

## CREATE TABLE –

```
SQL> CREATE TABLE STUD1  
(RNO NUMBER(3),  
FNAME VARCHAR(10),  
LNAME VARCHAR(10),  
MOBILE NUMBER(10),  
CITY VARCHAR(12),  
COURSE VARCHAR(10));
```

Table created.

```
SQL> DESC STUD1;
```

Name	Null?	Type
-----	-----	-----
RNO		NUMBER(3)
FNAME		VARCHAR2(10)
LNAME		VARCHAR2(10)
MOBILE		NUMBER(10)
CITY		VARCHAR2(12)
COURSE		VARCHAR2(10)

## INSERT RECORDS INTO TABLE –

```
SQL> INSERT INTO STUD1 VALUES (01, 'OM', 'BHAVSAR', 9977885566, 'NASHIK', 'BCA');
```

1 row created.

```
SQL>
```

```
SQL> INSERT INTO STUD1 (RNO, FNAME, LNAME, MOBILE, CITY, COURSE)  
VALUES (02, 'SAI', 'PATIL', 9922665588, 'SHIRPUR', 'BBA');
```

1 row created.

```
SQL> SELECT * FROM STUD1;
```

RNO	FNAME	LNAME	MOBILE	CITY	COURSE
-----	-----	-----	-----	-----	-----
1	OM	BHAVSAR	9977885566	NASHIK	BCA
2	SAI	PATIL	9922665588	SHIRPUR	BBA

## UNIQUE Constraints –

```
SQL> CREATE TABLE STUD100  
( RNO NUMBER(3) UNIQUE,  
FNAME VARCHAR(10));
```

Table created.

```
SQL> DESC STUD100;
```

Name	Null?	Type
-----	-----	-----
RNO		NUMBER(3)
FNAME		VARCHAR2(10)

SQL> INSERT INTO STUD100 (RNO, FNAME) VALUES (01, 'OM');

1 row created.

### UNIQUE, NOT NULL and DEFAULT Constraints –

SQL> CREATE TABLE STUD101  
(RNO NUMBER(3) UNIQUE,  
FNAME VARCHAR(10) NOT NULL,  
CITY VARCHAR(10) DEFAULT 'SHIRPUR'  
);

Table created.

SQL> DESC STUD101;

Name	Null?	Type
-----	-----	-----
RNO		NUMBER(3)
FNAME	NOT NULL	VARCHAR2(10)
CITY		VARCHAR2(10)

SQL> INSERT INTO STUD101 (RNO, FNAME, CITY)  
VALUES (01, 'SHIV', 'MUMBAI');

1 row created.

SQL> INSERT INTO STUD101 (RNO, FNAME, CITY) VALUES (03, 'SAI', 'NASHIK');

1 row created.

SQL> SELECT \* FROM STUD101;

RNO	FNAME	CITY
-----	-----	-----
1	SHIV	MUMBAI
3	SAI	NASHIK

SQL> INSERT INTO STUD101 (RNO, FNAME) VALUES (04, 'SHIV');

1 row created.

SQL> SELECT \* FROM STUD101;

RNO	FNAME	CITY
-----	-----	-----
1	SHIV	MUMBAI
3	SAI	NASHIK
4	SHIV	SHIRPUR

### UNIQUE, NOT NULL, DEFAULT and CHECK Constraints –

```
SQL)CREATE TABLE SYBCA  
(RNO NUMBER(3) UNIQUE,  
FNAME VARCHAR(12) NOT NULL,  
LNAME VARCHAR(10),  
MARK NUMBER(3) CHECK(MARK<=100),  
CITY VARCHAR(12) DEFAULT 'SHIRPUR'  
);
```

```
SQL> INSERT INTO SYBCA (RNO, FNAME, LNAME, MARK, CITY) VALUES (01, 'OM', 'JOSHI', 80, 'NASHIK');
```

```
SQL> SELECT * FROM SYBCA;
```

## PRIMARY KEY Constraints –

```
SQL> CREATE TABLE TCS
2 (ENO NUMBER(3) PRIMARY KEY,
3 ENAME VARCHAR(10));
```

```
SQL> DESC TCS;
```

Name	Null?	Type
-----	-----	-----
ENO	NOT NULL	NUMBER(3)
ENAME		VARCHAR2(10)

```
SQL> CREATE TABLE TCSNEW
(EMPNO NUMBER(3),
CITY VARCHAR(10),
FOREIGN KEY(EMPNO) REFERENCES TCS(ENO));
```

