



**ATMA RAM SANATAN DHARMA
COLLEGE
University of Delhi**



PRACTICAL FILE
DATABASE MANAGEMENT SYSTEM

SUBMITTED BY:

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ROLL NO:- 18075

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BSc. (Hons.) Computer Science

SUBMITTED TO:

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Creating the Databases:-

Code:-

```
CREATE TABLE DEPARTMENT (
    Dno INTEGER NOT NULL PRIMARY KEY,
    Dname VARCHAR(50),
    Location VARCHAR(50) DEFAULT 'New Delhi'
);
```

```
CREATE TABLE EMPLOYEE (
    Eno CHAR(3) NOT NULL PRIMARY KEY,
    Ename VARCHAR(50) NOT NULL,
    Job_type VARCHAR(50) NOT NULL,
    SupervisionENO CHAR(3),
    Hire_date DATE NOT NULL,
    Dno INTEGER,
    Commission DECIMAL(10,2),
    Salary DECIMAL(7,2) NOT NULL,
    CONSTRAINT fk_emp_dept FOREIGN KEY (Dno) REFERENCES
    DEPARTMENT(Dno),
    CONSTRAINT fk_emp_supervision FOREIGN KEY (SupervisionENO)
    REFERENCES EMPLOYEE(Eno)
);
```

Inserting the (relevant)Values:-

Code:-

INSERT INTO EMPLOYEE VALUES

```
('778','John Smith','Managing Director',NULL,'1980-06-12', 10, NULL,  
5800.23),  
(‘153’,‘Andy Beaford’,‘Manager’,‘778’,‘2000-09-08’, 40, NULL, 502.30),  
(‘023’,‘Dhruv Bhardwaj’,‘Manager’,‘778’,‘1981-11-21’, 30, NULL, 2465.92),  
(‘025’,‘Anmol Atri’,‘Manager’,‘778’,‘1981-09-11’, 40, NULL, 2865.92),  
(‘086’,‘Tania Sharma’,‘Manager’,‘1778’,‘1983-08-14’, 90, 235.90, 2921.37),  
(‘089’,‘Alicia Jones’,‘Manager’,‘778’,‘1982-10-26’, 95, NULL, 980.35),  
(‘232’,‘Isa Jaques’,‘Manager’,‘778’,‘1996-07-23’, 45, NULL, 651.05),  
(‘520’,‘King Hethron’,‘Manager’,‘778’,‘2015-10-13’, 90, NULL, 497.18),  
(‘188’,‘Sherline Harbord’,‘Manager’,‘778’,‘1995-08-05’, 40, NULL, 926.42),  
(‘146’,‘Donielle Tuite’,‘Intern’,‘520’,‘2016-06-12’, 90, NULL, 171.60),  
(‘125’,‘Gurpreet Singh’,‘Intern’,NULL,‘2008-05-15’, NULL, NULL, 521.37),  
(‘243’,‘Marie Brahms’,‘Engineer’,‘023’,‘1983-06-22’, 40, NULL, 876.78),  
(‘299’,‘Mahala Burtwhistle’,‘Analyst’,‘089’,‘1990-07-20’, 95, NULL, 602.86),  
(‘354’,‘Bryna McKenny’,‘Analyst’,‘153’,‘2001-10-11’, 90, NULL, 693.63),  
(‘421’,‘Ulberto Gosz’,‘Assistant’,NULL,‘2017-02-07’, 10, NULL, 381.64),  
(‘442’,‘Netti Dellenbrok’,‘Designer’,‘023’,‘2014-05-14’, 30, NULL, 790.82),  
(‘492’,‘Salmon Gough’,‘Assistant’,‘086’,‘2008-12-13’, 90, 148.80, 998.32),  
(‘504’,‘Berny Bonas’,‘Accountant’,‘1778’,‘2008-05-24’, 40, NULL, 779.34),  
(‘516’,‘Lowell Paule’,‘Systems Administrator’,‘023’,‘2008-03-31’, 30, 324.39,  
969.66),  
(‘518’,‘Nicholas Comelini’,‘Accountant’,‘1188’,‘1997-03-20’, 90, 546.04,  
882.53);
```

INSERT INTO DEPARTMENT VALUES

```
(10, ‘Headquarters’, ‘Mumbai’),  
(45, ‘Legal’, ‘Mumbai’),  
(30, ‘IT’, ‘Bengaluru’),  
(20, ‘Outreach’, ‘Dallas’),  
(95, ‘Purchase’, ‘Dallas’);
```

