

Assignment 1

Question 1: Create the following tables:

Table name: EMPLOYEE **Structure:**

EMP_CODE	char(16)
EMP_NAME	char(20)
DEPT_CODE	char(16)
DESIG_CODE	char(16)
SEX	char(1)
ADDRESS	char (25)
CITY	char (20)
STATE	char (20)
PIN	char (6)
BASIC	Number

JN_DT	Date	Primary
key is EMP_CODE		

Table name: DESIGNATION **Structure:**

DESIG_CODE	char(16)
DESIG_DESC	char(20)

Primary key is DESIG_CODE

Table name: DEPARTMENT **Structure:**

DEPT_CODE char(16)

DEPT_NAME char(20)

Primary key is DEPT_CODE.

Solution:

```
SQL> CREATE TABLE EMPLOYEE(  
2  EMP_CODE varchar(16) NOT NULL PRIMARY KEY,  
3  EMP_NAME varchar(20),  
4  DEPT_CODE varchar(16),  
5  DESIG_CODE varchar(16),  
6  SEX varchar(1),  
7  ADDRESS varchar(25),  
8  CITY varchar(20),  
9  STATE varchar(20),  
10 PIN varchar(6),  
11 BASIC int,  
12 JN_DT Date);
```

Table created.

```
SQL> CREATE TABLE DESIGNATION(  
2  DESIG_CODE varchar(16) NOT NULL PRIMARY KEY,  
3  DESIG_DESC varchar(20));
```

Table created.

```
SQL> CREATE TABLE DEPARTMENT(  
2  DEPT_CODE varchar(16) NOT NULL PRIMARY KEY,  
3  DEPT_NAME varchar(20));
```

Table created.

□ **Question 2: Display the structure of each table.**

Solution:

SQL> DESC EMPLOYEE;

Name	Null?	Type
EMP_CODE	NOT NULL	VARCHAR2(16)
EMP_NAME		VARCHAR2(20)
DEPT_CODE VARCHAR2(16)		VARCHAR2(16) DESIG_CODE
SEX		VARCHAR2(1)
ADDRESS		VARCHAR2(25)
CITY		VARCHAR2(20)
STATE		VARCHAR2(20)
PIN		VARCHAR2(6)
BASIC		NUMBER(38)
JN_DT		DATE

SQL> DESC DESIGNATION;

Name	Null?	Type
DESIG_CODE	NOT NULL	VARCHAR2(16)
DESIG_DESC		VARCHAR2(20)

SQL> DESC DEPARTMENT;

Name	Null?	Type
DEPT_CODE	NOT NULL	VARCHAR2(16) DEPT_NAME
VARCHAR2(20)		

□ **Question 3. Insert few rows in each table.**

[While entering data in EMP table use DESIG_CODE which exists in DESIGNATION table and DEPT_CODE which is exists in DEPARTMENT table. In DESIGNATION table, assign code for Manager, Executive, officer, clerk and helper. In DEPARTMENT table, assign code for Personnel, Production, Purchase, Finance, Research departments]

```
SQL> INSERT INTO DEPARTMENT(DEPT_CODE, DEPT_NAME)
VALUES('PER','Personnel');
```

1 row created.

```
SQL> INSERT INTO DEPARTMENT(DEPT_CODE, DEPT_NAME)
VALUES('PR','Production');
```

1 row created.

```
SQL> INSERT INTO DEPARTMENT(DEPT_CODE, DEPT_NAME)
VALUES('PUR','Purchase');
```

1 row created.

```
SQL> INSERT INTO DEPARTMENT(DEPT_CODE, DEPT_NAME)
VALUES('FI','Finance');
```

1 row created.

```
SQL> INSERT INTO DEPARTMENT(DEPT_CODE, DEPT_NAME)
VALUES('RE','Research');
```

1 row created.

```
SQL> INSERT INTO DESIGNATION(DESIG_CODE, DESIG_DESC)
VALUES('MN','Manager');
```

1 row created.

```
SQL> INSERT INTO DESIGNATION(DESIG_CODE, DESIG_DESC)
VALUES('EXE','Executive');
```

1 row created.

```
SQL> INSERT INTO DESIGNATION(DESIG_CODE, DESIG_DESC)
VALUES('OFF','Officer');
```

1 row created.

```
SQL> INSERT INTO DESIGNATION(DESIG_CODE, DESIG_DESC)
VALUES('CL','Clerk');
```

1 row created.

```
SQL> INSERT INTO DESIGNATION(DESIG_CODE, DESIG_DESC)
VALUES('HL','Helper');
```