Table created.

```
SQL> INSERT INTO TCS(ENO, ENAME) VALUES (01, 'OM');
```

1 row created.

```
SQL> SELECT * FROM TCS;
```

ENO	ENAME
-----	-----
1	OM
2	SAI
3	RAM

```
SQL> INSERT INTO TCSNEW(EMPNO, CITY) VALUES (01, 'SHIRPUR');
```

1 row created.

```
SQL> INSERT INTO TCSNEW(EMPNO, CITY) VALUES (02, 'MUMBAI');
```

1 row created.

```
SQL> SELECT * FROM TCSNEW;
```

EMPNO	CITY
-----	-----
1	SHIRPUR
2	MUMBAI

```
SQL> SELECT * FROM TCS TCSNEW;
```

ENO	ENAME
-----	-----
1	OM
2	SAI
3	RAM

## UPDATE RECORDS –

### Syntax –

**UPDATE** table\_name  
**SET** field1 = new-value1, field2 = new-value2,  
[**WHERE** CLAUSE]

```
SQL> CREATE TABLE BCA20  
(STUD_ID NUMBER(3),  
FNAME VARCHAR(10),  
DOB DATE,  
CITY VARCHAR(10));
```

Table created.

```
SQL> INSERT INTO BCA20 (STUD_ID, FNAME, DOB, CITY) VALUES (01, 'om', '01-jan-2020', 'shirpur');
```

1 row created.

```
SQL> SELECT * FROM BCA20;
```

STUD_ID	FNAME	DOB	CITY
1	OM	01-JAN-20	SHIRPUR
2	SAI	02-FEB-19	MUMBAI
3	SHIV	03-MAR-18	NASHIK

```
SQL> UPDATE BCA20  
SET CITY='NAGPUR'  
WHERE STUD_ID=1;
```

1 row updated.

```
SQL> SELECT * FROM BCA20;
```

STUD_ID	FNAME	DOB	CITY
1	OM	01-JAN-20	NAGPUR
2	SAI	02-FEB-19	MUMBAI
3	SHIV	03-MAR-18	NASHIK

```
SQL> UPDATE BCA20 SET FNAME='SHIVAM', CITY='DELHI' WHERE STUD_ID=3;
```

1 row updated.

```
SQL> SELECT * FROM BCA20;
```

STUD_ID	FNAME	DOB	CITY
1	OM	01-JAN-20	NAGPUR
2	SAI	02-FEB-19	MUMBAI
3	SHIVAM	03-MAR-18	DELHI

```
SQL> CREATE TABLE RCPEMP
(EMP_ID NUMBER(3),
ENAME VARCHAR(12),
LOCATION VARCHAR(12),
DOJ DATE,
SALARY NUMBER(5));
```

Table created.

```
SQL> DESC RCPEMP;
```

Name	Null?	Type
EMP_ID		NUMBER(3)
ENAME		VARCHAR2(12)
LOCATION		VARCHAR2(12)
DOJ		DATE
SALARY		NUMBER(5)

```
SQL> INSERT INTO RCPEMP VALUES(101, 'JAYANT', 'PUNE', '07-FEB-2023', 20000);
```

```
SQL> INSERT INTO RCPEMP VALUES(410, 'AAKASH', 'MUMBAI', '25-OCT-2018', 25000);
```

```
SQL> INSERT INTO RCPEMP VALUES(815, 'KRISHNA', 'BANGLORE', '15-MAR-2016', 22000);
```

```
SQL> INSERT INTO RCPEMP VALUES(165, 'KOMAL', 'SHIRPUR', '20-SEP-2019', 24000);
```

```
SQL> SELECT * FROM RCPEMP;
```

EMP_ID	ENAME	LOCATION	DOJ	SALARY
101	JAYANT	PUNE	07-FEB-23	20000
410	AAKASH	MUMBAI	25-OCT-18	25000
815	KRISHNA	BANGLORE	15-MAR-16	22000
165	KOMAL	SHIRPUR	20-SEP-19	24000

```
SQL> SELECT * FROM RCPEMP WHERE EMP_ID=815;
```

EMP_ID	ENAME	LOCATION	DOJ	SALARY
815	KRISHNA	BANGLORE	15-MAR-16	22000

```
SQL> SELECT * FROM RCPEMP WHERE LOCATION='BANGLORE';
```

EMP_ID	ENAME	LOCATION	DOJ	SALARY
815	KRISHNA	BANGLORE	15-MAR-16	22000

```
SQL> SELECT * FROM RCPEMP WHERE SALARY>20000;
```

