# Database Management System

## Practical File - 1

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

```
CODE: CREATE DATABASE Rishi_16;
USE Rishi_16;

 CREATE TABLE department
(
  Dno int(11) NOT NULL,
  Dname varchar(50) DEFAULT NULL,
  Location varchar(50) DEFAULT NULL,
  PRIMARY KEY (Dno)
)

 INSERT INTO department VALUES
(10,'Accounting','New York'),
(20,'Research','Dallas'),
(30,'Sales','Chicago'),
(40,'Operation','Boston'),
(50,'Marketing','New Delhi');


CREATE TABLE employee
 (
  Eno char(3) NOT NULL,
  Ename varchar(50) NOT NULL,
  Job_type varchar(50) NOT NULL,
  Supervision char(3) DEFAULT NULL,
  Hire_date date NOT NULL,
  Dno int(11) DEFAULT NULL,
```

```
  Commission decimal(10,2) DEFAULT NULL,
  Salary decimal(7,2) NOT NULL,
  PRIMARY KEY (Eno),
  CONSTRAINT Dno FOREIGN KEY (Dno) REFERENCES department (Dno),
  CONSTRAINT Manager FOREIGN KEY (Manager) REFERENCES employee (Eno)
)
```

```
  INSERT INTO employee VALUES ('736','Smith','Clerk','790','1981-12-
17',20,0.00,1000.00),
('749','Allan','Sales_man','769','1981-02-20',30,300.00,2000.00),
('752','Ward','Sales_man','769','1981-02-22',30,500.00,1300.00),
('756','Jones','Manager','783','1981-04-02',20,0.00,2300.00),
('765','Martin','Sales_man','784','1981-04-22',30,1400.00,1250.00),
('769','Blake','Manager','783','1981-05-01',30,0.00,2870.00),
('778','Clark','Manager','783','1981-06-09',10,0.00,2900.00),
('783','King','President',NULL,'1981-11-17',10,0.00,2950.00),
('784','Turner','Sales_man','769','1981-09-08',30,0.00,1450.00),
('787','Adams','Clerk','778','1983-01-12',20,0.00,1150.00),
('788','Scott','Analyst','756','1982-12-09',20,0.00,2850.00),
('790','James','Clerk','769','1981-12-03',30,0.00,950.00),
('792','Ford','Analyst','756','1981-12-03',20,0.00,2600.00),
('793','Miller','Clerk','788','1982-01-23',40,0.00,1300.00);
```

➔ Select * from Department;

OUTPUT:

```
mysql> select * from Department;
+-----+------------+-----------+
| Dno | Dname      | Location  |
+-----+------------+-----------+
|  10 | Accounting | New York  |
|  20 | Research   | Dallas    |
|  30 | Sales      | Chicago   |
|  40 | Operation  | Boston    |
|  50 | Marketing  | New Delhi |
+-----+------------+-----------+
5 rows in set (0.03 sec)
```

➔Select * from Employee;

OUTPUT:

```
mysql> select * from Employee;
+-----+--------+-----------+---------+------------+------+------------+---------+
| Eno | Ename  | Job_type  | Manager | Hire_date  | Dno  | Commission | Salary  |
+-----+--------+-----------+---------+------------+------+------------+---------+
| 736 | Smith  | Clerk     | 790     | 1981-12-17 |   20 |       0.00 | 1000.00 |
| 749 | Allan  | Sales_man | 769     | 1981-02-20 |   30 |     300.00 | 2000.00 |
| 752 | Ward   | Sales_man | 769     | 1981-02-22 |   30 |     500.00 | 1300.00 |
| 756 | Jones  | Manager   | 783     | 1981-04-02 |   20 |       0.00 | 2300.00 |
| 765 | Martin | Sales_man | 784     | 1981-04-22 |   30 |    1400.00 | 1250.00 |
| 769 | Blake  | Manager   | 783     | 1981-05-01 |   30 |       0.00 | 2870.00 |
| 778 | Clark  | Manager   | 783     | 1981-06-09 |   10 |       0.00 | 2900.00 |
| 783 | King   | President | NULL    | 1981-11-17 |   10 |       0.00 | 2950.00 |
| 784 | Turner | Sales_man | 769     | 1981-09-08 |   30 |       0.00 | 1450.00 |
| 787 | Adams  | Clerk     | 778     | 1983-01-12 |   20 |       0.00 | 1150.00 |
| 788 | Scott  | Analyst   | 756     | 1982-12-09 |   20 |       0.00 | 2850.00 |
| 790 | James  | Clerk     | 769     | 1981-12-03 |   30 |       0.00 |  950.00 |
| 792 | Ford   | Analyst   | 756     | 1981-12-03 |   20 |       0.00 | 2600.00 |
| 793 | Miller | Clerk     | 788     | 1982-01-23 |   40 |       0.00 | 1300.00 |
+-----+--------+-----------+---------+------------+------+------------+---------+
14 rows in set (0.01 sec)
```

