade: string)

Teaches(fid: string, cid: string)

Meets In(cid: string, rno: integer, time: string)

**Schema Diagram:**

****

**Create Table:**

Q1) Write a sql query to create and display students table.

Solution:-

create table Students(sid varchar(5), name varchar(15), login varchar(10),age int, gpa real);

Table created.

insert into students values('001','aman','xyz@gmail.com','21','10')

1 row created.

insert into students values('002','siddharth','abc@gmail.com','22','9')

1 row created.

insert into students values('003','anshu','lmn@gmail.com','25','8')

1 row created.

select \* from Students;

SID NAME LOGIN AGE GPA

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

1 aman xyz@gmail.com 21 10

2 siddharth abc@gmail.com 22 9

3 anshu lmn@gmail.com 25 8

Q2) Write a sql query to create and display faculty table.

Solution:-

create table Faculty(fid varchar(5), fname varchar(10), sal real);

Table created.

insert into faculty values('1','ram','20000')

1 row created.

insert into faculty values('2','shyam','30000')

1 row created.

insert into faculty values('3','rohan','40000')

1 row created.

SQL> select \* from Faculty;

FID FNAME SAL

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

1 ram 20000

2 shyam 30000

3 rohan 40000

Q3) Write a sql query to create and display courses table.

Solution:-

create table Courses(cid varchar(5), cname varchar(10), credits int);

Table created.

SQL> insert into courses values('9','b.tech','5');

1 row created.

insert into courses values('8','bba','5');

1 row created.

insert into courses values('7','bca','4')

1 row created.

SQL> select \* from Courses;

CID CNAME CREDITS

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

9 b.tech 5

8 bba 5

7 bca 5

Q4) Write a sql query to create and display rooms table.

Solution:-

create table Rooms(rno int, address varchar(50), capacity int);

Table created.

SQL> insert into Rooms values(103,'It Department UIET-4',50);

1 row created.

insert into Rooms values(104,'It Department UIET-4',60);

1 row created.

insert into Rooms values(105,'It Department UIET-4',69);

1 row created.

SQL> select \* from Rooms;

RNO ADDRESS CAPACITY

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

103 It Department UIET-4 50

104 It Department UIET-4 60

105 It Department UIET-4 69

Q5) Write a sql query to create and display enrolled table.

Solution:-

create table Enrolled(sid varchar(5), cid varchar(5), grade varchar(6));

Table created.

SQL> insert into Enrolled values('1','ISC','A');

1 row created.

insert into Enrolled values('2','ISC','A');

1 row created.

insert into Enrolled values('3','ISC','A');

1 row created.

SQL> select \* from Enrolled;

SID CID GRADE

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

1 ISC A

2 ISC A

3 ISC A

Q6) Write a sql query to create and display teaches table.

Solution:-

create table Teaches(fid varchar(5), cid varchar(5));

Table created.

SQL> insert into Teaches values('1211','ISC');

1 row created.

insert into Teaches values('1212','ISC');

1 row created.

insert into Teaches values('1213','ISC');

1 row created.

SQL> select \* from Teaches;

FID CID

----- -----

1211 ISC

1212 ISC

1213 ISC

Q7) Write a sql query to create and display meet\_in table.

Alter table add/modify/drop columns:

Solution:-

create table Meets(cid varchar(5), rno int, time varchar(15));

Table created.

SQL> insert into Meets values('ISC',103,'10AM’);

1 row created.

insert into Meets values('ISC',104, '11AM’);

1 row created.

insert into Meets values('ISC',105,'12AM’);

1 row created.

SQL> select \* from Meets;

CID RNO TIME

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

ISC 103 10AM

ISC 104 11AM

ISC 105 12AM

SQL> alter table Meets add(Dates varchar(15));

Table altered.

SQL> select \* from Meets;

CID RNO TIME DATES

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

ISC 103 10AM

ISC 104 11AM

ISC 105 12AM

SQL> alter table Meets modify(Dates Date);

Table altered.

SQL> select \* from Meets;

CID RNO TIME DATES

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

ISC 103 10AM

ISC 104 11AM

ISC 105 12AM

update Meets set Dates='01-JAN-2021' where RNO=103;

1 row updated.

SQL> select \* from Meets ;

CID RNO TIME DATES

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

ISC 103 10AM 01-JAN-2021

ISC 104 11AM

ISC 105 12AM

alter table Meets drop column Dates;

Table altered.

SQL> select \* from Meets;

CID RNO TIME

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

ISC 103 10AM

ISC 104 11AM

ISC 105 12AM

Q8) write a sql query to drop a column of a table.

Solution:-

alter table Meets drop column Dates;

Table altered.

Q9) write a sql query to add a column to a table.

Solution:-

alter table Meets add(Dates varchar(15));

Table altered.

