Deen Dayal Upadhyaya College
University of Delhi

DBMS PRACTICALS

Submitted in Partial fulfilment in The Degree of Bachelor of Science Computer Science Honors

Submitted To: **Submitted By:**

Dr. Shweta Wadhera   Abhigyan Mishra

A. Create the following database schema EMP-DEPT with all specified constraints and use it to answer the given queries.

EMPLOYEE Schema

Field Type NULL KEY DEFAULT

Eno Char(3) NO PRI NIL

Ename Varchar(50) NO NIL

Job_type Varchar(50) NO NIL

SupervisonENO Char(3) Yes FK NIL

Hire_date Date NO NIL

Dno Integer YES FK NIL

Commission Decimal(10,2) YES NIL

Salary Decimal(7,2) NO NIL

DEPARTMENT Schema

Field Type NULL KEY DEFAULT

Dno Integer No PRI NULL

Dname Varchar(50) Yes NULL
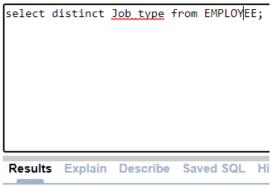
Location Varchar(50) Yes New Delhi

#Query List

1. Query to display Employee Name, Job, Hire Date, Employee Number; for each employee with the Employee Number appearing first.

```
select Eno, Ename, Job_type, Hire_date from EMPLOYEE;
```

Results Explain Describe Saved SQL History

ENO	ENAME	JOB_TYPE	HIRE_DATE
88	Alan	HR	08/23/1981
90	Fredrik	District Manager	12/03/1986
779	Eliot	Purchase Head	01/25/1976
82	Frank	Apprentice	02/28/1976
75	McGonagal	PR	07/24/1980
778	Abraham	Operations	04/26/1984
771	Rose	IT	03/26/1990
773	Elizabeth	HR & PR	05/05/1979
774	Bill	Research and Development	01/22/1976
775	King	Marketing and Sales	02/08/1976
776	Stinson	Legal	03/07/1978
777	Jacob	Accounting and Finance	12/22/1975
79	Samantha	Coder	10/02/1990
71	Abigale	Product Research	11/23/1981
76	Stuart	Debugger	09/25/1992
81	Roosevelt	Product Quality Inspector	05/23/1980
77	Blake	Jr. Legal Advisor	11/26/1981
78	Jonathan	Sr. Legal Advisor	06/21/1978
72	Alexander	IT	02/25/1993
73	Josh	IT	07/22/1994

More than 20 rows available. Increase rows selector to view more rows.

2. Query to display unique Jobs from the Employee Table.

```
select distinct Job_type from EMPLOYEE;
```

Results   Explain   Describe   Saved SQL   Hi

JOB_TYPE
District Manager
Apprentice
PR
Legal
IT
HR
Marketing and Sales
Debugger
Product Quality Inspector
Purchase Head
Research and Development
Product Research
HR & PR
Coder
Jr. Legal Advisor
Operations
Accounting and Finance
Sr. Legal Advisor

3. Query to display the Employee Name concatenated by a Job separated by a comma.

```
select (Ename || ', ' || Job_type) as Employee_Name from EMPLOYEE;
```

Results Explain Describe Saved SQL History

EMPLOYEE_NAME
Alan, HR
Fredrik, District Manager
Eliot, Purchase Head
Frank, Apprentice
McGonagal, PR
Abraham, Operations
Rose, IT
Elizabeth, HR & PR
Bill, Research and Development
King, Marketing and Sales
Stinson, Legal
Jacob, Accounting and Finance
Samantha, Coder
Abigale, Product Research
Stuart, Debugger
Roosevelt, Product Quality Inspector
Blake, Jr. Legal Advisor
Jonathan, Sr. Legal Advisor
Alexander, IT
Josh, IT
Luke, IT
Haley, IT
Enola, IT
Sherlok, IT
Asha, PR
Nolan, PR
Zeus, PR
Hillary, PR

4. Query to display all the data from the Employee Table. Separate each Column by a comma and name the said column as THE_OUTPUT.

```
select (Eno ||', '|| Ename ||', '||Job_type||', '||SupervisionENO||', '||Hire_date||', '||Dno||', '||Commission||', '||Salary) as THE_OUTPUT from EMPLOYEE;
```

Results Explain Describe Saved SQL History

THE_OUTPUT
88 , Alan, HR, 773, 08/23/1981, 25, , 1850
90 , Fredrik, District Manager, 778, 12/03/1986, 15, 2900.2, 2500.01
779, Eliot, Purchase Head, , 01/25/1976, 22, 3450.78, 3260
82 , Frank, Apprentice, 779, 02/28/1976, 22, 2810, 2980.7
75 , McGonagal, PR, 779, 07/24/1980, 22, , 2250.7
778, Abraham, Operations, , 04/26/1984, 15, 2775.5, 2500.25
771, Rose, IT, , 03/26/1990, 30, 3220.75, 3000
773, Elizabeth, HR & PR, , 05/05/1979, 25, 2570, 3000
774, Bill, Research and Development, , 01/22/1976, 10, 3250, 3100.75
775, King, Marketing and Sales, , 02/08/1976, 20, 3100.5, 3000
776, Stinson, Legal, , 03/07/1978, 12, 2900, 3500
777, Jacob, Accounting and Finance, , 12/22/1975, 18, 3200, 3000
79 , Samantha, Coder, 771, 10/02/1990, 30, 1500.5, 2000
71 , Abigale, Product Research, 774, 11/23/1981, 10, 2100, 1900
76 , Stuart, Debugger, 771, 09/25/1992, 30, 2500, 2100
81 , Roosevelt, Product Quality Inspector, 774, 05/23/1980, 10, 2780.5, 2500
77 , Blake, Jr. Legal Advisor, 776, 11/26/1981, 12, , 3000
78 , Jonathan, Sr. Legal Advisor, 776, 06/21/1978, 12, 2800, 3200
72 , Alexander, IT, 771, 02/25/1993, 30, 1500, 3000
73 , Josh, IT, 771, 07/22/1994, 30, 2500, 3200
74 , Luke, IT, 771, 09/15/1993, 30, 3500, 3000.5
80 , Haley, IT, 771, 01/29/1995, 30, , 2900
83 , Enola, IT, 771, 06/07/1995, 30, , 3176
84 , Sherlok, IT, 771, 12/03/1993, 30, , 3200
86 , Asha, PR, 773, 11/26/1980, 25, 3400, 3200
87 , Nolan, PR, 773, 06/01/1981, 25, , 3050
89 , Zeus, PR, 773, 01/01/1982, 25, 2000, 3050
91 , Hillary, PR, 773, 05/12/1983, 25, 1500, 2400