# QUERIES

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

CODE: SELECT Eno, Ename, Job_type, Hire_date FROM employee;

OUTPUT:

```
mysql> SELECT Eno, Ename, Job_type, Hire_date FROM employee;
+-----+--------+-----------+------------+
| Eno | Ename  | Job_type  | Hire_date  |
+-----+--------+-----------+------------+
| 736 | Smith  | Clerk     | 1981-12-17 |
| 749 | Allan  | Sales_man | 1981-02-20 |
| 752 | Ward   | Sales_man | 1981-02-22 |
| 756 | Jones  | Manager   | 1981-04-02 |
| 765 | Martin | Sales_man | 1981-04-22 |
| 769 | Blake  | Manager   | 1981-05-01 |
| 778 | Clark  | Manager   | 1981-06-09 |
| 783 | King   | President | 1981-11-17 |
| 784 | Turner | Sales_man | 1981-09-08 |
| 787 | Adams  | Clerk     | 1983-01-12 |
| 788 | Scott  | Analyst   | 1982-12-09 |
| 790 | James  | Clerk     | 1981-12-03 |
| 792 | Ford   | Analyst   | 1981-12-03 |
| 793 | Miller | Clerk     | 1982-01-23 |
+-----+--------+-----------+------------+
14 rows in set (0.01 sec)
```

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

CODE: SELECT DISTINCT Job_type FROM employee;

OUTPUT:

```
mysql> SELECT DISTINCT Job_type FROM employee;
+-----------+
| Job_type  |
+-----------+
| Clerk     |
| Sales_man |
| Manager   |
| President |
| Analyst   |
+-----------+
5 rows in set (0.01 sec)
```

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

CODE: SELECT CONCAT(Ename, ',', Job_type) AS Name_Job FROM employee;

OUTPUT:

```
mysql> SELECT CONCAT(Ename, ',', Job_type) AS Name_Job FROM employee;
+------------------+
| Name_Job         |
+------------------+
| Smith,Clerk      |
| Allan,Sales_man  |
| Ward,Sales_man   |
| Jones,Manager    |
| Martin,Sales_man |
| Blake,Manager    |
| Clark,Manager    |
| King,President   |
| Turner,Sales_man |
| Adams,Clerk      |
| Scott,Analyst    |
| James,Clerk      |
| Ford,Analyst     |
| Miller,Clerk     |
+------------------+
14 rows in set (0.01 sec)
```

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.

CODE: SELECT CONCAT(Eno , ', ', Ename, ',', Job_type, ', ',Manager, ',' ,Hire_date, ',' ,Dno, ',' ,Commission, ',' ,Salary) AS THE_OUTPUT FROM employee;