1 row created.

```
SQL> SELECT * FROM DEPARTMENT;
```

DEPT_CODE	DEPT_NAME
-----------	-----------

PER	Personnel
-----	-----------

PR	Production
----	------------

PUR	Purchase
-----	----------

FI	Finance
----	---------

RE	Research
----	----------

```
SQL> SELECT * FROM DESIGNATION;
```

DESIG_CODE	DESIG_DESC
------------	------------

MN	Manager
----	---------

EXE	Executive
-----	-----------

OFF	Officer
-----	---------

CL	Clerk
----	-------

HL	Helper
----	--------

```
SQL> INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE,
DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES
```

```
2 ('E101','Kavya Kulkarni','PR','EXE','F','61B Old Post Office
Road','Mumbai','Maharashtra','400023',45000,DATE '2021-02-22');
```

1 row created.

```
SQL> INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE,
DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES
```

```
2 ('E102','Kasturi Sanyal','FI','OFF','F','Fergusson College
Road','Pune','Maharashtra','411101',50000,DATE '2021-06-02');
```

1 row created.

```
SQL> INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE,
DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES
```

```
2 ('E103','Akash Ahuja','PUR','MN','M','Satyam Industrial
Estate','Pune','Maharashtra','421108',60000,DATE '2020-09-07');
```

1 row created.

```
SQL> INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE,
DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES
```

```
2 ('E104','Preeti Kumari','RE','HL','F','14A Gopal Banerjee
Lane','Kolkata','West Bengal','700014',30000,DATE '2022-01-03');
```

1 row created.

```
SQL> INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE,
DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES
```

```
2 ('E105','Mayank Agarwal','FI','CL','M','51A S.P. Mukherjee
Road','Kolkata','West Bengal','700026',25000,DATE '2022-01-02');
```

1 row created.

```
SQL> INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE,
DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES
2 ('E106','Piyush Prajapati','PUR','EXE','M','12 Marine
Lines','Mumbai','Maharashtra','400020',40000,DATE '2021-05-04');
```

1 row created.

```
SQL> INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE,
DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES
2 ('E107','Dhruv Byas','PR','MN','M','40 Umashankar Joshi
Marg','Ahmedabad','Gujarat','380009',60000,DATE '2020-02-02');
```

1 row created.

```
SQL> INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE,
DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES
2 ('E108','Ritu Das','PER','OFF','F','Indiranagar Double
Road','Bangalore','Karnataka','560038',55000,DATE '2020-03-05');
```

1 row created.

```
SQL> INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE,
DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES
2 ('E109','Maitrayee Dutta','CL','F','19 Ashoka Rd,
Janpath','Delhi','Delhi','110001',25000,DATE '2021-04-09');
```

1 row created.

```
SQL> INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE,
DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES
```

```
2 ('E110','Vikram Sen','','EXE','M','Satyanarayan
Market','Patna','Bihar','800034',20000,DATE '2021-11-12');
```

1 row created.

□ **Question 4: In EMP table insert few rows without DEPT_CODE and BASIC.**

Solution:

```
SQL> INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE,
DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES
2 ('E111','Anindita Baagchi','','CL','F',' Gulmohar Park
Mall','Ahmedabad','Gujarat','350098',0,DATE '2021-03-09');
```

1 row created.

```
SQL> INSERT INTO EMPLOYEE(EMP_CODE, EMP_NAME, DEPT_CODE,
DESIG_CODE, SEX, ADDRESS, CITY, STATE, PIN, BASIC, JN_DT) VALUES
2 ('E112','Gautam Shashtri','','OFF','M','574 Gurdwara
Road','Delhi','Delhi','110048','',DATE '2020-11-23');
```

1 row created.

```
SQL> SELECT * FROM EMPLOYEE;
```

EMP_CODE	EMP_NAME	DEPT_CODE	DESIG_CODE	S
----- - ADDRESS				
CITY	STATE	PIN		

BASIC JN_DT				

E101	Kavya Kulkarni	PR	EXE	F

61B Old Post Office Road	Mumbai		Maharashtra	400023
45000	22-FEB-21			
E102	Kasturi Sanyal	FI	OFF	F
Fergusson College Road	Pune		Maharashtra	411101
50000	02-JUN-21			
E103	Akash Ahuja	PUR	MN	M
Satyam Industrial Estate	Pune		Maharashtra	421108
60000	07-SEP-20			
E104	Preeti Kumari	RE	HL	F
14A Gopal Banerjee Lane	Kolkata		West Bengal	700014
E105	Mayank Agarwal	FI	CL	M
51A S.P. Mukherjee Road	Kolkata		West Bengal	700026
25000	02-JAN-22			
E106	Piyush Prajapati	PUR	EXE	M
12 Marine Lines	Mumbai		Maharashtra	400020
40000	04-MAY-21			
E107	Dhruv Byas	PR	MN	M
40 Umashankar Joshi Marg	Ahmedabad		Gujarat	380009
60000	02-FEB-20			
E108	Ritu Das	PER	OFF	F
Indiranagar Double Road	Bangalore		Karnataka	560038
55000	05-MAR-20			
E109	Maitrayee Dutta		CL	F
19 Ashoka Rd, Janpath	Delhi		Delhi	110001