5. Query to display the Employee Name and Salary of all the employees earning more than $2850.

```
select Ename, Salary from EMPLOYEE where Salary > 2850;
```

Results Explain Describe Saved SQL History

ENAME	SALARY
Eliot	3260
Frank	2980.7
Rose	3000
Elizabeth	3000
Bill	3100.75
King	3000
Stinson	3500
Jacob	3000
Blake	3000
Jonathan	3200
Alexander	3000
Josh	3200
Luke	3000.5
Haley	2900
Enola	3176
Sherlok	3200
Asha	3200
Nolan	3050
Zeus	3050

6. Query to display Employee Name and Department Number for the Employee No= 79.

```
select Ename, Dno from EMPLOYEE where Eno = 79;
```

Results Explain Describe Saved SQL History

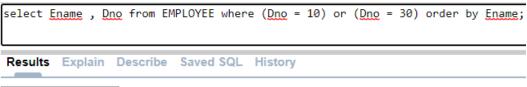| ENAME	DNO
Samantha	30

7. Query to display Employee Name and Salary for all employees whose salary is not in the range of $1500 and $2850.

```
select Ename, Salary from EMPLOYEE where Salary not between 1500 and 2850;
```

Results Explain Describe Saved SQL History

ENAME	SALARY
Eliot	3260
Frank	2980.7
Rose	3000
Elizabeth	3000
Bill	3100.75
King	3000
Stinson	3500
Jacob	3000
Blake	3000
Jonathan	3200
Alexander	3000
Josh	3200
Luke	3000.5
Haley	2900
Enola	3176
Sherlok	3200
Asha	3200
Nolan	3050
Zeus	3050

8. Query to display Employee Name and Department No. of all the employees in Dept 10 and Dept 30 in the alphabetical order by name.

```
select Ename , Dno from EMPLOYEE where (Dno = 10) or (Dno = 30) order by Ename;
```

Results Explain Describe Saved SQL History

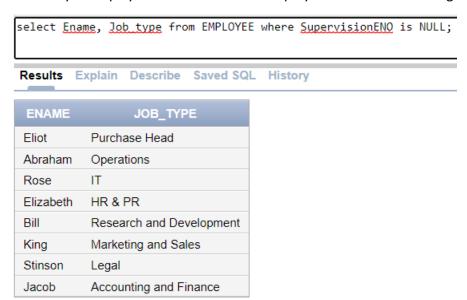| ENAME	DNO
Abigale	10
Alexander	30
Bill	10
Enola	30
Haley	30
Josh	30
Luke	30
Roosevelt	10
Rose	30
Samantha	30
Sherlok	30
Stuart	30

9. Query to display Name and Hire Date of every Employee who was hired in 1981.

```
select Ename , Hire_date from EMPLOYEE where extract(year from Hire_date) = 1981;
```

Results Explain Describe Saved SQL History

ENAME	HIRE_DATE
Alan	08/23/1981
Abigale	11/23/1981
Blake	11/26/1981
Nolan	06/01/1981
William	11/22/1981
Davy	09/29/1981
Jhonny	03/12/1981
Thomas	04/26/1981
Elva	11/21/1981
Kenway	05/27/1981
More than 10 rows available. Increase rows selector to view more rows.	

10. Query to display Name and Job of all employees who have not assigned a supervisor.
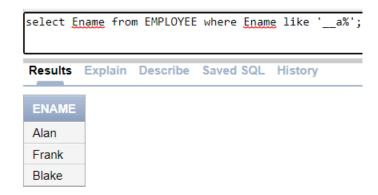
```
select Ename, Job_type from EMPLOYEE where SupervisionENO is NULL;
```

Results   Explain   Describe   Saved SQL   History

ENAME	JOB_TYPE
Eliot	Purchase Head
Abraham	Operations
Rose	IT
Elizabeth	HR & PR
Bill	Research and Development
King	Marketing and Sales
Stinson	Legal
Jacob	Accounting and Finance

11. Query to display the Name, Salary and Commission for all the employees who earn commission.

```
select Ename, Salary, Commission from EMPLOYEE where Commission is not NULL;
```

Results   Explain   Describe   Saved SQL   History

ENAME	SALARY	COMMISSION
Fredrik	2500.01	2900.2
Eliot	3260	3450.78
Frank	2980.7	2810
Abraham	2500.25	2775.5
Rose	3000	3220.75
Elizabeth	3000	2570
Bill	3100.75	3250
King	3000	3100.5
Stinson	3500	2900
Jacob	3000	3200
Samantha	2000	1500.5
Abigale	1900	2100
Stuart	2100	2500
Roosevelt	2500	2780.5
Jonathan	3200	2800
Alexander	3000	1500
Josh	3200	2500
Luke	3000.5	3500
Asha	3200	3400
Zeus	3050	2000
Hillary	2400	1500