OUTPUT:

```
mysql> SELECT CONCAT(Eno , ', ', Ename, ',', Job_type, ', ',Manager, ',' ,Hire_date, ',' ,Dno, ',' ,Commission, ',' ,Sal
ary) AS THE_OUTPUT FROM employee;
+-----------------------------------------------------+
| THE_OUTPUT                                          |
+-----------------------------------------------------+
| 736, Smith,Clerk, 790,1981-12-17,20,0.00,1000.00    |
| 749, Allan,Sales_man, 769,1981-02-20,30,300.00,2000.00 |
| 752, Ward,Sales_man, 769,1981-02-22,30,500.00,1300.00 |
| 756, Jones,Manager, 783,1981-04-02,20,0.00,2300.00  |
| 765, Martin,Sales_man, 784,1981-04-22,30,1400.00,1250.00 |
| 769, Blake,Manager, 783,1981-05-01,30,0.00,2870.00  |
| 778, Clark,Manager, 783,1981-06-09,10,0.00,2900.00  |
| NULL                                                |
| 784, Turner,Sales_man, 769,1981-09-08,30,0.00,1450.00 |
| 787, Adams,Clerk, 778,1983-01-12,20,0.00,1150.00    |
| 788, Scott,Analyst, 756,1982-12-09,20,0.00,2850.00  |
| 790, James,Clerk, 769,1981-12-03,30,0.00,950.00     |
| 792, Ford,Analyst, 756,1981-12-03,20,0.00,2600.00   |
| 793, Miller,Clerk, 788,1982-01-23,40,0.00,1300.00   |
+-----------------------------------------------------+
14 rows in set (0.00 sec)
```

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

CODE: SELECT Ename, Salary FROM employee WHERE ( Salary + Commission ) > 2850;

OUTPUT:

```
mysql> SELECT Ename, Salary FROM employee WHERE ( Salary + Commission ) > 2850;
+-------+---------+
| Ename | Salary  |
+-------+---------+
| Blake | 2870.00 |
| Clark | 2900.00 |
| King  | 2950.00 |
+-------+---------+
3 rows in set (0.01 sec)
```

6. Query to display Employee Name and Department Number for the Employee No= 790.

CODE: SELECT Ename,Dno FROM employee WHERE Eno='790';

OUTPUT:

```
mysql> SELECT Ename,Dno FROM employee WHERE Eno='790';
+-------+------+
| Ename | Dno  |
+-------+------+
| James |   30 |
+-------+------+
1 row in set (0.01 sec)
```

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

CODE: SELECT Ename,Salary FROM employee WHERE Salary NOT BETWEEN 1500 AND 2850;

OUTPUT:

```
mysql> SELECT Ename,Salary FROM employee WHERE Salary NOT BETWEEN 1500 AND 2850;
+--------+---------+
| Ename  | Salary  |
+--------+---------+
| Smith  | 1000.00 |
| Ward   | 1300.00 |
| Martin | 1250.00 |
| Blake  | 2870.00 |
| Clark  | 2900.00 |
| King   | 2950.00 |
| Turner | 1450.00 |
| Adams  | 1150.00 |
| James  |  950.00 |
| Miller | 1300.00 |
+--------+---------+
10 rows in set (0.00 sec)
```

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.

CODE: SELECT Ename,Dno FROM employee WHERE Dno=10 OR DNO=30 ORDER BY Ename;

OUTPUT:

```
mysql> SELECT Ename,Dno FROM employee WHERE Dno=10 OR DNO=30 ORDER BY Ename;
+--------+------+
| Ename  | Dno  |
+--------+------+
| Allan  |   30 |
| Blake  |   30 |
| Clark  |   10 |
| James  |   30 |
| King   |   10 |
| Martin |   30 |
| Turner |   30 |
| Ward   |   30 |
+--------+------+
8 rows in set (0.01 sec)
```

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

CODE: SELECT Ename,Hire_date FROM EMPLOYEE WHERE Hire_date LIKE '1981%';

OUTPUT:

```
mysql> SELECT Ename,Hire_date FROM EMPLOYEE WHERE Hire_date LIKE '1981%';
+--------+------------+
| Ename  | Hire_date  |
+--------+------------+
| Smith  | 1981-12-17 |
| Allan  | 1981-02-20 |
| Ward   | 1981-02-22 |
| Jones  | 1981-04-02 |
| Martin | 1981-04-22 |
| Blake  | 1981-05-01 |
| Clark  | 1981-06-09 |
| King   | 1981-11-17 |
| Turner | 1981-09-08 |
| James  | 1981-12-03 |
| Ford   | 1981-12-03 |
+--------+------------+
11 rows in set (0.01 sec)
```

10. Query to display Name and Job of all employees who don't have a current Manager.

CODE: SELECT Ename,Job_type FROM employee WHERE Manager IS NULL;

OUTPUT:

```
mysql> SELECT Ename,Job_type FROM employee WHERE Manager IS NULL;
+-------+-----------+
| Ename | Job_type  |
+-------+-----------+
| King  | President |
+-------+-----------+
1 row in set (0.01 sec)
```

11. Query to display the Name, Salary and Commission for all the employees who earn commission. Sort the data in descending order of Salary and Commission.

