

## **EXPERIMENT NO.2**

**Aim- To perform various DDL, DML and TCL Commands on Employee Database.**

**Query 1: Write a SQL code to create the employee table with name EMP\_1 with following columns and their data types.**

COLUMN	DATATYPE
EMP_NUM	char (3)
EMP_LNAME	char (15)
EMP_FNAME	char (15)
EMP_INITIAL	char (1)
EMP_HIREDATE	date
JOB_CODE	char (3)

**Solution –**

```
create table EMP_1(  
    EMP_NUM char(3),  
    EMP_LNAME char(15),  
    EMP_FNAME char(15),  
    EMP_INITIAL char(1),  
    EMP_HIREDATE date,  
    JOB_CODE char(3)  
);
```

**Output-**

Table created.

**Query 2- After creating the structure, enter the corresponding entries in the table EMP\_1.**

EMP_NUM	EMP_LNAME	EMP_FNAME	EMP_INITIAL	EMP_HIREDATE	JOB_CODE
101	News	John	G	11/08/92	502
102	Senior	David	H	07/12/87	501
103	Arbough	June	E	12/01/94	500
104	Ramoras	Anne	K	11/15/85	501
105	Johnson	Alice	K	02/01/91	502

**Solution –**

```

insert into EMP_1 (EMP_NUM, EMP_LNAME, EMP_FNAME, EMP_INITIAL, EMP_HIREDATE,
JOB_CODE) values ('101', 'News', 'John', 'G', to_date('11-8-92',' MM-DD-YY'), '502');
insert into EMP_1 (EMP_NUM, EMP_LNAME, EMP_FNAME, EMP_INITIAL, EMP_HIREDATE,
JOB_CODE) values ('102', 'Senior', 'David', 'H', to_date('07-12-87',' MM-DD-YY'), '501');
insert into EMP_1 (EMP_NUM, EMP_LNAME, EMP_FNAME, EMP_INITIAL, EMP_HIREDATE,
JOB_CODE) values ('103', 'Arbough', 'June', 'E', to_date('12-1-94',' MM-DD-YY'), '500');
insert into EMP_1 (EMP_NUM, EMP_LNAME, EMP_FNAME, EMP_INITIAL, EMP_HIREDATE,
JOB_CODE) values ('104', 'Ramoras', 'Anne', 'K', to_date('11-15-85',' MM-DD-YY'), '501');
insert into EMP_1 (EMP_NUM, EMP_LNAME, EMP_FNAME, EMP_INITIAL, EMP_HIREDATE,
JOB_CODE) values ('105', 'Johnson', 'Alice', 'K', to_date('02-01-91',' MM-DD-YY'), '502');
insert into EMP_1 (EMP_NUM, EMP_LNAME, EMP_FNAME, EMP_INITIAL, EMP_HIREDATE,
JOB_CODE) values ('106', 'Smithfield', 'William', ' ', to_date('06-23-90',' MM-DD-YY'), '500');
insert into EMP_1 (EMP_NUM, EMP_LNAME, EMP_FNAME, EMP_INITIAL, EMP_HIREDATE,
JOB_CODE) values ('107', 'Alonzo', 'Maria', 'D', to_date('10-10-91',' MM-DD-YY'), '500');
insert into EMP_1 (EMP_NUM, EMP_LNAME, EMP_FNAME, EMP_INITIAL, EMP_HIREDATE,
JOB_CODE) values ('108', 'Washington', 'Ralph', 'B', to_date('08-22-89',' MM-DD-YY'), '501');
insert into EMP_1 (EMP_NUM, EMP_LNAME, EMP_FNAME, EMP_INITIAL, EMP_HIREDATE,
JOB_CODE) values ('109', 'Smith', 'Larry', 'W', to_date('07-18-95',' MM-DD-YY'), '501');

```

### Output-

EMP_NUM	EMP_LNAME	EMP_FNAME	EMP_INITIAL	EMP_HIREDATE	JOB_CODE
101	News	John	G	08-NOV-92	502
102	Senior	David	H	12-JUL-87	501
103	Arbough	June	E	01-DEC-94	500
104	Ramoras	Anne	K	15-NOV-85	501
105	Johnson	Alice	K	01-FEB-91	502
106	Smithfield	William		23-JUN-90	500
107	Alonzo	Maria	D	10-OCT-91	500
108	Washington	Ralph	B	22-AUG-89	501
109	Smith	Larry	W	18-JUL-95	501