SQL> select \* from Meets;

CID RNO TIME DATES

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

ISC 103 10AM

ISC 104 11AM

ISC 105 12AM

Q10) write a sql query to modify a column of a table.

Solution:-

alter table Meets modify(Dates Date);

Table altered.

Q11) write a sql query to rename table student to vidyarthi.

SOLUTION:-

RENAME Students TO vidyarthi;

Table renamed.

select \* from vidyarthi;

SID NAME LOGIN AGE GPA

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

1 aman xyz@gmail.com 21 10

2 siddharth abc@gmail.com 22 9

3 anshu lmn@gmail.com 25 8

Q12) write a sql query to truncate table teaches.

Solution:-

TRUNCATE TABLE teaches;

Table truncated.

SQL> select \* from teaches;

no rows selected

Q13) write a sql query to drop table teaches.

Solution:-

drop table teaches;

Table dropped.

SQL> select \* from teaches;

Select \* from teaches

\*

ERROR at line 1:

ORA-00942: table or view does not exist

Aim:- ADDDING AND DROPPING CONSTRAINT.

Description:- In this experiment we need to add the constraints at the time of table creation as well as after creating table using ALTER command then we need to drop the constraints.

Syntax:-

ALTER TABLE table\_name ADD CONSTRAINT constraint\_name constraint\_type(column1, column2...);

ALTER TABLE table\_name DROP CONSTRAINT constraint\_name;

EXAMPLE:-

create table persons( ID int NOT NULL, lastname varchar(25) NOT NULL, firstname varchar(25), age int);

Table created.

ALTER TABLE persons ADD PRIMARY KEY(ID);

Table altered.

ALTER TABLE persons DROP PRIMARY KEY;

Table altered.

**USING CONSTRAINT NAME**

ALTER TABLE persons ADD CONSTRAINT pk\_persons PRIMARY KEY(ID);

Table altered.

ALTER TABLE persons DROP CONSTRAINT pk\_persons;

Table altered.

============================================================================

**Aim:-** CREATING FOREIGN KEY.

**Description:-** In this experiment first we create the base table (dept) then we create child table(emp) ,We create foreign key( dno ) in child table that will point to the primary key dno in base table.

**Example:-**

CREATE TABLE dept (  
   deptno int primary key,

deptname varchar(20)  
);

CREATE TABLE emp (  
    empno int NOT NULL,  
    empname varchar(20) NOT NULL,

deptno int,  
     
    PRIMARY KEY (empno),  
    FOREIGN KEY (deptno) REFERENCES dept(deptno) on delete set null  
);

select \* from emp;

E\_NO E\_NAME DNO

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

1 raj 10

2 ravi 20

3 ram 10

SQL> select \* from dept;

DNO DNAME

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

20 ec

30 it

delete from dept where dno=10;

1 row deleted.

SQL> select \* from dept;

DNO DNAME

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

20 ec

30 it

SQL> select \* from emp;

E\_NO E\_NAME DNO

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

1 raj

2 ravi 20

3 ram

**Assignment**

**Aim: Perform single row operations.**

**Ex:-**

SQL> select **upper(name)** from student;

UPPER(NAME

----------

TUSHAR

BHUPATI

UTKARSH

SQL> select **lower(name)** from student;

LOWER(NAME

----------

tushar

bhupati

utkarsh

SQL> select **initcap(name)** from student;

INITCAP(NA

----------

Tushar

Bhupati

Utkarsh

SQL> select **concat(name,dept)** from student;

CONCAT(NAME,D

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

tusharit

bhupatiit

utkarshit

SQL> select name,**length(name)** from student;

NAME LENGTH(NAME)

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

tushar 6

bhupati 7

utkarsh 7

SQL> select **rpad(name,10,'#')** from student;

RPAD(NAME,10,'#')

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

tushar####

bhupati###

utkarsh###

SQL> select **lpad(name,10,'#')** from student;

LPAD(NAME,10,'#')

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

####tushar

###bhupati

###utkarsh

SQL> select name**, instr(name,'a')** from student;

NAME INSTR(NAME,'A')

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

tushar 5

bhupati 5

utkarsh 4

**Assignment**

**Aim: Perform Join operations.**

**WE HAVE FOLLOWING TABLES ON WHICH WE ARE GOING TO PERFORM JOIN OPERATION.**

SQL> select \* from emp;

ENO ENAME DNO

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

1 tushar 10

2 harsh 20

3 utkarsh 30

SQL> select \* from dept;

DNO DNAME

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

10 IT

20 CSE

3 EC

SQL INNER JOIN Keyword

### **INNER JOIN Syntax**

**SELECT column\_name(s)  
FROM table1  
INNER JOIN table2ON table1.column\_name = table2.column\_name;**

**Example:**

SQL> select \* from emp inner join dept on emp.dno=dept.dno;

ENO ENAME DNO DNO DNAME

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

1 tushar 10 10 IT

2 harsh 20 20 CSE

SQL CROSS JOIN Keyword

### **CROSS JOIN Syntax**

**SELECT column\_name(s)  
FROM table1,table2*;***

**Example:**

SQL> select \* from emp,dept;

ENO ENAME DNO DNO DNAME

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

1 tushar 10 10 IT

1 tushar 10 20 CSE

1 tushar 10 3 EC

2 harsh 20 10 IT

2 harsh 20 20 CSE

2 harsh 20 3 EC

3 utkarsh 30 10 IT

3 utkarsh 30 20 CSE

3 utkarsh 30 3 EC

9 rows selected.