CODE: SELECT Ename,Salary,Commission FROM employee WHERE Commission > 0.00 ORDER BY Salary DESC,Commission DESC;

OUTPUT:

```
mysql> SELECT Ename,Salary,Commission FROM employee WHERE Commission > 0.00 ORDER BY Salary DESC,Commission DESC;
+-------+---------+------------+
| Ename | Salary  | Commission |
+-------+---------+------------+
| Allan | 2000.00 |     300.00 |
| Ward  | 1300.00 |     500.00 |
| Martin| 1250.00 |    1400.00 |
+-------+---------+------------+
3 rows in set (0.00 sec)
```

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

CODE: SELECT Ename FROM employee WHERE Ename LIKE '__A%';

OUTPUT:

```
mysql> SELECT Ename FROM employee WHERE Ename LIKE '__A%';
+-------+
| Ename |
+-------+
| Blake |
| Clark |
| Adams |
+-------+
3 rows in set (0.01 sec)
```

13. 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 = 778.

CODE: SELECT Ename,Dno,Manager FROM employee WHERE Ename LIKE '%A%A%' OR Ename LIKE '%R%R%' AND Dno=30 OR Manager='778';

OUTPUT:

```
mysql> SELECT Ename,Dno,Manager FROM employee WHERE Ename LIKE '%A%A%' OR Ename LIKE '%R%R%' AND Dno=30 OR Manager='778'
;
+--------+------+---------+
| Ename  | Dno  | Manager |
+--------+------+---------+
| Allan  |   30 | 769     |
| Turner |   30 | 769     |
| Adams  |   20 | 778     |
+--------+------+---------+
3 rows in set (0.00 sec)
```

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

CODE: SELECT Ename,Salary,Commission FROM employee WHERE Commission > (Salary+Salary*0.05);

OUTPUT:

```
+--------+---------+------------+
| Ename  | Salary  | Commission |
+--------+---------+------------+
| Martin | 1250.00 |    1400.00 |
+--------+---------+------------+
1 row in set (0.00 sec)
```

15. Query to display the Current Date.

CODE: SELECT CURDATE();

OUTPUT:

```
+------------+
| curdate()  |
+------------+
| 2023-03-17 |
+------------+
1 row in set (0.00 sec)
```

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

CODE: SELECT Ename,Hire_date,date_add(date_add(Hire_date,INTERVAL 6 MONTH),INTERVAL (7-WEEKDAY(date_add(Hire_date,INTERVAL 6 MONTH))) DAY) AS REVIEW_DATE FROM employee;

OUTPUT:

```
+--------+------------+-------------+
| Ename  | Hire_date  | REVIEW_DATE |
+--------+------------+-------------+
| Smith  | 1981-12-17 | 1982-06-21  |
| Allan  | 1981-02-20 | 1981-08-24  |
| Ward   | 1981-02-22 | 1981-08-24  |
| Jones  | 1981-04-02 | 1981-10-05  |
| Martin | 1981-04-22 | 1981-10-26  |
| Blake  | 1981-05-01 | 1981-11-02  |
| Clark  | 1981-06-09 | 1981-12-14  |
| King   | 1981-11-17 | 1982-05-24  |
| Turner | 1981-09-08 | 1982-03-15  |
| Adams  | 1983-01-12 | 1983-07-18  |
| Scott  | 1982-12-09 | 1983-06-13  |
| James  | 1981-12-03 | 1982-06-07  |
| Ford   | 1981-12-03 | 1982-06-07  |
| Miller | 1982-01-23 | 1982-07-26  |
+--------+------------+-------------+
```