25000 09-APR-21

E110	Vikram Sen	EXE	M
Satyanarayan Market	Patna	Bihar	800034

20000 12-NOV-21

E111	Anindita Baagchi	CL	F
Gulmohar Park Mall	Ahmedabad	Gujarat	350098

09-MAR-21

E112	Gautam Shashtri	OFF	M
574 Gurdwara Road	Delhi	Delhi	110048

23-
NOV-20

12 rows selected.

□ **Question 5: Find the rows with unassigned DEPT_CODE.**

Solution.

SQL> SELECT * FROM EMPLOYEE WHERE DEPT_CODE IS NULL;

EMP_CODE	EMP_NAME	DEPT_CODE	DESIG_CODE	S
----- - ADDRESS				
CITY	STATE	PIN		

BASIC JN_DT

E109	Maitrayee Dutta	CL	F
19 Ashoka Rd, Janpath	Delhi	Delhi	110001

25000 09-APR-21

E110	Vikram Sen	EXE	M
Satyanarayan Market	Patna	Bihar	800034
20000 12-NOV-21			
E111	Anindita Baagchi	CL	F
Gulmohar Park Mall	Ahmedabad	Gujarat	350098
0 09-MAR-21			
E112	Gautam Shashtri	OFF	M
574 Gurdwara Road	Delhi	Delhi	110048
23-NOV-20			

• **Question 6: Find the rows with BASIC equal to 0. Solution:**

SQL> SELECT * FROM EMPLOYEE WHERE BASIC = 0;

EMP_CODE	EMP_NAME	DEPT_CODE	DESIG_CODE	S
----- - ADDRESS				
CITY	STATE	PIN		

BASIC JN_DT				

E111	Anindita Baagchi	CL	F	
Gulmohar Park Mall	Ahmedabad	Gujarat	350098	
0 09-MAR-21				

• **Question 7: Find the rows with unassigned Basic [note down the difference between the results obtained in Q.6 and Q.7] Solution:**

SQL> SELECT * FROM EMPLOYEE WHERE BASIC IS NULL;

EMP_CODE	EMP_NAME	DEPT_CODE	DESIG_CODE	S
----------	----------	-----------	------------	---

```

----- - ADDRESS
CITY          STATE          PIN -----
-----

BASIC JN_DT
-----

E112          Gautam Shashtri          OFF          M
574 Gurdwara Road      Delhi          Delhi          110048          23-
NOV-20

```

- **Question 8: Find the average BASIC of the employees.**

Solution:

```
SQL> SELECT AVG(BASIC) FROM EMPLOYEE;
```

```
AVG(BASIC)
```

```
-----
```

```
37272.7273
```

- **Question 9: Replace the BASIC with 0 for the rows with unassigned BASIC.**

Solution:

```
SQL> UPDATE EMPLOYEE
```

```
2 SET BASIC = 0
```

```
3 WHERE BASIC IS NULL;
```

```
1 row updated.
```

- **Question 10. Find the average BASIC. (Note the difference of result obtained in Q.8 & Q.10.)**

Solution:

```
SQL> SELECT AVG(BASIC) FROM EMPLOYEE;
```

```
AVG(BASIC)
```

```
-----
```

```
34166.6667
```

- **Question 11. Delete the rows with unassigned DEPT_CODE.**

Solution:

```
SQL> DELETE FROM EMPLOYEE WHERE DEPT_CODE IS NULL;
```

4 rows deleted.

- **Question 12: Say, Net pay of an employee= Basic+ HRA+ DA where HRA is 50% of the Basic & DA is 40% of Basic. Show the employee name & Net pay for all employees.**

Solution:

```
SQL> SELECT EMP_NAME, BASIC * 0.4 + BASIC * 0.5 AS NET_PAY FROM  
EMPLOYEE;
```

EMP_NAME	NET_PAY
----------	---------

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

Kavya Kulkarni	40500
----------------	-------

Kasturi Sanyal	45000
----------------	-------

Akash Ahuja	54000
-------------	-------

Preeti Kumari	27000
---------------	-------

Mayank Agarwal	22500
----------------	-------

Piyush Prajapati	36000
------------------	-------

Dhruv Byas	54000
------------	-------

Ritu Das	49500
----------	-------

8 rows selected.