12. Sort the data in descending order of Salary and Commission.

```
select * from EMPLOYEE order by Salary, Commission;
```

Results Explain Describe Saved SQL History

ENO	ENAME	JOB_TYPE	SUPERVISIONENO	HIRE_DATE	DNO	COMMISSION	SALARY
88	Alan	HR	773	08/23/1981	25	-	1850
71	Abigale	Product Research	774	11/23/1981	10	2100	1900
79	Samantha	Coder	771	10/02/1990	30	1500.5	2000
76	Stuart	Debugger	771	09/25/1992	30	2500	2100
75	McGonagal	PR	779	07/24/1980	22	-	2250.7
91	Hillary	PR	773	05/12/1983	25	1500	2400
81	Roosevelt	Product Quality Inspector	774	05/23/1980	10	2780.5	2500
90	Fredrik	District Manager	778	12/03/1986	15	2900.2	2500.01
778	Abraham	Operations	-	04/26/1984	15	2775.5	2500.25
80	Haley	IT	771	01/29/1995	30	-	2900
82	Frank	Apprentice	779	02/28/1976	22	2810	2980.7
72	Alexander	IT	771	02/25/1993	30	1500	3000
773	Elizabeth	HR & PR	-	05/05/1979	25	2570	3000
775	King	Marketing and Sales	-	02/08/1976	20	3100.5	3000
777	Jacob	Accounting and Finance	-	12/22/1975	18	3200	3000
771	Rose	IT	-	03/26/1990	30	3220.75	3000
77	Blake	Jr. Legal Advisor	776	11/26/1981	12	-	3000
74	Luke	IT	771	09/15/1993	30	3500	3000.5
89	Zeus	PR	773	01/01/1982	25	2000	3050
87	Nolan	PR	773	06/01/1981	25	-	3050
774	Bill	Research and Development	-	01/22/1976	10	3250	3100.75
83	Enola	IT	771	06/07/1995	30	-	3176
73	Josh	IT	771	07/22/1994	30	2500	3200
78	Jonathan	Sr. Legal Advisor	776	06/21/1978	12	2800	3200
86	Asha	PR	773	11/26/1980	25	3400	3200
84	Sherlok	IT	771	12/03/1993	30	-	3200
779	Eliot	Purchase Head	-	01/25/1976	22	3450.78	3260
776	Stinson	Legal	-	03/07/1978	12	2900	3500

13. Query to display Name of all the employees where the third letter of their name is 'A'.

```
select Ename from EMPLOYEE where Ename like '__a%';
```

Results Explain Describe Saved SQL History

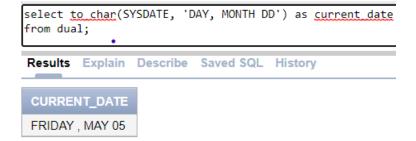| ENAME |
|-------|
| Alan |
| Frank |
| Blake |

14. Query to display Name of all employees either have two 'R's or have two 'A's in their name and are either in Dept No = 30 or their Manger's Employee No = 7788.

```
select Ename from EMPLOYEE where Ename like '%a%a%' or Ename like '%r%r%' and Dno = 30 or SupervisionENO = 778;
```

Results Explain Describe Saved SQL History

ENAME
Fredrik
McGonagal
Abraham
Samantha
Jonathan

15. Query to display Name, Salary and Commission for all employees whose Commission amount is greater than their Salary increased by 5%.

```
select Ename , Salary, Commission from EMPLOYEE where Commission > (Salary+Salary*0.05);
```

Results Explain Describe Saved SQL History

ENAME	SALARY	COMMISSION
Fredrik	2500.01	2900.2
Eliot	3260	3450.78
Abraham	2500.25	2775.5
Rose	3000	3220.75
Jacob	3000	3200
Abigale	1900	2100
Stuart	2100	2500
Roosevelt	2500	2780.5
Luke	3000.5	3500
Asha	3200	3400

16. Query to display the Current Date along with the day name.

```
select to_char(SYSDATE, 'DAY, MONTH DD') as current_date
from dual;
```

Results Explain Describe Saved SQL History

CURRENT_DATE
FRIDAY , MAY 05

17. Query to display Name, Hire Date and Salary Review Date which is the 1st Monday after six months of employment.

```
SELECT Ename, Hire_date, NEXT_DAY(ADD_MONTHS(Hire_date, 6), 'MONDAY') AS review_date
FROM EMPLOYEE;
```
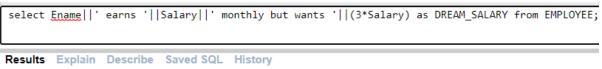
Results Explain Describe Saved SQL History

ENAME	HIRE_DATE	REVIEW_DATE
Alan	08/23/1981	03/01/1982
Fredrik	12/03/1986	06/08/1987
Eliot	01/25/1976	07/26/1976
Frank	02/28/1976	08/30/1976
McGonagal	07/24/1980	01/26/1981
Abraham	04/26/1984	10/29/1984
Rose	03/26/1990	10/01/1990
Elizabeth	05/05/1979	11/12/1979
Bill	01/22/1976	07/26/1976
King	02/08/1976	08/09/1976
Stinson	03/07/1978	09/11/1978
Jacob	12/22/1975	06/28/1976
Samantha	10/02/1990	04/08/1991
Abigale	11/23/1981	05/24/1982
Stuart	09/25/1992	03/29/1993
Roosevelt	05/23/1980	11/24/1980
Blake	11/26/1981	05/31/1982
Jonathan	06/21/1978	12/25/1978
Alexander	02/25/1993	08/30/1993
Josh	07/22/1994	01/23/1995
Luke	09/15/1993	03/21/1994
Haley	01/29/1995	07/31/1995
Enola	06/07/1995	12/11/1995
Sherlok	12/03/1993	06/06/1994
Asha	11/26/1980	06/01/1981
Nolan	06/01/1981	12/07/1981
Zeus	01/01/1982	07/05/1982
Hillary	05/12/1983	11/14/1983