17. Query to display Name and calculate the number of months between today and the date each employee was hired.

CODE: SELECT Ename,12 * (YEAR(curdate())-YEAR(Hire_date)) + (MONTH(CURDATE())-MONTH(Hire_date)) AS MONTHS FROM employee;

OUTPUT:

```
+--------+--------+
| Ename  | MONTHS |
+--------+--------+
| Smith  |    495 |
| Allan  |    505 |
| Ward   |    505 |
| Jones  |    503 |
| Martin |    503 |
| Blake  |    502 |
| Clark  |    501 |
| King   |    496 |
| Turner |    498 |
| Adams  |    482 |
| Scott  |    483 |
| James  |    495 |
| Ford   |    495 |
| Miller |    494 |
+--------+--------+
14 rows in set (0.00 sec)
```

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

CODE: SELECT CONCAT(Ename,' earns ',Salary,' monthly but wants ',3*Salary) AS DREAMY_SALARY FROM employee;

OUTPUT:

```
+---------------------------------------------+
| DREAMY_SALARY                               |
+---------------------------------------------+
| Smith earns 1000.00 monthly but wants 3000.00  |
| Allan earns 2000.00 monthly but wants 6000.00  |
| Ward earns 1300.00 monthly but wants 3900.00   |
| Jones earns 2300.00 monthly but wants 6900.00  |
| Martin earns 1250.00 monthly but wants 3750.00 |
| Blake earns 2870.00 monthly but wants 8610.00  |
| Clark earns 2900.00 monthly but wants 8700.00  |
| King earns 2950.00 monthly but wants 8850.00   |
| Turner earns 1450.00 monthly but wants 4350.00 |
| Adams earns 1150.00 monthly but wants 3450.00  |
| Scott earns 2850.00 monthly but wants 8550.00  |
| James earns 950.00 monthly but wants 2850.00   |
| Ford earns 2600.00 monthly but wants 7800.00   |
| Miller earns 1300.00 monthly but wants 3900.00 |
+---------------------------------------------+
14 rows in set (0.00 sec)
```

19. 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’.

CODE: SELECT CONCAT( UPPER(SUBSTRING(Ename,1,1)) , LOWER(SUBSTRING(Ename,2,50))) AS NAME,LENGTH(Ename) AS LENGTH FROM employee WHERE Ename LIKE 'J%' OR Ename LIKE 'A%' OR Ename LIKE 'M%';

OUTPUT:

```
+--------+--------+
| NAME   | LENGTH |
+--------+--------+
| Allan  |      5 |
| Jones  |      5 |
| Martin |      6 |
| Adams  |      5 |
| James  |      5 |
| Miller |      6 |
+--------+--------+
6 rows in set (0.00 sec)
```

20. Query to display Name, Hire Date and Day of the week on which the employee started.

CODE: SELECT Ename, Hire_date, DAYNAME(Hire_date) AS WEEK_DAY FROM employee;

OUTPUT:

```
+--------+------------+-----------+
| Ename  | Hire_date  | WEEK_DAY  |
+--------+------------+-----------+
| Smith  | 1981-12-17 | Thursday  |
| Allan  | 1981-02-20 | Friday    |
| Ward   | 1981-02-22 | Sunday    |
| Jones  | 1981-04-02 | Thursday  |
| Martin | 1981-04-22 | Wednesday |
| Blake  | 1981-05-01 | Friday    |
| Clark  | 1981-06-09 | Tuesday   |
| King   | 1981-11-17 | Tuesday   |
| Turner | 1981-09-08 | Tuesday   |
| Adams  | 1983-01-12 | Wednesday |
| Scott  | 1982-12-09 | Thursday  |
| James  | 1981-12-03 | Thursday  |
| Ford   | 1981-12-03 | Thursday  |
| Miller | 1982-01-23 | Saturday  |
+--------+------------+-----------+
14 rows in set (0.00 sec)
```

20

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

CODE: SELECT e.Ename,d.Dname,e.Dno FROM employee AS e,department AS d WHERE e.Dno=d.Dno;