EMP_ID	ENAME	LOCATION	DOJ	SALARY
410	AAKASH	MUMBAI	25-OCT-18	25000
815	KRISHNA	BANGLORE	15-MAR-16	22000
165	KOMAL	SHIRPUR	20-SEP-19	24000

```
SQL> SELECT * FROM RCPEMP WHERE EMP_ID=165;
```

EMP_ID	ENAME	LOCATION	DOJ	SALARY
165	KOMAL	SHIRPUR	20-SEP-19	24000

```
SQL> SELECT ENAME, SALARY FROM RCPEMP WHERE EMP_ID=165;
```

ENAME	SALARY
KOMAL	24000

```
SQL> SELECT EMP_ID, ENAME, SALARY FROM RCPEMP WHERE LOCATION='MUMBAI';
```

EMP_ID	ENAME	SALARY
410	AAKASH	25000

```
SQL> SELECT * FROM RCPEMP;
```

EMP_ID	ENAME	LOCATION	DOJ	SALARY
101	JAYANT	PUNE	07-FEB-23	20000
410	AAKASH	MUMBAI	25-OCT-18	25000
815	KRISHNA	BANGLORE	15-MAR-16	22000
165	KOMAL	SHIRPUR	20-SEP-19	24000

```
SQL> UPDATE RCPEMP  
SET LOCATION='HYDRABAD'  
WHERE EMP_ID=410;
```

1 row updated.

```
SQL> SELECT * FROM RCPEMP;
```

EMP_ID	ENAME	LOCATION	DOJ	SALARY
101	JAYANT	PUNE	07-FEB-23	20000
410	AAKASH	HYDRABAD	25-OCT-18	25000
815	KRISHNA	BANGLORE	15-MAR-16	22000
165	KOMAL	SHIRPUR	20-SEP-19	24000

```
SQL> UPDATE RCPEMP SET SALARY=30000 WHERE EMP_ID=101;
```

1 row updated.

```
SQL> SELECT * FROM RCPEMP;
```

EMP_ID	ENAME	LOCATION	DOJ	SALARY
101	JAYANT	PUNE	07-FEB-23	30000
410	AAKASH	HYDRABAD	25-OCT-18	25000
815	KRISHNA	BANGLORE	15-MAR-16	22000
165	KOMAL	SHIRPUR	20-SEP-19	24000

```
SQL> UPDATE RCPEMP SET DOJ='18-NOV-2019' WHERE EMP_ID=165;
```

1 row updated.

```
SQL> SELECT * FROM RCPEMP;
```

EMP_ID	ENAME	LOCATION	DOJ	SALARY
-----	-----	-----	-----	-----
101	JAYANT	PUNE	07-FEB-23	30000
410	AAKASH	HYDRABAD	25-OCT-18	25000
815	KRISHNA	BANGLORE	15-MAR-16	22000
165	KOMAL	SHIRPUR	18-NOV-19	24000

```
SQL> SELECT EMP_ID, ENAME, SALARY FROM RCPEMP WHERE LOCATION='MUMBAI';
```

no rows selected

```
SQL> DELETE FROM IMRDEMP WHERE EMPID=1;
```

1 row deleted.



## ORDER BY –

```
SQL> CREATE TABLE BCA20
(STUD_ID NUMBER(3),
FNAME VARCHAR(10),
DOB DATE,
CITY VARCHAR(10));
```

Table created.

```
SQL> INSERT INTO BCA20 (STUD_ID, FNAME, DOB, CITY) VALUES (01, 'om', '01-jan-2020', 'shirpur');
```

```
SELECT column-list
FROM table_name
[WHERE condition]
[ORDER BY column1, column2, .. columnN] [ASC | DESC];
```

```
SQL> SELECT * FROM BCA20;
```

STUD_ID	FNAME	DOB	CITY
1	om	01-JAN-20	NAGPUR
2	SAI	02-FEB-19	MUMBAI
3	SHIVAM	03-MAR-18	DELHI

```
SQL> SELECT * FROM BCA20 ORDER BY CITY;
```

(Arrange city in ascending Order )

STUD_ID	FNAME	DOB	CITY
3	SHIVAM	03-MAR-18	DELHI
2	SAI	02-FEB-19	MUMBAI
1	om	01-JAN-20	NAGPUR

```
SQL> SELECT * FROM BCA20 ORDER BY stud_id DESC;
```

(Arrange stud\_id in descending order)

STUD_ID	FNAME	DOB	CITY
3	SHIVAM	03-MAR-18	DELHI
2	SAI	02-FEB-19	MUMBAI
1	OM	01-JAN-20	NAGPUR

```
SQL> CREATE TABLE IMRDEMP
(EMPID NUMBER(3),
ENAME VARCHAR(15),
DESIGNATION VARCHAR(15),
DOJ DATE,
LOCATION VARCHAR(15));
```