18. Query to display Name and calculate the number of months between today and the date on which employee was hired of department 'Purchase'.
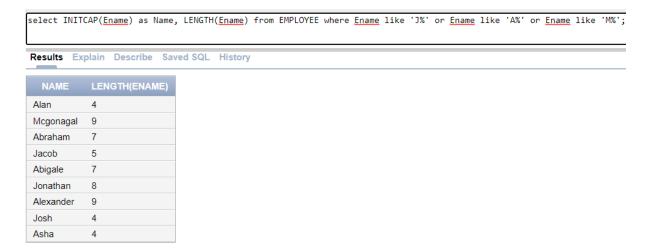
```
select Ename, round(MONTHS_BETWEEN(SYSDATE, Hire_date)) as Num_of_Months from EMPLOYEE where Dno = (select Dno from DEPARTMENT where Dname = 'Purchase');
```

Results Explain Describe Saved SQL History

ENAME	NUM_OF_MONTHS
Eliot	567
Frank	566
McGonagal	513

19. Query to display the following for each employee <E-Name> earns < Salary> monthly but wants < 3 * Current Salary >. Label the Column as Dream Salary.

```
select Ename||' earns '||Salary||' monthly but wants '||(3*Salary) as DREAM_SALARY from EMPLOYEE;
```

Results Explain Describe Saved SQL History

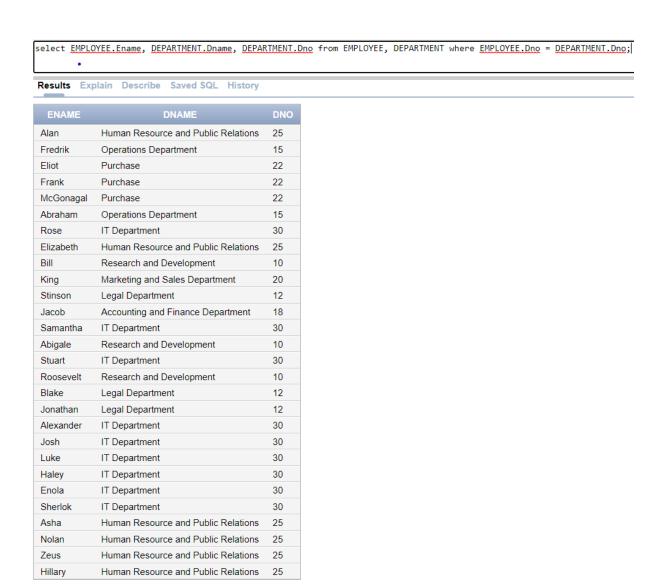| DREAM_SALARY |
|--------------|
| Alan earns 1850 monthly but wants 5550 |
| Fredrik earns 2500.01 monthly but wants 7500.03 |
| Eliot earns 3260 monthly but wants 9780 |
| Frank earns 2980.7 monthly but wants 8942.1 |
| McGonagal earns 2250.7 monthly but wants 6752.1 |
| Abraham earns 2500.25 monthly but wants 7500.75 |
| Rose earns 3000 monthly but wants 9000 |
| Elizabeth earns 3000 monthly but wants 9000 |
| Bill earns 3100.75 monthly but wants 9302.25 |
| King earns 3000 monthly but wants 9000 |
| Stinson earns 3500 monthly but wants 10500 |
| Jacob earns 3000 monthly but wants 9000 |
| Samantha earns 2000 monthly but wants 6000 |
| Abigale earns 1900 monthly but wants 5700 |
| Stuart earns 2100 monthly but wants 6300 |
| Roosevelt earns 2500 monthly but wants 7500 |
| Blake earns 3000 monthly but wants 9000 |
| Jonathan earns 3200 monthly but wants 9600 |
| Alexander earns 3000 monthly but wants 9000 |
| Josh earns 3200 monthly but wants 9600 |
| Luke earns 3000.5 monthly but wants 9001.5 |
| Haley earns 2900 monthly but wants 8700 |
| Enola earns 3176 monthly but wants 9528 |
| Sherlok earns 3200 monthly but wants 9600 |
| Asha earns 3200 monthly but wants 9600 |
| Nolan earns 3050 monthly but wants 9150 |
| Zeus earns 3050 monthly but wants 9150 |
| Hillary earns 2400 monthly but wants 7200 |

20. Query to display Name with the 1st letter capitalized and all other letter lower case and length of their name of all the employees whose name starts with 'J', 'A' and 'M'.

```
select INITCAP(Ename) as Name, LENGTH(Ename) from EMPLOYEE where Ename like 'J%' or Ename like 'A%' or Ename like 'M%';
```

Results Explain Describe Saved SQL History

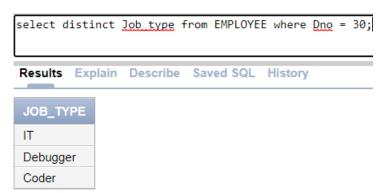| NAME	LENGTH(ENAME)
Alan	4
Mcgonagal	9
Abraham	7
Jacob	5
Abigale	7
Jonathan	8
Alexander	9
Josh	4
Asha	4

21. Query to display Name, Hire Date and Day of the week on which the employee started. 22. Query to display Name, Department Name and Department No for all the employees.

```
select Ename, Hire_date, EXTRACT(day from Hire_date) as Day from EMPLOYEE;
```