OUTPUT:

| Ename | Dname | Dno |
|---|---|---|
| Clark | Accounting | 10 |
| King | Accounting | 10 |
| Smith | Research | 20 |
| Jones | Research | 20 |
| Adams | Research | 20 |
| Scott | Research | 20 |
| Ford | Research | 20 |
| Allan | Sales | 30 |
| Ward | Sales | 30 |
| Martin | Sales | 30 |
| Blake | Sales | 30 |
| Turner | Sales | 30 |
| James | Sales | 30 |
| Miller | Operation | 40 |

14 rows in set (0.00 sec)

22. Query to display Unique Listing of all Jobs that are in Department # 30.

CODE: SELECT DISTINCT Job_type FROM employee WHERE Dno=30;

OUTPUT:

| Job_type |
|---|
| Sales_man |
| Manager |
| Clerk |

3 rows in set (0.00 sec)

23. Query to display Name, Dept Name of all employees who have an ‘A’ in their name.

CODE:

SELECT e.Ename,d.Dname FROM employee AS e,department as d WHERE e.Ename LIKE '%A%' AND e.Dno=d.Dno;

OUTPUT:

```
+--------+------------+
| Ename  | Dname      |
+--------+------------+
| Allan  | Sales      |
| Ward   | Sales      |
| Martin | Sales      |
| Blake  | Sales      |
| Clark  | Accounting |
| Adams  | Research   |
| James  | Sales      |
+--------+------------+
7 rows in set (0.00 sec)
```

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

CODE: SELECT e.Ename,e.Job_type,e.Dno,d.Dname FROM employee AS e,department as d WHERE e.Dno=d.Dno AND d.Location='Dallas';

OUTPUT:

```
+-------+----------+------+----------+
| Ename | Job_type | Dno  | Dname    |
+-------+----------+------+----------+
| Smith | Clerk    |   20 | Research |
| Jones | Manager  |   20 | Research |
| Adams | Clerk    |   20 | Research |
| Scott | Analyst  |   20 | Research |
| Ford  | Analyst  |   20 | Research |
+-------+----------+------+----------+
5 rows in set (0.00 sec)
```

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

CODE:

```
SELECT e.Ename,e.Eno,d.Ename,d.Eno FROM employee AS e
LEFT OUTER JOIN employee as d ON e.Eno=d.supervisor;
```

OUTPUT:

```
+--------+-----+--------+------+
| Ename  | Eno | Ename  | Eno  |
+--------+-----+--------+------+
| Smith  | 736 | NULL   | NULL |
| Allan  | 749 | NULL   | NULL |
| Ward   | 752 | NULL   | NULL |
| Jones  | 756 | Scott  | 788  |
| Jones  | 756 | Ford   | 792  |
| Martin | 765 | NULL   | NULL |
| Blake  | 769 | Allan  | 749  |
| Blake  | 769 | Ward   | 752  |
| Blake  | 769 | Turner | 784  |
| Blake  | 769 | James  | 790  |
| Clark  | 778 | Adams  | 787  |
| King   | 783 | Jones  | 756  |
| King   | 783 | Blake  | 769  |
| King   | 783 | Clark  | 778  |
| Turner | 784 | Martin | 765  |
| Adams  | 787 | NULL   | NULL |
| Scott  | 788 | Miller | 793  |
| James  | 790 | Smith  | 736  |
| Ford   | 792 | NULL   | NULL |
| Miller | 793 | NULL   | NULL |
+--------+-----+--------+------+
20 rows in set (0.00 sec)
```

26. 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.