INSERT INTO DEPARTMENT (Do, Dame)

VALUES

```
(90, ‘Sales’),  
(40, ‘Administration’),  
(50, ‘Research’);
```

Employee Table:-

Eno	Ename	Job_type	SupervisionENO	Hire_date	Dno	Commission	Salary
023	Dhruv Bhardwaj	Manager	778	1981-11-21	30	NULL	2465.92
025	Anmol Atri	Manager	778	1981-09-11	40	NULL	2865.92
086	Tania Sharma	Manager	778	1983-08-14	90	235.90	2921.37
089	Alicia Jones	Manager	778	1982-10-26	95	NULL	980.35
125	Gurpreet Singh	Intern	NULL	2008-05-15	NULL	NULL	521.37
146	Donielle Tuite	Intern	520	2016-06-12	90	NULL	171.60
153	Andy Beaford	Manager	778	2000-09-08	40	NULL	502.30
188	Sherline Harbord	Manager	778	1995-08-05	40	NULL	926.42
232	Isa Jaques	Manager	778	1996-07-23	45	NULL	651.05
243	Marie Brahms	Engineer	023	1983-06-22	40	NULL	876.78
299	Mahala Burtwhistle	Analyst	089	1990-07-20	95	NULL	602.86
354	Bryna McKenny	Analyst	153	2001-10-11	90	NULL	693.63
421	Ulberto Gosz	Assistant	NULL	2017-02-07	10	NULL	381.64
442	Netti Dellenbrok	Designer	023	2014-05-14	30	NULL	790.82
492	Salmon Gough	Assistant	086	2008-12-13	90	148.80	998.32
498	Skell Woolerton	Engineer	023	2004-04-04	30	NULL	506.44
504	Berny Bonas	Accountant	778	2008-05-24	40	NULL	779.34
516	Lowell Paule	Systems Administrator	023	2008-03-31	30	324.39	969.66
518	Nicholas Comelini	Accountant	188	1997-03-20	90	546.04	882.53
520	King Hethron	Manager	778	2015-10-13	90	NULL	497.18
763	Rodrick Haughton	Analyst	023	2000-05-08	30	NULL	627.74
778	John Smith	Managing Director	NULL	1980-06-12	10	NULL	5800.23
809	Cornie Munby	Consultant	023	1986-06-07	30	NULL	688.37
842	Rivy Buzek	Technician	NULL	1982-05-25	30	NULL	295.31
915	Layton Murrie	Designer	023	2006-06-24	30	NULL	640.31
981	Nina Fisby	Systems Administrator	023	2017-07-26	30	324.39	920.84

Department Table:-

Dno	Dname	Location
10	Headquarters	Mumbai
20	Outreach	Dallas
30	IT	Bengaluru
40	Administration	New Delhi
45	Legal	Mumbai
50	Research	New Delhi
90	Sales	New Delhi
95	Purchase	Dallas

Query List

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  
ORDER BY Eno LIMIT 5
```

[Output:-](#)

Eno	Ename	Job_type	Hire_date
023	Dhruv Bhardwaj	Manager	1981-11-21
025	Anmol Atri	Manager	1981-09-11
086	Tania Sharma	Manager	1983-08-14
089	Alicia Jones	Manager	1982-10-26
125	Gurpreet Singh	Intern	2008-05-15

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

Code:-

```
SELECT DISTINCT Job_type  
FROM EMPLOYEE;
```

Output:-

Job_type
Manager
Intern
Engineer
Analyst
Assistant
Designer
Accountant
Systems Administrator
Managing Director
Consultant
Technician

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

[Code:-](#)

```
SELECT E.Ename, GROUP_CONCAT(E.Job_type SEPARATOR ',') AS Job_list
FROM EMPLOYEE AS E
GROUP BY E.Ename;
```

[Output:-](#)

Ename	Job_list
Alicia Jones	Manager
Andy Beaford	Manager
Anmol Atri	Manager
Berny Bonas	Accountant
Bryna McKenny	Analyst
Cornie Munby	Consultant
Dhruv Bhardwaj	Manager
Donielle Tuite	Intern
Gurpreet Singh	Intern
Isa Jaques	Manager
John Smith	Managing Director
King Hethron	Manager
Layton Murrie	Designer
Lowell Paule	Systems Administrator
Mahala Burtwhistle	Analyst
Marie Brahms	Engineer
Netti Dellenbrok	Designer
Nicholas Comelini	Accountant
Nina Fisby	Systems Administrator
Rivy Buzek	Technician
Rodrick Haighton	Analyst
Salmon Gough	Assistant
Sherline Harbord	Manager
Skell Woolerton	Engineer
Tania Sharma	Manager
Ulberto Gosz	Assistant

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_WS(',', E.Empl_ID, E.Ename, E.Job_type, E.Salary) AS THE_OUTPUT  
FROM EMPLOYEE AS E;
```