Table created.

```
SQL> DESC IMRDEMP;
```

Name	Null?	Type
EMPID		NUMBER(3)
ENAME		VARCHAR2(15)
DESIGNATION		VARCHAR2(15)
DOJ		DATE
LOCATION		VARCHAR2(15)

```
SQL> INSERT INTO IMRDEMP
VALUES(101, 'ROHIT', 'MANAGER', '01-JAN-2018', 'PUNE');
```

1 row created.

```
SQL> SELECT * FROM IMRDEMP;
```

EMPID	ENAME	DESIGNATION	DOJ	LOCATION
101	ROHIT	MANAGER	01-JAN-18	PUNE
402	KARAN	ENGINEER	07-FEB-22	NAGPUR
201	SNEHA	CA	18-DEC-21	MUMBAI
410	SAKSHI	HRM	25-OCT-12	BANGLORE

```
SQL> SELECT * FROM IMRDEMP;
```

EMPID	ENAME	DESIGNATION	DOJ	LOCATION
101	ROHIT	MANAGER	01-JAN-18	PUNE
402	KARAN	ENGINEER	07-FEB-22	NAGPUR
201	SNEHA	CA	18-DEC-21	MUMBAI
410	SAKSHI	HRM	25-OCT-12	BANGLORE

```
SQL>
```

```
UPDATE IMRDEMP
SET LOCATION='HYDRABAD'
WHERE EMPID=201;
```

1 row updated.

SQL> SELECT \* FROM IMRDEMP;

EMPID	ENAME	DESIGNATION	DOJ	LOCATION
101	ROHIT	MANAGER	01-JAN-18	PUNE
402	KARAN	ENGINEER	07-FEB-22	NAGPUR
201	SNEHA	CA	18-DEC-21	HYDRABAD
410	SAKSHI	HRM	25-OCT-12	BANGLORE

SQL> UPDATE IMRDEMP SET DESIGNATION='CEO', LOCATION='SINGAPUR' WHERE EMPID=101;

1 row updated.

SQL> SELECT \* FROM IMRDEMP;

EMPID	ENAME	DESIGNATION	DOJ	LOCATION
101	ROHIT	CEO	01-JAN-18	SINGAPUR
402	KARAN	ENGINEER	07-FEB-22	NAGPUR
201	SNEHA	CA	18-DEC-21	HYDRABAD
410	SAKSHI	HRM	25-OCT-12	BANGLORE

SQL> UPDATE IMRDEMP  
SET ENAME='JAYASHREE', DESIGNATION='IT', DOJ='01-JAN-2021', LOCATION='DUBAI'  
WHERE EMPID=410;

1 row updated.

SQL> SELECT \* FROM IMRDEMP;

EMPID	ENAME	DESIGNATION	DOJ	LOCATION
101	ROHIT	CEO	01-JAN-18	SINGAPUR
402	KARAN	ENGINEER	07-FEB-22	NAGPUR
201	SNEHA	CA	18-DEC-21	HYDRABAD
410	JAYASHREE	IT	01-JAN-21	DUBAI

SQL> UPDATE IMRDEMP  
SET EMPID=110  
WHERE ENAME='ROHIT';

1 row updated.

SQL> SELECT \* FROM IMRDEMP ORDER BY EMPID;

EMPID	ENAME	DESIGNATION	DOJ	LOCATION
110	ROHIT	CEO	01-JAN-18	SINGAPUR
201	SNEHA	CA	18-DEC-21	HYDRABAD
402	KARAN	ENGINEER	07-FEB-22	NAGPUR
410	JAYASHREE	IT	01-JAN-21	DUBAI

SQL> SELECT \* FROM IMRDEMP ORDER BY DOJ;

EMPID	ENAME	DESIGNATION	DOJ	LOCATION
110	ROHIT	CEO	01-JAN-18	SINGAPUR
410	JAYASHREE	IT	01-JAN-21	DUBAI
201	SNEHA	CA	18-DEC-21	HYDRABAD
402	KARAN	ENGINEER	07-FEB-22	NAGPUR

SQL> SELECT \* FROM IMRDEMP ORDER BY LOCATION DESC;

EMPID	ENAME	DESIGNATION	DOJ	LOCATION
110	ROHIT	CEO	01-JAN-18	SINGAPUR
402	KARAN	ENGINEER	07-FEB-22	NAGPUR
201	SNEHA	CA	18-DEC-21	HYDRABAD
410	JAYASHREE	IT	01-JAN-21	DUBAI