CODE: SELECT Ename,Dno,Salary FROM employee WHERE

(Dno,Salary) IN (SELECT Dno,Salary FROM employee WHERE Commission>0);

OUTPUT:

```
+--------+------+---------+
| Ename  | Dno  | Salary  |
+--------+------+---------+
| Allan  |   30 | 2000.00 |
| Ward   |   30 | 1300.00 |
| Martin |   30 | 1250.00 |
+--------+------+---------+
3 rows in set (0.01 sec)
```

26

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

CODE:

SELECT Ename,REPEAT ('*',(Salary/100)) AS SALARY_IN_STAR FROM employee;

OUTPUT:

```
+--------+------------------------------+
| Ename  | SALARY_IN_STAR               |
+--------+------------------------------+
| Smith  | **********                   |
| Allan  | ********************         |
| Ward   | *************                |
| Jones  | ************************     |
| Martin | *************                |
| Blake  | ******************************|
| Clark  | ******************************|
| King   | ******************************|
| Turner | ***************              |
| Adams  | ************                 |
| Scott  | ******************************|
| James  | **********                   |
| Ford   | ************************     |
| Miller | *************                |
+--------+------------------------------+
14 rows in set (0.01 sec)
```

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

CODE: SELECT MAX(Salary),MIN(Salary),SUM(Salary),AVG(Salary) FROM employee;

OUTPUT;

```
+-------------+-------------+-------------+-------------+
| MAX(Salary) | MIN(Salary) | SUM(Salary) | AVG(Salary) |
+-------------+-------------+-------------+-------------+
|     2950.00 |      950.00 |    26870.00 | 1919.285714 |
+-------------+-------------+-------------+-------------+
1 row in set (0.01 sec)
```

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

CODE:

SELECT job_type,COUNT(*) FROM employee GROUP BY Job_type;

OUTPUT:

```
+-----------+----------+
| job_type  | COUNT(*) |
+-----------+----------+
| Clerk     |        4 |
| Sales_man |        4 |
| Manager   |        3 |
| President |        1 |
| Analyst   |        2 |
+-----------+----------+
5 rows in set (0.01 sec)
```

30. Query to display the no. Of managers without listing their names.

CODE:

```
SELECT COUNT(DISTINCT Manager) FROM employee;
```

OUTPUT:

```
+-------------------------+
| COUNT(DISTINCT Manager) |
+-------------------------+
|                       7 |
+-------------------------+
1 row in set (0.01 sec)
```

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

CODE:

```
SELECT d.Dname,d.Location,AVG(e.Salary),COUNT(*) FROM employee AS e,department AS d WHERE d.Dno=e.Dno GROUP BY d.Dname;
```

OUTPUT:

```
+------------+----------+---------------+----------+
| Dname      | Location | AVG(e.Salary) | COUNT(*) |
+------------+----------+---------------+----------+
| Research   | Dallas   |   1980.000000 |        5 |
| Sales      | Chicago  |   1636.666667 |        6 |
| Accounting | New York |   2925.000000 |        2 |
| Operation  | Boston   |   1300.000000 |        1 |
+------------+----------+---------------+----------+
4 rows in set (0.02 sec)
```

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

CODE:

```
SELECT Ename,Hire_date FROM employee WHERE
Dno=(SELECT Dno FROM employee WHERE Ename='Blake');
```

OUTPUT:

```
+--------+------------+
| Ename  | Hire_date  |
+--------+------------+
| Allan  | 1981-02-20 |
| Ward   | 1981-02-22 |
| Martin | 1981-04-22 |
| Blake  | 1981-05-01 |
| Turner | 1981-09-08 |
| James  | 1981-12-03 |
+--------+------------+
6 rows in set (0.00 sec)
```

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

CODE:

```
SELECT Eno,Ename FROM employee WHERE Salary > (Select
AVG(Salary) FROM employee);
```

OUTPUT:

```
+-----+-------+
| Eno | Ename |
+-----+-------+
| 749 | Allan |
| 756 | Jones |
| 769 | Blake |
| 778 | Clark |
| 783 | King  |
| 788 | Scott |
| 792 | Ford  |
+-----+-------+
7 rows in set (0.01 sec)
```

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

```
SELECT e.Eno,e.Ename FROM employee AS e ,employee as d
WHERE e.Manager=d.Eno AND d.Ename LIKE '%T%';
```

OUTPUT:

```
+-----+--------+
| Eno | Ename  |
+-----+--------+
| 765 | Martin |
| 793 | Miller |
+-----+--------+
2 rows in set (0.01 sec)
```