SQL NATURAL JOIN Keyword

### **NATURAL JOIN Syntax**

SELECT column\_name(s)  
FROM table1  
NATURAL JOIN table2;

**Example:**

SQL> select \* from emp natural join dept;

DNO ENO ENAME DNAME

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

10 1 tushar IT

20 2 harsh CSE

SQL> select \* from emp,dept where emp.dno=dept.dno;

ENO ENAME DNO DNO DNAME

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

1 tushar 10 10 IT

2 harsh 20 20 C

SQL FULL JOIN Keyword

### **FULL JOIN Syntax**

SELECT column\_name(s)  
FROM table1  
FULL  JOIN table2ON table1.column\_name = table2.column\_nameWHERE condition;

**Example:**

SQL> select \* from emp full join dept on emp.dno=dept.dno;

ENO ENAME DNO DNO DNAME

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

1 tushar 10 10 IT

2 harsh 20 20 CSE

3 EC

3 utkarsh 30

SQL LEFT JOIN Keyword

### **LEFT JOIN Syntax**

SELECT column\_name(s)  
FROM table1  
LEFT JOIN table2ON table1.column\_name = table2.column\_name;

**Example:**

SQL> select \* from emp left join dept on emp.dno=dept.dno;

ENO ENAME DNO DNO DNAME

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

1 tushar 10 10 IT

2 harsh 20 20 CSE

3 utkarsh 30

SQL RIGHT JOIN Keyword

### **RIGHT JOIN Syntax**

SELECT column\_name(s)  
FROM table1  
RIGHT JOIN table2ON table1.column\_name = table2.column\_name;

**Example:**

SQL> select \* from emp right join dept on emp.dno=dept.dno;

ENO ENAME DNO DNO DNAME

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

1 tushar 10 10 IT

2 harsh 20 20 CSE

3 EC

### **EQUI JOIN Syntax**

SELECT column\_name(s)  
FROM table1,able2WHERE table1.column\_name = table2.column\_name;

**Example:**

SQL> select \* from emp,dept WHERE emp.dno=dept.dno;

ENO ENAME DNO DNO DNAME

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

1 tushar 10 10 IT

2 harsh 20 20 CSE

**Assignment**

**AIM** : PERFORM SQL VIEW OPERATION.

## SQL CREATE VIEW Statement

### **CREATE VIEW Syntax**

CREATE VIEW view\_name AS  
SELECT column1, column2, ...  
FROM table\_name  
WHERE condition;

**Example:**

SQL> create view myview as select rollno, name from student;

View created.

SQL> select \* from myview;

ROLLNO NAME

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

1 tushar

2 bhupati

3 utkarsh

## SQL Updating a View

### **SQL CREATE OR REPLACE VIEW Syntax**

CREATE OR REPLACE VIEW view\_name AS  
SELECT column1, column2, ...  
FROM table\_name  
WHERE condition;

**Example:**

SQL> create or replace view myview as select rollno,name,dept from student;

View created.

SQL> select \* from myview;

ROLLNO NAME DEPT

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

1 tushar it

2 bhupati it

3 utkarsh it

## SQL Dropping a View

### **SQL DROP VIEW Syntax**

DROP VIEW view\_name;

**Example:**

SQL> drop view myview;

View dropped.

SQL> select \* from myview;

select \* from myview

\*

ERROR at line 1:

ORA-00942: table or view does not exist

## View & the WITH CHECK OPTION clause

## Syntax:-

CREATE OR REPLACE VIEW view\_name

AS select\_statement WITH CHECK OPTION;

**Example:**

SQL> create or replace view myview as select rollno,name,dept from student where dept='it'

with check option;

View created.

SQL> insert into myview(rollno,name,dept) values(4,'harsh','cse');

insert into myview(rollno,name,dept) values(4,'harsh','cse')

\*

ERROR at line 1:

ORA-01402: view WITH CHECK OPTION where-clause violation

SQL> insert into myview(rollno,name,dept) values(4,'harsh','it');

1 row created.

SQL> select \* from myview;

ROLLNO NAME DEP

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

1 tushar it

2 bhupati it

3 utkarsh it

4 harsh it