Results Explain Describe Saved SQL History

ENAME	HIRE_DATE	DAY
Alan	08/23/1981	23
Fredrik	12/03/1986	3
Eliot	01/25/1976	25
Frank	02/28/1976	28
McGonagal	07/24/1980	24
Abraham	04/26/1984	26
Rose	03/26/1990	26
Elizabeth	05/05/1979	5
Bill	01/22/1976	22
King	02/08/1976	8
Stinson	03/07/1978	7
Jacob	12/22/1975	22
Samantha	10/02/1990	2
Abigale	11/23/1981	23
Stuart	09/25/1992	25
Roosevelt	05/23/1980	23
Blake	11/26/1981	26
Jonathan	06/21/1978	21
Alexander	02/25/1993	25
Josh	07/22/1994	22
Luke	09/15/1993	15
Haley	01/29/1995	29
Enola	06/07/1995	7
Sherlok	12/03/1993	3
Asha	11/26/1980	26
Nolan	06/01/1981	1
Zeus	01/01/1982	1
Hillary	05/12/1983	12

22. Query to display Name, Department Name and Department No for all the employees.

```
select EMPLOYEE.Ename, DEPARTMENT.Dname, DEPARTMENT.Dno from EMPLOYEE, DEPARTMENT where EMPLOYEE.Dno = DEPARTMENT.Dno;
```

Results   Explain   Describe   Saved SQL   History

ENAME	DNAME	DNO
Alan	Human Resource and Public Relations	25
Fredrik	Operations Department	15
Eliot	Purchase	22
Frank	Purchase	22
McGonagal	Purchase	22
Abraham	Operations Department	15
Rose	IT Department	30
Elizabeth	Human Resource and Public Relations	25
Bill	Research and Development	10
King	Marketing and Sales Department	20
Stinson	Legal Department	12
Jacob	Accounting and Finance Department	18
Samantha	IT Department	30
Abigale	Research and Development	10
Stuart	IT Department	30
Roosevelt	Research and Development	10
Blake	Legal Department	12
Jonathan	Legal Department	12
Alexander	IT Department	30
Josh	IT Department	30
Luke	IT Department	30
Haley	IT Department	30
Enola	IT Department	30
Sherlok	IT Department	30
Asha	Human Resource and Public Relations	25
Nolan	Human Resource and Public Relations	25
Zeus	Human Resource and Public Relations	25
Hillary	Human Resource and Public Relations	25

23. Query to display Unique Listing of all Jobs that are in Department number 30.

```
select distinct Job_type from EMPLOYEE where Dno = 30;
```

Results   Explain   Describe   Saved SQL   History

JOB_TYPE
IT
Debugger
Coder

24. Query to display Name, Dept Name of all employees who have an 'A' in their name.

```
select EMPLOYEE.Ename, DEPARTMENT.Dname from EMPLOYEE, DEPARTMENT where EMPLOYEE.Dno = DEPARTMENT.Dno and Ename like '%a%';
```

Results Explain Describe Saved SQL History

ENAME	DNAME
Alan	Human Resource and Public Relations
Frank	Purchase
McGonagal	Purchase
Abraham	Operations Department
Elizabeth	Human Resource and Public Relations
Jacob	Accounting and Finance Department
Samantha	IT Department
Abigale	Research and Development
Stuart	IT Department
Blake	Legal Department
Jonathan	Legal Department
Alexander	IT Department
Haley	IT Department
Enola	IT Department
Asha	Human Resource and Public Relations
Nolan	Human Resource and Public Relations
Hillary	Human Resource and Public Relations

25. Query to display Name, Job, Department No. And Department Name for all the employees working at the Dallas location.

```
select EMPLOYEE.Ename, EMPLOYEE.Eno, EMPLOYEE.Dno, DEPARTMENT.Dname from EMPLOYEE, DEPARTMENT where EMPLOYEE.Dno = DEPARTMENT.Dno and DEPARTMENT.Location = 'Dallas';
```

Results Explain Describe Saved SQL History

ENAME	ENO	DNO	DNAME
Fredrik	90	15	Operations Department
Abraham	778	15	Operations Department
King	775	20	Marketing and Sales Department

26. Query to display Name and Employee no. Along with their supervisor's Name and the supervisor's employee no; along with the Employees' Name who do not have a supervisor.

```
SELECT E.Ename, E.Eno, S.Ename AS Supervisor_Name, S.Eno AS Supervisor_Number FROM EMPLOYEE E LEFT JOIN EMPLOYEE S ON E.SupervisionENO = S.Eno ORDER BY E.Ename;
```

Results Explain Describe Saved SQL History

ENAME	ENO	SUPERVISOR_NAME	SUPERVISOR_NUMBER
Abigale	71	Bill	774
Abraham	778	-	-
Alan	88	Elizabeth	773
Alexander	72	Rose	771
Asha	86	Elizabeth	773
Bill	774	-	-
Blake	77	Stinson	776
Eliot	779	-	-
Elizabeth	773	-	-
Enola	83	Rose	771
Frank	82	Eliot	779
Fredrik	90	Abraham	778
Haley	80	Rose	771
Hillary	91	Elizabeth	773
Jacob	777	-	-
Jonathan	78	Stinson	776
Josh	73	Rose	771
King	775	-	-
Luke	74	Rose	771
McGonagal	75	Eliot	779
Nolan	87	Elizabeth	773
Roosevelt	81	Bill	774
Rose	771	-	-
Samantha	79	Rose	771
Sherlok	84	Rose	771
Stinson	776	-	-
Stuart	76	Rose	771
Zeus	89	Elizabeth	773

27. Query to display Name, Dept No. And Salary of any employee whose department No. and salary matches both the department no. And the salary of any employee who earns a commission.

```
select Ename, Dno, Salary from EMPLOYEE where (Dno, Salary) in (select Dno, Salary from Employee where Commission is not NULL);
```