35. Query to display the names and salaries of all employees who report to King.

CODE:

```
SELECT Ename,Salary FROM employee WHERE
Manager=(SELECT Eno FROM employee WHERE Ename='King');
```

OUTPUT:

```
+-------+---------+
| Ename | Salary  |
+-------+---------+
| Jones | 2300.00 |
| Blake | 2870.00 |
| Clark | 2900.00 |
+-------+---------+
3 rows in set (0.00 sec)
```

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

CODE:

```
SELECT e.Dno,e.Ename,e.Job_type FROM employee AS
e,department as d WHERE d.Dno=e.Dno AND d.Dname='Sales';
```

OUTPUT:

```
+------+--------+-----------+
| Dno  | Ename  | Job_type  |
+------+--------+-----------+
|   30 | Allan  | Sales_man |
|   30 | Ward   | Sales_man |
|   30 | Martin | Sales_man |
|   30 | Blake  | Manager   |
|   30 | Turner | Sales_man |
|   30 | James  | Clerk     |
+------+--------+-----------+
6 rows in set (0.00 sec)
```

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

CODE:

```
SELECT Ename, Dname FROM (EMPLOYEE NATURAL JOIN
DEPARTMENT) WHERE TIMESTAMPDIFF
(YEAR,Hire_date,NOW() ) > 20;
```

OUTPUT:

```
+--------+------------+
| Ename  | Dname      |
+--------+------------+
| Clark  | Accounting |
| King   | Accounting |
| Smith  | Research   |
| Jones  | Research   |
| Adams  | Research   |
| Scott  | Research   |
| Ford   | Research   |
| Allan  | Sales      |
| Ward   | Sales      |
| Martin | Sales      |
| Blake  | Sales      |
| Turner | Sales      |
| James  | Sales      |
| Miller | Operation  |
+--------+------------+
14 rows in set (0.01 sec)
```

## 39. Display total number of departments at each location

CODE:

SELECT Location,COUNT(*) FROM DEPARTMENT GROUP BY Location;

OUTPUT:

```
+-----------+----------+
| Location  | COUNT(*) |
+-----------+----------+
| New York  |        1 |
| Dallas    |        1 |
| Chicago   |        1 |
| Boston    |        1 |
| New Delhi |        1 |
+-----------+----------+
5 rows in set (0.00 sec)
```

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

CODE: SELECT Dname FROM (EMPLOYEE NATURAL JOIN DEPARTMENT) GROUP BY Dno HAVING COUNT(*) > 20;

OUTPUT:

```
+----------+
| Dname    |
+----------+
| Research |
| Sales    |
+----------+
2 rows in set (0.00 sec)
```

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

CODE:

```
(SELECT Ename FROM EMPLOYEE WHERE Eno NOT IN
(SELECT DISTINCT SupervisorENo FROM EMPLOYEE
WHERE SupervisorENo IS NOT NULL )

)

UNION

(

 SELECT Ename FROM EMPLOYEE WHERE Eno IN
(SELECT SupervisorENo FROM EMPLOYEE WHERE
SupervisorENo IS NOT NULL GROUP BY SupervisorENo
HAVING COUNT(*) > 5
```

)

);

OUTPUT:

```
+--------+
| Ename  |
+--------+
| Smith  |
| Allan  |
| Ward   |
| Martin |
| Adams  |
| Ford   |
| Miller |
+--------+
7 rows in set (0.00 sec)
```

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

CODE: WITH JOBCOUNT AS ( SELECT COUNT(*) AS ECount FROM EMPLOYEE GROUP BY Job_type) SELECT Job_type, COUNT(*) FROM EMPLOYEE GROUP BY Job_type HAVING COUNT(*) IN (

( SELECT MAX(ECount) FROM JOBCOUNT

)

UNION

(

SELECT MIN(ECount) FROM JOBCOUNT )

);

OUTPUT:

```
+-----------+----------+
| Job_type  | COUNT(*) |
+-----------+----------+
| Clerk     |        4 |
| Sales_man |        4 |
| President |        1 |
+-----------+----------+
3 rows in set (0.01 sec)
```