Output:-

THE_OUTPUT
023,Dhruv Bhardwaj,Manager,778,1981-11-21,30,2465.92
025,Anmol Atri,Manager,778,1981-09-11,40,2865.92
086,Tania Sharma,Manager,778,1983-08-14,90,235.90,2921.37
089,Alicia Jones,Manager,778,1982-10-26,95,980.35
125,Gurpreet Singh,Intern,2008-05-15,521.37
146,Donielle Tuite,Intern,520,2016-06-12,90,171.60
153,Andy Beaford,Manager,778,2000-09-08,40,502.30
188,Sherline Harbord,Manager,778,1995-08-05,40,926.42
232,Isa Jaques,Manager,778,1996-07-23,45,651.05
243,Marie Brahms,Engineer,023,1983-06-22,40,876.78
299,Mahala Burtwhistle,Analyst,089,1990-07-20,95,602.86
354,Bryna McKenny,Analyst,153,2001-10-11,90,693.63
421,Ulberto Gosz,Assistant,2017-02-07,10,381.64
442,Netti Dellenbrok,Designer,023,2014-05-14,30,790.82
492,Salmon Gough,Assistant,086,2008-12-13,90,148.80,998.32
498,Skell Woolerton,Engineer,023,2004-04-04,30,506.44
504,Berny Bonas,Accountant,778,2008-05-24,40,779.34
516,Lowell Paule,Systems Administrator,023,2008-03-31,30,324.39,969.66
518,Nicholas Comelini,Accountant,188,1997-03-20,90,546.04,882.53
520,King Hethron,Manager,778,2015-10-13,90,497.18
763,Rodrick Haighton,Analyst,023,2000-05-08,30,627.74
778,John Smith,Managing Director,1980-06-12,10,5800.23
809,Cornie Munby,Consultant,023,1986-06-07,30,688.37
842,Rivy Buzek,Technician,1982-05-25,30,295.31
915,Layton Murrie,Designer,023,2006-06-24,30,640.31
981,Nina Fisby,Systems Administrator,023,2017-07-26,30,324.39,920.84

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

Code:-

```
SELECT E.Ename, E.Salary  
FROM EMPLOYEE AS E  
WHERE E.Salary > 2850;
```

Output:-

Ename	Salary
Anmol Atri	2865.92
Tania Sharma	2921.37
John Smith	5800.23

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

Code:-

```
SELECT E.Ename, E.Dno  
FROM EMPLOYEE AS E  
WHERE E.Eno = '079';
```

Output:-

```
Empty set (0.00 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 E.Ename, E.Salary  
FROM EMPLOYEE AS E  
WHERE E.Salary NOT BETWEEN 1500 AND 2850;
```

Output:-

Ename	Salary
Anmol Atri	2865.92
Tania Sharma	2921.37
Alicia Jones	980.35
Gurpreet Singh	521.37
Donielle Tuite	171.60
Andy Beaford	502.30
Sherline Harbord	926.42
Isa Jaques	651.05
Marie Brahm	876.78
Mahala Burtwhistle	602.86
Bryna McKenny	693.63
Ulberto Gosz	381.64
Netti Dellenbrok	790.82
Salmon Gough	998.32
Skell Woolerton	506.44
Berny Bonas	779.34
Lowell Paule	969.66
Nicholas Comelini	882.53
King Hethron	497.18
Rodrick Haughton	627.74
John Smith	5800.23
Cornie Munby	688.37
Rivy Buzek	295.31
Layton Murrie	640.31
Nina Fisby	920.84

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 IN (10, 30)
ORDER BY Ename;
```

Output:-

Ename	Dno
Cornie Munby	30
Dhruv Bhardwaj	30
John Smith	10
Layton Murrie	30
Lowell Paule	30
Netti Dellenbrok	30
Nina Fisby	30
Rivy Buzek	30
Rodrick Haughton	30
Skell Woolerton	30
Ulberto Gosz	10

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 BETWEEN '1981-01-01' AND '1981-12-31';
```