Results Explain Describe Saved SQL History

ENAME	DNO	SALARY
Fredrik	15	2500.01
Eliot	22	3260
Frank	22	2980.7
Abraham	15	2500.25
Alexander	30	3000
Rose	30	3000
Elizabeth	25	3000
Bill	10	3100.75
King	20	3000
Stinson	12	3500
Jacob	18	3000
Samantha	30	2000
Abigale	10	1900
Stuart	30	2100
Roosevelt	10	2500
Jonathan	12	3200
Sherlok	30	3200
Josh	30	3200
Luke	30	3000.5
Asha	25	3200
Zeus	25	3050
Nolan	25	3050
Hillary	25	2400

28. Query to display Name and Salaries represented by asterisks, where each asterisk (*) signifies $100.

```
select Ename, lpad('*', Salary/100, '*') as Salary from EMPLOYEE;
```

Results   Explain   Describe   Saved SQL   History

ENAME	SALARY
Alan	******************
Fredrik	*************************
Eliot	*********************************
Frank	*******************************
McGonagal	***********************
Abraham	**************************
Rose	********************************
Elizabeth	********************************
Bill	*********************************
King	*********************************
Stinson	**************************************
Jacob	*********************************
Samantha	********************
Abigale	*******************
Stuart	**********************
Roosevelt	**************************
Blake	*********************************
Jonathan	***********************************
Alexander	*********************************
Josh	***********************************
Luke	*********************************
Haley	********************************
Enola	*********************************
Sherlok	**********************************
Asha	**********************************
Nolan	*********************************
Zeus	*********************************
Hillary	**************************

29. Query to display the Highest, Lowest, Sum and Average Salaries of all the employees

```
select max(Salary) as Highest Salary, min(Salary) as Lowest Salary, sum(Salary) as SUM, avg(Salary) as Average Salary from EMPLOYEE;
```

Results   Explain   Describe   Saved SQL   History

HIGHEST_SALARY	LOWEST_SALARY	SUM	AVERAGE_SALARY
3500	1850	78818.91	2814.96107142857142857142857142857142857

30. Query to display the number of employees performing the same Job type functions.

```
select distinct count(Job_type) from EMPLOYEE;
```

Results Explain Describe Saved SQL History

COUNT(JOB_TYPE)
28

31. Query to display the total number of supervisors without listing their names.

```
select count(Ename) as No_of_Supervisors from EMPLOYEE where SupervisionENO is NULL;
```

Results Explain Describe Saved SQL History

NO_OF_SUPERVISORS
8

32. Query to display the Department Name, Location Name, No. of Employees and the average salary for all employees in that department.

```
select D.Dname, D.Location, count(E.Eno) as Employee_Count, avg(Salary) as Average_Salary  from DEPARTMENT D join EMPLOYEE E
on D.Dno = E.Dno GROUP BY D.Dname, D.Location HAVING COUNT(E.Eno) IN (SELECT COUNT(Eno) FROM EMPLOYEE GROUP BY Dno);
```

Results Explain Describe Saved SQL History

DNAME	LOCATION	EMPLOYEE_COUNT	AVERAGE_SALARY
IT Department	California	9	2841.83333333333333333333333333333333333
Purchase	Washington D.C.	3	2830.46666666666666666666666666666666667
Research and Development	Seattle	3	2500.25
Legal Department	Seattle	3	3233.33333333333333333333333333333333333
Accounting and Finance Department	California	1	3000
Human Resource and Public Relations	Washington D.C.	20	2352.5125
Marketing and Sales Department	Dallas	1	3000
Operations Department	Dallas	2	2500.13

33. Query to display Name and Hire Date for all employees in the same dept. as Blake.

```
select Ename, Hire_date from EMPLOYEE where Dno= (select Dno from EMPLOYEE where Ename like 'Blake');
```

Results Explain Describe Saved SQL History

ENAME	HIRE_DATE
Stinson	03/07/1978
Blake	11/26/1981
Jonathan	06/21/1978

34. Query to display the Employee No. And Name for all employees who earn more than the average salary.

```
select Eno, Salary from EMPLOYEE where Salary>(select avg(Salary) from EMPLOYEE);
```

Results Explain Describe Saved SQL History

ENO	SALARY
779	3260
82	2980.7
771	3000
773	3000
774	3100.75
775	3000
776	3500
777	3000
77	3000
78	3200
72	3000
73	3200
74	3000.5
80	2900
83	3176
84	3200
86	3200
87	3050
89	3050

35. Query to display Employee Number and Name for all employees who work in a department with any employee whose name contains a 'T'.

```
select Eno, Ename from EMPLOYEE where Dno in (select Dno from EMPLOYEE where Ename like '%t%');
```

Results Explain Describe Saved SQL History

ENO	ENAME
75	McGonagal
82	Frank
779	Eliot
91	Hillary
89	Zeus
87	Nolan
86	Asha
773	Elizabeth
88	Alan
78	Jonathan
77	Blake
776	Stinson
84	Sherlok
83	Enola
80	Haley
74	Luke
73	Josh
72	Alexander
76	Stuart
79	Samantha
771	Rose
81	Roosevelt
71	Abigale
774	Bill

36. Query to display the names and salaries of all employees who report to supervisor named 'King' .

```
select Dno, Ename, Job_type from EMPLOYEE where Dno = (select Dno from DEPARTMENT where Dname like 'Marketing and Sales Department');
```

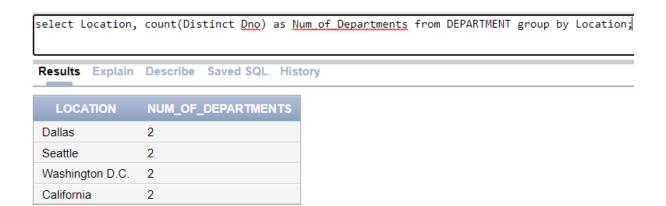**Results** Explain Describe Saved SQL History