□ **Question 13: Show the EMP_NAME & BASIC in the ascending order of DEPT_CODE. The employee name must appear in uppercase.**

Solution:

```
SQL> SELECT UPPER(EMP_NAME), BASIC
2 FROM EMPLOYEE
3 ORDER BY BASIC;
```

UPPER(EMP_NAME)	BASIC
MAYANK AGARWAL	25000
PREETI KUMARI	30000
PIYUSH PRAJAPATI	40000
KAVYA KULKARNI	45000
KASTURI SANYAL	50000
RITU DAS	55000
AKASH AHUJA	60000
DHRUV BYAS	60000

8 rows selected.

□ **Question 14: Find the employees who have joined after 1st January 2010**

Solution:

```
SQL> SELECT EMP_NAME AS EMPLOYEE_NAME, JN_DT AS JOIN_DATE
2 FROM EMPLOYEE
3 WHERE JN_DT > DATE '2020-01-01';
```

EMPLOYEE_NAME JOIN_DATE

```
-----  
Kavya Kulkarni      22-FEB-21  
Kasturi Sanyal      02-JUN-21  
Akash Ahuja        07-SEP-20  
Preeti Kumari      03-JAN-22  
Mayank Agarwal     02-JAN-22  
Piyush Prajapati   04-MAY-21  
Dhruv Byas        02-FEB-20  
Ritu Das           05-MAR-20
```

8 rows selected.

- **Question 15: Find, how many employees have joined in the month of January?**

Solution:

```
SQL> SELECT COUNT(*) FROM EMPLOYEE WHERE SUBSTR(JN_DT,4,3) =  
'JAN';
```

```
COUNT(*)
```

```
-----
```

2

- **Question 16: Find the maximum & minimum Basic Solution:**

```
SQL> SELECT MAX(BASIC), MIN(BASIC) FROM EMPLOYEE;
```

```
MAX(BASIC) MIN(BASIC)
```

```
-----
```

60000 25000

- **Question 17: Find how many Female employees are there?**

Solution:

```
SQL> SELECT COUNT(*) FROM EMPLOYEE WHERE SEX = 'F';  
COUNT(*)
```

4

- **Question 18: Replace CITY with existing value converted into uppercase for all rows.**

Solution:

```
SQL> UPDATE EMPLOYEE SET CITY = UPPER(CITY);
```

8 rows updated.

```
SQL> SELECT CITY FROM EMPLOYEE;
```

CITY

MUMBAI

PUNE

PUNE

KOLKATA

KOLKATA

MUMBAI

AHMEDABAD

BANGALORE

8 rows selected.

- **Question 19: Find in how many different cities various employees are residing?**

Solution:

```
SQL> SELECT CITY, COUNT(*) FROM EMPLOYEE GROUP BY CITY;
```


CITY	COUNT(*)
MUMBAI	2
KOLKATA	2
PUNE	2
AHMEDABAD	1
BANGALORE	1

- **Question 20: Display the employee information in the ascending order of DEPT_CODE and within a Department, it should be in the descending order of BASIC.**

Solution:

```
SQL> SELECT * FROM EMPLOYEE
2 ORDER BY DEPT_CODE,
3 BASIC DESC;
```

EMP_CODE	EMP_NAME	DEPT_CODE	DESIG_CODE	S
----- - ADDRESS				
CITY	STATE	PIN		

BASIC	JN_DT	NET_PAY		

E102	Kasturi Sanyal	FI	OFF	F
Fergusson College Road	PUNE	Maharashtra	411101	
50000	02-JUN-21			
E105	Mayank Agarwal	FI	CL	M
51A S.P. Mukherjee Road	KOLKATA	West Bengal	700026	
25000	02-JAN-22			
E108	Ritu Das	PER	OFF	F

Indiranagar Double Road	BANGALORE	Karnataka	560038
55000 05-MAR-20			
E107	Dhruv Byas	PR	MN M
40 Umashankar Joshi Marg	AHMEDABAD	Gujarat	380009
60000 02-FEB-20			
E101	Kavya Kulkarni	PR	EXE F
61B Old Post Office Road	MUMBAI	Maharashtra	400023
45000 22-FEB-21			
E103	Akash Ahuja	PUR	MN M
Satyam Industrial Estate	PUNE	Maharashtra	421108
60000 07-SEP-20			
E106	Piyush Prajapati	PUR	EXE M
12 Marine Lines	MUMBAI	Maharashtra	400020
40000 04-MAY-21			
E104	Preeti Kumari	RE	HL F
14A Gopal Banerjee Lane	KOLKATA	West Bengal	700014
30000 03-JAN-22			

8 rows selected.