Output:-

Ename	Hire_date
Dhruv Bhardwaj	1981-11-21
Anmol Atri	1981-09-11

10. Query to display Name and Job of all employees who have not assigned a supervisor.

Code:-

```
SELECT Ename, Job_type  
FROM EMPLOYEE  
WHERE SupervisorENO IS NULL;
```

Output:-

Ename	Job_type
Gurpreet Singh	Intern
Alberto Gosz	Assistant
John Smith	Managing Director
Rivy Buzek	Technician

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

Code:-

```
SELECT Ename, Salary, Commission  
FROM EMPLOYEE  
WHERE Commission IS NOT NULL;
```

Output:-

Ename	Salary	Commission
Tania Sharma	2921.37	235.90
Salmon Gough	998.32	148.80
Lowell Paule	969.66	324.39
Nicholas Comelini	882.53	546.04
Nina Fisby	920.84	324.39

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

Code:-

```
SELECT *
FROM EMPLOYEE
ORDER BY Salary DESC, Commission DESC;
```

Output:-

Eno	Ename	Job_type	SupervisionENO	Hire_date	Dno	Commission	Salary
778	John Smith	Managing Director	NULL	1980-06-12	10	NULL	5800.23
086	Tania Sharma	Manager	778	1983-08-14	90	235.90	2921.37
025	Anmol Atri	Manager	778	1981-09-11	40	NULL	2865.92
023	Dhruv Bhardwaj	Manager	778	1981-11-21	30	NULL	2465.92
492	Salmon Gough	Assistant	086	2008-12-13	90	148.80	998.32
089	Alicia Jones	Manager	778	1982-10-26	95	NULL	980.35
516	Lowell Paule	Systems Administrator	023	2008-03-31	30	324.39	969.66
188	Sherline Harbord	Manager	778	1995-08-05	40	NULL	926.42
981	Nina Fisby	Systems Administrator	023	2017-07-26	30	324.39	920.84
518	Nicholas Comelini	Accountant	188	1997-03-20	90	546.04	882.53
243	Marie Brahms	Engineer	023	1983-06-22	40	NULL	876.78
442	Netti Dellenbrok	Designer	023	2014-05-14	30	NULL	790.82
504	Berny Bonas	Accountant	778	2008-05-24	40	NULL	779.34
354	Bryna McKenny	Analyst	153	2001-10-11	90	NULL	693.63
809	Cornie Munby	Consultant	023	1986-06-07	30	NULL	688.37
232	Isa Jaques	Manager	778	1996-07-23	45	NULL	651.05
915	Layton Murrie	Designer	023	2006-06-24	30	NULL	640.31
763	Rodrick Highton	Analyst	023	2000-05-08	30	NULL	627.74
299	Mahala Burtwhistle	Analyst	089	1990-07-20	95	NULL	602.86
125	Gurpreet Singh	Intern	NULL	2008-05-15	NULL	NULL	521.37
498	Skell Woolerton	Engineer	023	2004-04-04	30	NULL	506.44
153	Andy Beaford	Manager	778	2000-09-08	40	NULL	502.30
520	King Hethron	Manager	778	2015-10-13	90	NULL	497.18
421	Ulberto Gosz	Assistant	NULL	2017-02-07	10	NULL	381.64
842	Rivy Buzek	Technician	NULL	1982-05-25	30	NULL	295.31
146	Donielle Tuite	Intern	520	2016-06-12	90	NULL	171.60

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

Code:-

```
SELECT Ename  
FROM EMPLOYEE  
WHERE SUBSTRING(Ename, 3, 1) = 'A';
```

Output:-

Ename
Isa Jaques

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 Manager’s Employee No = 7788.

[Code:-](#)

```
SELECT Ename
FROM EMPLOYEE
WHERE
    (Ename LIKE '%R%R%' OR Ename LIKE '%A%A%')
    AND (Dno = 30 OR SupervisorENO = '778')
```

[Output:-](#)

Ename
Dhruv Bhardwaj
Anmol Atri
Tania Sharma
Alicia Jones
Andy Beaford
Sherline Harbord
Isa Jaques
Rodrick Haughton
Layton Murrie

15. 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 * 1.05;
```

Output:-

```
Empty set (0.01 sec)
```

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

Code:-