**Query 3: Write a SQL code that will list all attributes for a job code of 502.**

### Solution –

```
select * from EMP_1 where JOB_CODE = '502';
```

### Output-

EMP_NUM	EMP_LNAME	EMP_FNAME	EMP_INITIAL	EMP_HIREDATE	JOB_CODE
101	News	John	G	08-NOV-92	502
105	Johnson	Alice	K	01-FEB-91	502

**Query 4: Write a SQL code that will save the EMP\_1 table.**

**Solution –**

commit;

**Output-**

```
Statement processed.
```

**Query 5: Write a SQL code to change the job code to 501 for the person whose personnel number is 106. After doing the change see the content of changed database, and then restore the original value.**

**Solution –**

update EMP\_1 set JOB\_CODE = '501' where EMP\_NUM = '106';

select \* from EMP\_1;

**Output-**

EMP_NUM	EMP_LNAME	EMP_FNAME	EMP_INITIAL	EMP_HIREDATE	JOB_CODE
101	News	John	G	08-NOV-92	502
102	Senior	David	H	12-JUL-87	501
103	Arbough	June	E	01-DEC-94	500
104	Ramoras	Anne	K	15-NOV-85	501
105	Johnson	Alice	K	01-FEB-91	502
106	Smithfield	William		23-JUN-90	501
107	Alonzo	Maria	D	10-OCT-91	500
108	Washington	Ralph	B	22-AUG-89	501
109	Smith	Larry	W	18-JUL-95	501

**Solution –**

rollback;

**Output-**

EMP_NUM	EMP_LNAME	EMP_FNAME	EMP_INITIAL	EMP_HIREDATE	JOB_CODE
101	News	John	G	08-NOV-92	502
102	Senior	David	H	12-JUL-87	501
103	Arbough	June	E	01-DEC-94	500
104	Ramoras	Anne	K	15-NOV-85	501
105	Johnson	Alice	K	01-FEB-91	502
106	Smithfield	William		23-JUN-90	500
107	Alonzo	Maria	D	10-OCT-91	500
108	Washington	Ralph	B	22-AUG-89	501
109	Smith	Larry	W	18-JUL-95	501

**Query 6:** Write a SQL code to delete the row the for the person William Smithfield, who was hired on 23 whose job code is 500. (Note: Specify all condition, since there may be more than one William )

**Solution –**

delete from EMP\_1 where EMP\_FNAME = 'Smithfield' and EMP\_LNAME = 'William' and  
EMP\_HIREDATE = to\_date('06-23-90','MM-DD-YY') and JOB\_CODE = '500';

**Output-**

EMP_NUM	EMP_LNAME	EMP_FNAME	EMP_INITIAL	EMP_HIREDATE	JOB_CODE
101	News	John	G	08-NOV-92	502
102	Senior	David	H	12-JUL-87	501
103	Arbough	June	E	01-DEC-94	500
104	Ramoras	Anne	K	15-NOV-85	501
105	Johnson	Alice	K	01-FEB-91	502
107	Alonzo	Maria	D	10-OCT-91	500
108	Washington	Ralph	B	22-AUG-89	501
109	Smith	Larry	W	18-JUL-95	501

**Query 7:** Write a SQL code that will restore the data to its original status that was after executing query in Query 4.

**Solution –**

rollback;

**Output-**

EMP_NUM	EMP_LNAME	EMP_FNAME	EMP_INITIAL	EMP_HIREDATE	JOB_CODE
101	News	John	G	08-NOV-92	502
102	Senior	David	H	12-JUL-87	501
103	Arbough	June	E	01-DEC-94	500
104	Ramoras	Anne	K	15-NOV-85	501
105	Johnson	Alice	K	01-FEB-91	502
106	Smithfield	William		23-JUN-90	500
107	Alonzo	Maria	D	10-OCT-91	500
108	Washington	Ralph	B	22-AUG-89	501
109	Smith	Larry	W	18-JUL-95	501

**Query 8:**Create a copy of EMP\_1, name it EMP\_2, and then add the attribute EMP\_PCT and PROJ\_NUM to its structure.

(EMP\_PCT is bonus percent)