SQL> SELECT \* FROM IMRDEMP ORDER BY LOCATION;

EMPID	ENAME	DESIGNATION	DOJ	LOCATION
410	JAYASHREE	IT	01-JAN-21	DUBAI
201	SNEHA	CA	18-DEC-21	HYDRABAD
402	KARAN	ENGINEER	07-FEB-22	NAGPUR
110	ROHIT	CEO	01-JAN-18	SINGAPUR

## Alter Command –

### Existing Table -

Name	Type
-----	-----
EMPID	NUMBER(3)
ENAME	VARCHAR2(15)
DESIGNATION	VARCHAR2(15)
DOJ	DATE
LOCATION	VARCHAR2(15)

---

## ALTER COMMAND – Add New Column in an existing table

### SYNTAX -

```
ALTER TABLE table_name  
ADD column_name datatype;
```

### EXAMPLE -

```
SQL> ALTER TABLE IMRDEMP  
ADD SALARY NUMBER(5);
```

Table altered.

```
SQL> DESC IMRDEMP;
```

Name	Type
-----	-----
EMPID	NUMBER(3)
ENAME	VARCHAR2(15)
DESIGNATION	VARCHAR2(15)
DOJ	DATE
LOCATION	VARCHAR2(15)
SALARY	NUMBER(5)

---

## ALTER COMMAND - DROP COLUMN in an existing table

### SYNTAX -

```
ALTER TABLE table_name  
DROP COLUMN column_name;
```

### EXAMPLE –

```
SQL> ALTER TABLE IMRDEMP  
DROP COLUMN SALARY;
```

Table altered.

```
SQL> DESC IMRDEMP;
```

Name	Type
EMPID	NUMBER(3)
ENAME	VARCHAR2(15)
DESIGNATION	VARCHAR2(15)
DOJ	DATE
LOCATION	VARCHAR2(15)

## ALTER TABLE - RENAME COLUMN

```
ALTER TABLE table_name  
RENAME COLUMN old_name TO new_name;
```

```
SQL> ALTER TABLE IMRDEMP  
RENAME COLUMN LOCATION TO CITY;
```

Table altered.

```
SQL> DESC IMRDEMP;
```

Name	Null?	Type
EMPID		NUMBER(3)
ENAME	NOT NULL	VARCHAR2(15)
DESIGNATION		VARCHAR2(10)
DOJ		DATE
<b>CITY</b>		VARCHAR2(15)

## ALTER COMMAND - CHANGE DATA TYPE

SYNTAX -

```
ALTER TABLE table_name  
MODIFY column_name datatype;
```

Example -

```
SQL> ALTER TABLE IMRDEMP  
MODIFY DESIGNATION VARCHAR(10);
```

Table altered.

```
SQL> DESC IMRDEMP;
```

Name	Type
-----	-----
EMPID	NUMBER(3)
ENAME	VARCHAR2(15)
DESIGNATION	<b>VARCHAR2(10)</b>
DOJ	DATE
LOCATION	VARCHAR2(15)

---

## ALTER COMMAND - Add NOT NULL constraint

### SYNTAX -

```
ALTER TABLE table_name
MODIFY column_name datatype NOT NULL;
```

### Example -

```
SQL> ALTER TABLE IMRDEMP
MODIFY ENAME VARCHAR(15) NOT NULL;
```

Table altered.

Name	Null?	Type
-----	-----	-----
EMPID		NUMBER(3)
ENAME	<b>NOT NULL</b>	VARCHAR2(15)
DESIGNATION		VARCHAR2(10)
DOJ		DATE
LOCATION		VARCHAR2(15)

---

## ALTER COMMAND - ADD UNIQUE CONSTRAINT

### SYNTAX -

```
ALTER TABLE table_name
MODIFY column_name datatype UNIQUE;
```

### Example -

```
SQL> ALTER TABLE IMRDEMP
MODIFY DESIGNATION VARCHAR(10) UNIQUE;
```

Table altered.

---

## ALTER COMMAND - ADD CHECK CONSTRAINT

SYNTAX -

```
ALTER TABLE table_name  
MODIFY column_name datatype CHECK (CONDITION);
```

SYNTAX -

```
SQL> ALTER TABLE IMRDEMP  
MODIFY SALARY NUMBER(5) CHECK(SALARY>=1000);
```

---

## ALTER COMMAND - ADD PRIMARY KEY

SYNTAX -

```
ALTER TABLE table_name  
MODIFY column_name datatype PRIMARY KEY;
```

SYNTAX -

```
SQL> ALTER TABLE IMRDEMP  
MODIFY EMPID NUMBER(3) PRIMARY KEY;
```