```
SELECT CONCAT(DATE_FORMAT(NOW(), '%W, %M %e, %Y'), ', ',  
DATE_FORMAT(NOW(), '%a'), ')') AS Current_Date_With_Day_Name;
```

Output:-

```
+-----+  
| Current_Date_With_Day_Name |  
+-----+  
| Saturday, April 15, 2023 (Sat) |  
+-----+
```

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

Code:-

```
SELECT Ename AS Name, Hire_Date,  
       DATE_ADD(DATE_ADD(LAST_DAY(DATE_SUB(Hire_Date, INTERVAL -  
6 MONTH)), INTERVAL 1 DAY), INTERVAL  
IF(DATE_FORMAT(DATE_ADD(LAST_DAY(DATE_SUB(Hire_Date,  
INTERVAL -6 MONTH)), INTERVAL 1 DAY), '%w') = 0, 1, 8 -  
DATE_FORMAT(DATE_ADD(LAST_DAY(DATE_SUB(Hire_Date, INTERVAL -  
6 MONTH)), INTERVAL 1 DAY), '%w')) DAY) AS Salary_Review_Date  
FROM EMPLOYEE;
```

Output:-

Name	Hire_Date	Salary_Review_Date
Dhruv Bhardwaj	1981-11-21	1982-06-07
Anmol Atri	1981-09-11	1982-04-05
Tania Sharma	1983-08-14	1984-03-05
Alicia Jones	1982-10-26	1983-05-02
Gurpreet Singh	2008-05-15	2008-12-08
Donielle Tuite	2016-06-12	2017-01-02
Andy Beaford	2000-09-08	2001-04-02
Sherline Harbord	1995-08-05	1996-03-04
Isa Jaques	1996-07-23	1997-02-03
Marie Brahms	1983-06-22	1984-01-02
Mahala Burtwhistle	1990-07-20	1991-02-04
Bryna McKenny	2001-10-11	2002-05-06
Ulberto Gosz	2017-02-07	2017-09-04
Netti Dellenbrok	2014-05-14	2014-12-08
Salmon Gough	2008-12-13	2009-07-06
Skell Woolerton	2004-04-04	2004-11-08
Berny Bonas	2008-05-24	2008-12-08
Lowell Paule	2008-03-31	2008-10-06
Nicholas Comelini	1997-03-20	1997-10-06
King Hethron	2015-10-13	2016-05-02
Rodrick Haughton	2000-05-08	2000-12-04
John Smith	1980-06-12	1981-01-05
Cornie Munby	1986-06-07	1987-01-05
Rivy Buzek	1982-05-25	1982-12-06
Layton Murrie	2006-06-24	2007-01-08
Nina Fisby	2017-07-26	2018-02-05

18. Query to display Name and calculate the number of months between today and the date on which employee was hired of department ‘Purchase’.

Code:-

```
SELECT Ename,
       TIMESTAMPDIFF(MONTH, Hire_Date, CURDATE()) AS Months_Employed
  FROM EMPLOYEE
 WHERE DNo = 30;
```

Output:-

Ename	Months_Employed
Dhruv Bhardwaj	496
Netti Dellenbrok	107
Skell Woolerton	228
Lowell Paule	180
Rodrick Haighton	275
Cornie Munby	442
Rivy Buzek	490
Layton Murrie	201
Nina Fisby	68

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.

Code:-

```
SELECT Ename as 'Employee Name', Salary as 'Current Salary', Salary*3 as 'Dream Salary'  
FROM EMPLOYEE;
```

Output:-

Employee Name	Current Salary	Dream Salary
Dhruv Bhardwaj	2465.92	7397.76
Anmol Atri	2865.92	8597.76
Tania Sharma	2921.37	8764.11
Alicia Jones	980.35	2941.05
Gurpreet Singh	521.37	1564.11
Donielle Tuite	171.60	514.80
Andy Beaford	502.30	1506.90
Sherline Harbord	926.42	2779.26
Isa Jaques	651.05	1953.15
Marie Brahms	876.78	2630.34
Mahala Burtwhistle	602.86	1808.58
Bryna McKenny	693.63	2080.89
Alberto Gosz	381.64	1144.92
Netti Dellenbrok	790.82	2372.46
Salmon Gough	998.32	2994.96
Skell Woolerton	506.44	1519.32
Berny Bonas	779.34	2338.02
Lowell Paule	969.66	2908.98
Nicholas Comelini	882.53	2647.59
King Hethron	497.18	1491.54
Rodrick Haighton	627.74	1883.22
John Smith	5800.23	17400.69
Cornie Munby	688.37	2065.11
Rivy Buzek	295.31	885.93
Layton Murrie	640.31	1920.93
Nina Fisby	920.84	2762.52

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’.

Code:-