Specification of attributes are

**EMP\_PCT** Decimal(4,2)

**PROJ\_NUM** char(3)

**Solution –**

create table EMP\_2 as select \* from EMP\_1;

alter table EMP\_2 ADD (EMP\_PCT decimal(4,2),PROJ\_NUM char(3));

**Output-**

EMP_NUM	EMP_LNAME	EMP_FNAME	EMP_INITIAL	EMP_HIREDATE	JOB_CODE	EMP_PCT	PROJ_NUM
101	News	John	G	08-NOV-92	502	-	-
102	Senior	David	H	12-JUL-87	501	-	-
103	Arbough	June	E	01-DEC-94	500	-	-
104	Ramoras	Anne	K	15-NOV-85	501	-	-
105	Johnson	Alice	K	01-FEB-91	502	-	-
106	Smithfield	William		23-JUN-90	500	-	-
107	Alonzo	Maria	D	10-OCT-91	500	-	-
108	Washington	Ralph	B	22-AUG-89	501	-	-
109	Smith	Larry	W	18-JUL-95	501	-	-

**Query 9:**Enter the following data in newly introduced attributes:

EMP_NUM	EMP_LNAME	EMP_FNAME	EMP_INITIAL	EMP_HIRE DATE	JOB_CODE	EMP_PCT	PROJ_NUM
101	News	John	G	11/8/92	502	5.00	

102	Senior	David	H	7/12/87	501	8.00	
103	Arbough	June	E	12/1/94	50	3.85	
104	Ramoras	Anne	K	11/15/85	501	10.00	
105	Johnson	Alice	K	2/1/91	502	5.00	
106	Smithfield	William		6/23/90	500	6.20	
107	Alonzo	Maria	D	10/10/91	500	5.15	
108	Washington	Ralph	B	8/22/89	501	10.00	
109	Smith	Larry	W	7/18/95	501	2.00	

#### Solution –

```

update EMP_2 set EMP_PCT = '5.00' where EMP_NUM = '101';
update EMP_2 set EMP_PCT = '8.00' where EMP_NUM = '102';
update EMP_2 set EMP_PCT = '3.85' where EMP_NUM = '103';
update EMP_2 set EMP_PCT = '10.00' where EMP_NUM = '104';
update EMP_2 set EMP_PCT = '5.00' where EMP_NUM = '105';
update EMP_2 set EMP_PCT = '6.20' where EMP_NUM = '106';
update EMP_2 set EMP_PCT = '5.15' where EMP_NUM = '107';
update EMP_2 set EMP_PCT = '10.00' where EMP_NUM = '108';
update EMP_2 set EMP_PCT = '2.00' where EMP_NUM = '109';

```

#### Output-

EMP_NUM	EMP_LNAME	EMP_FNAME	EMP_INITIAL	EMP_HIREDATE	JOB_CODE	EMP_PCT	PROJ_NUM
101	News	John	G	08-NOV-92	502	5	-
102	Senior	David	H	12-JUL-87	501	8	-
103	Arbough	June	E	01-DEC-94	500	3.85	-
104	Ramoras	Anne	K	15-NOV-85	501	10	-
105	Johnson	Alice	K	01-FEB-91	502	5	-
106	Smithfield	William		23-JUN-90	500	6.2	-
107	Alonzo	Maria	D	10-OCT-91	500	5.15	-
108	Washington	Ralph	B	22-AUG-89	501	10	-
109	Smith	Larry	W	18-JUL-95	501	2	-

**Query 10: Using a simple query, enter the PROJ\_NUM =18 for all employees whose job code is 500 in EMP\_2 table.**

#### Solution –

```

update EMP_2 set PROJ_NUM = '18' where JOB_CODE = '500';

```

#### Output-

EMP_NUM	EMP_LNAME	EMP_FNAME	EMP_INITIAL	EMP_HIREDATE	JOB_CODE	EMP_PCT	PROJ_NUM
101	News	John	G	08-NOV-92	502	5	-
102	Senior	David	H	12-JUL-87	501	8	-
103	Arbough	June	E	01-DEC-94	500	3.85	18
104	Ramoras	Anne	K	15-NOV-85	501	10	-
105	Johnson	Alice	K	01-FEB-91	502	5	-
106	Smithfield	William		23-JUN-90	500	6.2	18
107	Alonzo	Maria	D	10-OCT-91	500	5.15	18
108	Washington	Ralph	B	22-AUG-89	501	10	-
109	Smith	Larry	W	18-JUL-95	501	2	-