DNO	ENAME	JOB_TYPE
20	King	Marketing and Sales

37. Query to display the department no, name and job for all employees in the Sales department

```
select Dno, Ename, Job_type from EMPLOYEE where Dno = (select Dno from DEPARTMENT where Dname like 'Marketing and Sales Department');
```

Results Explain Describe Saved SQL History

DNO	ENAME	JOB_TYPE
20	King	Marketing and Sales

38. Display names of employees along with their department name who have more than 20 years' experience.

```
select EMPLOYEE.Ename, DEPARTMENT.Dname from EMPLOYEE,DEPARTMENT where EMPLOYEE.Dno = DEPARTMENT.Dno and round(months_between(SYSDATE, Hire_date)/12) > 20;
```

Results Explain Describe Saved SQL History

ENAME	DNAME
Alan	Human Resource and Public Relations
Fredrik	Operations Department
Eliot	Purchase
Frank	Purchase
McGonagal	Purchase
Abraham	Operations Department
Rose	IT Department
Elizabeth	Human Resource and Public Relations
Bill	Research and Development
King	Marketing and Sales Department
Stinson	Legal Department
Jacob	Accounting and Finance Department
Samantha	IT Department
Abigale	Research and Development
Stuart	IT Department
Roosevelt	Research and Development
Blake	Legal Department
Jonathan	Legal Department
Alexander	IT Department
Josh	IT Department
Luke	IT Department
Haley	IT Department
Enola	IT Department
Sherlok	IT Department
Asha	Human Resource and Public Relations
Nolan	Human Resource and Public Relations
Zeus	Human Resource and Public Relations
Hillary	Human Resource and Public Relations

39. Display total number of departments at each location.

```
select Location, count(Distinct Dno) as Num_of_Departments from DEPARTMENT group by Location;
```

Results Explain Describe Saved SQL History

LOCATION	NUM_OF_DEPARTMENTS
Dallas	2
Seattle	2
Washington D.C.	2
California	2

40. Find the department name in which at least 20 employees work in.

```
select Dname from DEPARTMENT where Dno = (select Dno from Employee group by Dno having count(*)>=20);
```

Results Explain Describe Saved SQL History
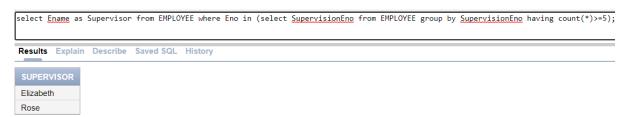
DNAME
Human Resource and Public Relations

41. Query to find the employee' name who is not supervisor and name of supervisor supervising more than 5 employees.

41 a)

```
select Ename from EMPLOYEE where SupervisionENO is not NULL;
```

Results Explain Describe Saved SQL History

ENAME
Alan
Fredrik
Frank
McGonagal
Samantha
Abigale
Stuart
Roosevelt
Blake
Jonathan
Alexander
Josh
Luke
Haley
Enola
Sherlok
Asha
Nolan
Zeus
Hillary

41 b)

```
select Ename as Supervisor from EMPLOYEE where Eno in (select SupervisionEno from EMPLOYEE group by SupervisionEno having count(*)>=5);
```

Results Explain Describe Saved SQL History

SUPERVISOR
Elizabeth
Rose

42. Query to display the job type with maximum and minimum employees

```
select Job_type from EMPLOYEE group by Job_type having count(Job_type) = (select max(count(Job_type)) from EMPLOYEE group by Job_type)
or count(Job_type) = (select min(count(Job_type)) from EMPLOYEE group by Job_type);
```

Results Explain Describe Saved SQL History

JOB_TYPE
District Manager
Apprentice
PR
Legal
Marketing and Sales
Debugger
Product Quality Inspector
Purchase Head
Research and Development
Product Research
HR & PR
Coder
Jr. Legal Advisor
Operations
Accounting and Finance
Sr. Legal Advisor

B) SELF REVIEW QUESTIONS

Three Tables are given, CUST, movie and Invoice;

Table Name : cust

Cust_id	Lname	Fname	Area	Phone_no
A01	Bay	Ivan	SA	6125467
A02	Satwal	Vandana	MU	5560379
A03	Jaguste	Pramada	DA	4563891
A04	Navindgi	Basu	BA	6125401
A05	Sreedharan	Ravi	VA	-
A06	-	Rukmini	GH	5125274

Table name : movie

Mv_no	Title	Type	Star	Price
1	Rush hour	Action	Jackie chan	180.95
2	The firm	Thriller	Tom Cruise	200.00
3	Days of Heaven	Romance	Richard gere	150.55
4	Home alone	comedy	Macaulay culkin	150.00
5	The fugitive	thriller	Harrison ford	200.00
6	Coma	suspense	Michael Douglas	100.00
7	Dracula	Horror	Gary oldman	150.25
8	Quick change	Comedy	Bill murray	100.00
9	Gone with the wind	Drama	Clarke gable	200.00
10	Carry on Doctor	Comedy	Leslie Phillips	100.00

Table name : Invoice

Inv_no	mv_no	Cust_id	Issue_dt	Return_dt
i01	4	a01	23-jul-93	25-jul-93
i02	3	a02	12-aug-93	15-aug-93
i03	1	a02	15-aug-93	18-aug-93
i04	6	a03	10-sep-93	13-sep-93
i05	7	a04	05-aug-93	08-aug-93
i06	2	a06	18-sep-93	21-sep-93
i07	9	a05	07-jul-93	10-jul-93
i08	9	a01	11-aug-93	14-aug-93
i09	5	a03	06-jul-93	09-jul-93
i10	8	a06	03-sep-93	06-sep-93

Queries:

1. Find out the movie number which has been issued to 'Ivan'.

```
select Mv_no from Invoice where Cust_id = (select Cust_id from CUST where Fname like 'Ivan');
```

Results Explain Describe Saved SQL History

MV_NO
4
9

2. Find the names and movie numbers of all the customers who have been issued a movie.

```
select CUST.Fname, Invoice.Mv_no from CUST, Invoice where CUST.Cust_id = Invoice.Cust_id and Inv_no is not NULL;
```

Results Explain Describe Saved SQL History

FNAME	MV_NO
Ivan	4
Vandana	3
Vandana	1
Pramada	6
Basu	7
Rukmini	2
Ravi	9
Ivan	9
Pramada	5
Rukmini	8

3. select the title, cust_id , mv_no for all the movies that are issued .

```
select movie.Title, Invoice.Mv_no, Invoice.Cust_id from movie, Invoice where movie.Mv_no = Invoice.Mv_no;
```

Results Explain Describe Saved SQL History

TITLE	MV_NO	CUST_ID
Home Alone	4	A01
Days of Heaven	3	A02
Rush Hour	1	A02
Coma	6	A03
Dracula	7	A04
The Film	2	A06
Gone with the Wind	9	A05
Gone with the Wind	9	A01
The Fugitive	5	A03
Quick Change	8	A06

4. Find out the title and types of the movies that have been issued to ' Vandana ' .

```
select Title, Type from movie where Mv_no in (select Mv_no from Invoice where Cust_id = (select Cust_id from CUST where Fname like 'Vandana'));
```

Results Explain Describe Saved SQL History

TITLE	TYPE
Rush Hour	Action
Days of Heaven	Romance

5. Find the names of the customers who have been issued movie of type 'drama'.

```
select Fname from CUST where Cust_id in (select Cust_id from Invoice where Mv_no = (select Mv_no from movie where Type like 'Drama'));
```

Results Explain Describe Saved SQL History

FNAME
Ravi
Ivan

6. Display the Title, Lname, Fname for customers having movie number greater than or equal to 3

```
select ('The movie taken by '||CUST.Fname||' '||CUST.Lname||' is '||movie.Title) as Movie_Info from movie, CUST, Invoice
where movie.Mv_no = Invoice.Mv_no and CUST.Cust_id = Invoice.Cust_id and movie.Mv_no >= 3;
```

Results Explain Describe Saved SQL History

MOVIE_INFO
The movie taken by Vandana Satwal is Days of Heaven
The movie taken by Ivan Bay is Home Alone
The movie taken by Pramada Jaguste is Coma
The movie taken by Basu Navindgi is Dracula
The movie taken by Rukmini is Quick Change
The movie taken by Pramada Jaguste is Gone with the Wind
The movie taken by Ravi Sreedharan is Gone with the Wind

7. Change the telephone number of Pramada to 466389.

```
Update CUST set Phone_no = 466389 where Fname = 'Pramada';
```

Results Explain Describe Saved SQL History

```
1 row(s) updated.
```

8. Change the issue_dt of cust_id 'A01' to 24/07/93 .

```
Update Invoice set Issue_date = 'JULY-24-1993' where Cust_id = 'A01';
```

Results Explain Describe Saved SQL History

```
2 row(s) updated.
```

9. Change the price of ' gone with the wind ' to Rs.250.00.

```
Update movie set Price = 250 where Title = 'Gone with the Wind';
```

Results Explain Describe Saved SQL History

```
1 row(s) updated.
```

10. Delete the record with invoice number 'i08' from the invoice table .

```
Delete from Invoice where Inv_no = 'I08';
```

Results Explain Describe Saved SQL History

```
1 row(s) deleted.
```

11. Delete all the records having return date before 10th July 93 .

```
Delete from Invoice where Return_date < DATE '1993-07-10';
select * from Invoice;
```

Results Explain Describe Saved SQL History

INV_NO	MV_NO	CUST_ID	ISSUE_DATE	RETURN_DATE
I01	4	A01	07/24/1993	07/25/1993
I02	3	A02	08/12/1993	08/15/1993
I03	1	A02	08/15/1993	08/18/1993
I04	6	A03	09/10/1993	09/13/1993
I05	7	A04	08/05/1993	08/08/1993
I06	2	A06	09/18/1993	09/21/1993
I07	9	A05	07/07/1993	07/10/1993
I10	8	A06	09/03/1993	09/06/1993

12. Change the area of Cust_id 'A05' to 'vs'.

```
update CUST set Area = 'VS' where Cust_id = 'A05';
select * from CUST;
```

Results Explain Describe Saved SQL History

CUST_ID	LNAME	FNAME	AREA	PHONE_NO
A01	Bay	Ivan	SA	6125467
A02	Satwal	Vandana	MU	5560379
A03	Jaguste	Pramada	DA	466389
A04	Navindgi	Basu	BA	6125401
A05	Sreedharan	Ravi	VS	–
A06	–	Rukmini	GH	5125274

13. Change the return date of invoice number ' i08' to 16-08-93 .

```
update Invoice set Return_date = 'AUGUST-16-1993' where Inv_no = 'I08';
select * from Invoice;
```

Results Explain Describe Saved SQL History

INV_NO	MV_NO	CUST_ID	ISSUE_DATE	RETURN_DATE
I01	4	A01	07/24/1993	07/25/1993
I02	3	A02	08/12/1993	08/15/1993
I03	1	A02	08/15/1993	08/18/1993
I04	6	A03	09/10/1993	09/13/1993
I05	7	A04	08/05/1993	08/08/1993
I06	2	A06	09/18/1993	09/21/1993
I07	9	A05	07/07/1993	07/10/1993
I10	8	A06	09/03/1993	09/06/1993
I08	9	A03	07/06/1993	08/16/1993