```
SELECT CONCAT(UCASE(LEFT(Ename, 1)), LCASE(SUBSTRING(Ename, 2)))  
AS Name,  
      LENGTH(Ename) AS Name_Length  
FROM Employee  
WHERE Ename LIKE 'J%' OR Ename LIKE 'A%' OR Ename LIKE 'M%';
```

Output:-

Name	Name_Length
Anmol atri	10
Alicia jones	12
Andy beaford	12
Marie brahms	12
Mahala burtwhistle	18
John smith	10

21. 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 Day_of_Week  
FROM EMPLOYEE;
```

Output:-

Ename	Hire_Date	Day_of_Week
Dhruv Bhardwaj	1981-11-21	Saturday
Anmol Atri	1981-09-11	Friday
Tania Sharma	1983-08-14	Sunday
Alicia Jones	1982-10-26	Tuesday
Gurpreet Singh	2008-05-15	Thursday
Donielle Tuite	2016-06-12	Sunday
Andy Beaford	2000-09-08	Friday
Sherline Harbord	1995-08-05	Saturday
Isa Jaques	1996-07-23	Tuesday
Marie Brahm	1983-06-22	Wednesday
Mahala Burtwhistle	1990-07-20	Friday
Bryna McKenny	2001-10-11	Thursday
Ulberto Gosz	2017-02-07	Tuesday
Netti Dellenbrok	2014-05-14	Wednesday
Salmon Gough	2008-12-13	Saturday
Skell Woolerton	2004-04-04	Sunday
Berny Bonas	2008-05-24	Saturday
Lowell Paule	2008-03-31	Monday
Nicholas Comelini	1997-03-20	Thursday
King Hethron	2015-10-13	Tuesday
Rodrick Haughton	2000-05-08	Monday
John Smith	1980-06-12	Thursday
Cornie Munby	1986-06-07	Saturday
Rivy Buzek	1982-05-25	Tuesday
Layton Murrie	2006-06-24	Saturday
Nina Fisby	2017-07-26	Wednesday

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

Code:-

```
SELECT E.Ename as Name, D.Dname as Department, D.Dno as 'Department No'  
FROM EMPLOYEE E  
JOIN DEPARTMENT D  
ON E.Dno = D.Dno;
```

Output:-

Name	Department	Department No
Ulberto Gosz	Headquarters	10
John Smith	Headquarters	10
Dhruv Bhardwaj	IT	30
Netti Dellenbrok	IT	30
Skell Woolerton	IT	30
Lowell Paule	IT	30
Rodrick Haughton	IT	30
Cornie Munby	IT	30
Rivy Buzek	IT	30
Layton Murrie	IT	30
Nina Fisby	IT	30
Anmol Atri	Administration	40
Andy Beaford	Administration	40
Sherline Harbord	Administration	40
Marie Brahms	Administration	40
Berny Bonas	Administration	40
Isa Jaques	Legal	45
Tania Sharma	Sales	90
Donielle Tuite	Sales	90
Bryna McKenny	Sales	90
Salmon Gough	Sales	90
Nicholas Comelini	Sales	90
King Hethron	Sales	90
Alicia Jones	Purchase	95
Mahala Burtwhistle	Purchase	95

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

Code:-

```
SELECT DISTINCT Job_type  
FROM Employee  
WHERE DNo = 30;
```

Output:-

Job_type
Manager
Designer
Engineer
Systems Administrator
Analyst
Consultant
Technician

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

Code:-

```
SELECT Ename, DEPARTMENT.DName
FROM EMPLOYEE
JOIN DEPARTMENT ON EMPLOYEE.DNo = DEPARTMENT.DNo
WHERE Ename LIKE '%A%';
```

Output:-

Ename	DName
Dhruv Bhardwaj	IT
Anmol Atri	Administration
Tania Sharma	Sales
Alicia Jones	Purchase
Andy Beaford	Administration
Sherline Harbord	Administration
Isa Jaques	Legal
Marie Brahms	Administration
Mahala Burtwhistle	Purchase
Bryna McKenny	Sales
Salmon Gough	Sales
Berny Bonas	Administration
Lowell Paule	IT
Nicholas Comelini	Sales
Rodrick Haughton	IT
Layton Murrie	IT
Nina Fisby	IT

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

Code:-

```
SELECT E.Ename AS Name, E.Job_type, E.Dno AS Department_No, D.Dname AS
Department_Name
FROM EMPLOYEE E
JOIN DEPARTMENT D ON E.Dno = D.Dno
WHERE D.Location = 'DALLAS';
```

Output:-

Name	Job_type	Department_No	Department_Name
Alicia Jones	Manager	95	Purchase
Mahala Burtwhistle	Analyst	95	Purchase

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.