**Query 11:** Similarly, enter the PROJ\_NUM = 25 for all employees whose job code is 501 and above in EMP\_2 table.

**Solution –**

update EMP\_2 set PROJ\_NUM = '25' where JOB\_CODE >= '501';

**Output-**

EMP_NUM	EMP_LNAME	EMP_FNAME	EMP_INITIAL	EMP_HIREDATE	JOB_CODE	EMP_PCT	PROJ_NUM
101	News	John	G	08-NOV-92	502	5	25
102	Senior	David	H	12-JUL-87	501	8	25
103	Arbough	June	E	01-DEC-94	500	3.85	18
104	Ramoras	Anne	K	15-NOV-85	501	10	25
105	Johnson	Alice	K	01-FEB-91	502	5	25
106	Smithfield	William		23-JUN-90	500	6.2	18
107	Alonzo	Maria	D	10-OCT-91	500	5.15	18
108	Washington	Ralph	B	22-AUG-89	501	10	25
109	Smith	Larry	W	18-JUL-95	501	2	25

**Query 12:** Now enter the PROJ\_NUM = 14 for those employees who were hired before January 1, 1992 and whose job code is at least 501 in EMP\_2 table.

**Solution –**

update EMP\_2 set PROJ\_NUM = '14' where JOB\_CODE = '501' and EMP\_HIREDATE < to\_date('01-01-92','MM-DD-YY');

**Output-**

EMP_NUM	EMP_LNAME	EMP_FNAME	EMP_INITIAL	EMP_HIREDATE	JOB_CODE	EMP_PCT	PROJ_NUM
101	News	John	G	08-NOV-92	502	5	25
102	Senior	David	H	12-JUL-87	501	8	14
103	Arbough	June	E	01-DEC-94	500	3.85	18
104	Ramoras	Anne	K	15-NOV-85	501	10	14
105	Johnson	Alice	K	01-FEB-91	502	5	25
106	Smithfield	William		23-JUN-90	500	6.2	18
107	Alonzo	Maria	D	10-OCT-91	500	5.15	18
108	Washington	Ralph	B	22-AUG-89	501	10	14
109	Smith	Larry	W	18-JUL-95	501	2	25



**Query 13: A) Create a temporary table TEMP\_1, whose structure is same as that of EMP\_2. (NOTE: Do not create structure explicitly; just copy the structure, not records.)**  
**B) Now copy the records from EMP\_2, do not add them explicitly.**

**Solution –**

- A. create table TEMP\_1 as (select \* from EMP\_2 );
- B. insert into TEMP\_1 select \* from EMP\_2;

**Output-**

EMP_NUM	EMP_LNAME	EMP_FNAME	EMP_INITIAL	EMP_HIREDATE	JOB_CODE	EMP_PCT	PROJ_NUM
101	News	John	G	08-NOV-92	502	5	25
102	Senior	David	H	12-JUL-87	501	8	14
103	Arbough	June	E	01-DEC-94	500	3.85	18
104	Ramoras	Anne	K	15-NOV-85	501	10	14
105	Johnson	Alice	K	01-FEB-91	502	5	25
106	Smithfield	William		23-JUN-90	500	6.2	18
107	Alonzo	Maria	D	10-OCT-91	500	5.15	18
108	washington	Ralph	B	22-AUG-89	501	10	14
109	Smith	Larry	W	18-JUL-95	501	2	25

**Query 14: Delete newly created TEMP\_1 table from the database.**

**Solution –**

drop table TEMP\_1.

**Query 15: List all employees from EMP\_2 table whose last name starts with ‘smith’.**

**Solution –**

select EMP\_FNAME, EMP\_LNAME from EMP\_2 where EMP\_LNAME like 'Smith%';

**Output-**

EMP_FNAME	EMP_LNAME
William	Smithfield
Larry	Smith

**Query 16: Add another table Project\_1 to your database with structure and values as shown:**

PROJ_NUM	PROJ_NAME	EMP_NUM
15	Evergreen	103
18	Amber Wave	108
22	Rolling Tide	102
25	Starflight	107

The EMP\_NUM in this Project table refers EMP\_NUM in EMP\_2.

Write SQL code that will produce the following output