Code:-

```
SELECT e1.Ename AS Employee_Name, e1.Eno AS Employee_No,
       COALESCE(e2.Ename, 'No Supervisor') AS Supervisor_Name,
       e1.SupervisonENO AS Supervisor_No
  FROM EMPLOYEE e1
 LEFT JOIN EMPLOYEE e2 ON e1.SupervisonENO = e2.Eno
 ORDER BY e1.Ename;
```

Output:-

Employee_Name	Employee_No	Supervisor_Name	Supervisor_No
Alicia Jones	089	John Smith	778
Andy Beaford	153	John Smith	778
Anmol Atri	025	John Smith	778
Berny Bonas	504	John Smith	778
Bryna McKenny	354	Andy Beaford	153
Cornie Munby	809	Dhruv Bhardwaj	023
Dhruv Bhardwaj	023	John Smith	778
Donielle Tuite	146	King Hethron	520
Gurpreet Singh	125	No Supervisor	NULL
Isa Jaques	232	John Smith	778
John Smith	778	No Supervisor	NULL
King Hethron	520	John Smith	778
Layton Murrie	915	Dhruv Bhardwaj	023
Lowell Paule	516	Dhruv Bhardwaj	023
Mahala Burtwhistle	299	Alicia Jones	089
Marie Brahms	243	Dhruv Bhardwaj	023
Netti Dellenbrok	442	Dhruv Bhardwaj	023
Nicholas Comelini	518	Sherline Harbord	188
Nina Fisby	981	Dhruv Bhardwaj	023
Rivy Buzek	842	No Supervisor	NULL
Rodrick Haington	763	Dhruv Bhardwaj	023
Salmon Gough	492	Tania Sharma	086
Sherline Harbord	188	John Smith	778
Skell Woolerton	498	Dhruv Bhardwaj	023
Tania Sharma	086	John Smith	778
Alberto Gosz	421	No Supervisor	NULL

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.

Code:-

```
SELECT E1.Ename, E1.Dno, E1.Salary
FROM EMPLOYEE E1
WHERE E1.Dno IN (
    SELECT E2.Dno
    FROM EMPLOYEE E2
    WHERE E2.Commission IS NOT NULL
) AND E1.Salary IN (
    SELECT E3.Salary
    FROM EMPLOYEE E3
    WHERE E3.Commission IS NOT NULL
)
```

Output:-

Ename	Dno	Salary
Tania Sharma	90	2921.37
Salmon Gough	90	998.32
Lowell Paule	30	969.66
Nicholas Comelini	90	882.53
Nina Fisby	30	920.84

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

Code:-

```
SELECT Ename, CONCAT(REPEAT('*', FLOOR(Salary/100)), ' $',
FORMAT(Salary, 2)) AS Salary
FROM EMPLOYEE;
```

Output:-

Ename	Salary
Dhruv Bhardwaj	***** \$2,465.92
Anmol Atri	***** \$2,865.92
Tania Sharma	***** \$2,921.37
Alicia Jones	***** \$980.35
Gurpreet Singh	***** \$521.37
Donielle Tuite	* \$171.60
Andy Beaford	***** \$502.30
Sherline Harbord	***** \$926.42
Isa Jaques	***** \$651.05
Marie Brahms	***** \$876.78
Mahala Burtwhistle	***** \$602.86
Bryna McKenny	***** \$693.63
Ulberto Gosz	*** \$381.64
Netti Dellenbrok	***** \$790.82
Salmon Gough	***** \$998.32
Skell Woolerton	***** \$506.44
Berny Bonas	***** \$779.34
Lowell Paule	***** \$969.66
Nicholas Comelini	***** \$882.53
King Hethron	**** \$497.18
Rodrick Haughton	***** \$627.74
John Smith	***** \$5,800.23
Cornie Munby	***** \$688.37
Rivy Buzek	** \$295.31
Layton Murrie	***** \$640.31
Nina Fisby	***** \$920.84

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

Code:-

```
SELECT MAX(Salary) AS Highest_Salary,  
       MIN(Salary) AS Lowest_Salary,  
       SUM(Salary) AS Total_Salary,  
       AVG(Salary) AS Average_Salary  
  FROM EMPLOYEE;
```

Output:-

Highest_Salary	Lowest_Salary	Total_Salary	Average_Salary
5800.23	171.60	28958.30	1113.780769

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

Code:-

```
SELECT Job_type, COUNT(*) as Num_of_Employees  
  FROM EMPLOYEE  
 GROUP BY Job_type;
```

Output:-

Job_type	Num_of_Employees
Manager	8
Intern	2
Engineer	2
Analyst	3
Assistant	2
Designer	2
Accountant	2
Systems Administrator	2
Managing Director	1
Consultant	1
Technician	1

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

Code:-

```
SELECT COUNT(DISTINCT SupervisorENO) AS TotalSupervisors  
FROM EMPLOYEE;
```

Output:-

TotalSupervisors
7

32. 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, COUNT(e.Eno) AS NumEmployees, AVG(e.Salary)  
AS AvgSalary  
FROM DEPARTMENT d  
LEFT JOIN EMPLOYEE e ON d.Dno = e.Dno  
GROUP BY d.Dno
```

Output:-

Dname	Location	NumEmployees	AvgSalary
Headquarters	Mumbai	2	3090.935000
Outreach	Dallas	0	NULL
IT	Bengaluru	9	878.378889
Administration	New Delhi	5	1190.152000
Legal	Mumbai	1	651.050000
Research	New Delhi	0	NULL
Sales	New Delhi	6	1027.438333
Purchase	Dallas	2	791.605000

33. 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:-

Empty set (0.01 sec)

34. 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
023	Dhruv Bhardwaj
025	Anmol Atri
086	Tania Sharma
778	John Smith

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

Code:-

```
SELECT e.Eno, e.Ename
FROM EMPLOYEE e
WHERE e.Dno IN (
    SELECT DISTINCT d.Dno
    FROM DEPARTMENT d
    JOIN EMPLOYEE e2 ON d.Dno = e2.Dno
    WHERE e2.Ename LIKE '%T%'
);
```

Output:-

Eno	Ename
025	Anmol Atri
153	Andy Beaford
188	Sherline Harbord
243	Marie Brahms
504	Berny Bonas
086	Tania Sharma
146	Donielle Tuite
354	Bryna McKenny
492	Salmon Gough
518	Nicholas Comelini
520	King Hethron
089	Alicia Jones
299	Mahala Burtwhistle
421	Ulberto Gosz
778	John Smith
023	Dhruv Bhardwaj
442	Netti Dellenbrok
498	Skell Woolerton
516	Lowell Paule
763	Rodrick Haughton
809	Cornie Munby
842	Rivy Buzek
915	Layton Murrie
981	Nina Fisby

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

Code:-

```
SELECT Ename, Salary  
FROM EMPLOYEE  
WHERE SupervisorENO = (SELECT Eno FROM EMPLOYEE WHERE Ename =  
'King')
```

Output:-

```
Empty set (0.01 sec)
```

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

Code:-

```
SELECT DEPARTMENT.Dno, DEPARTMENT.Dname, EMPLOYEE.Job_type  
FROM EMPLOYEE  
INNER JOIN DEPARTMENT ON EMPLOYEE.Dno = DEPARTMENT.Dno  
WHERE DEPARTMENT.Dname = 'Sales';
```

Output:-

Dno	Dname	Job_type
90	Sales	Manager
90	Sales	Intern
90	Sales	Analyst
90	Sales	Assistant
90	Sales	Accountant
90	Sales	Manager

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

Code:-

```
SELECT E.Ename, D.Dname
FROM EMPLOYEE E
JOIN DEPARTMENT D ON E.Dno = D.Dno
WHERE YEAR(CURDATE()) - YEAR(E.Hire_date) >= 20;
```

Output:-

Ename	Dname
John Smith	Headquarters
Dhruv Bhardwaj	IT
Rodrick Haughton	IT
Cornie Munby	IT
Rivy Buzek	IT
Anmol Atri	Administration
Andy Beaford	Administration
Sherline Harbord	Administration
Marie Brahms	Administration
Isa Jaques	Legal
Tania Sharma	Sales
Bryna McKenny	Sales
Nicholas Comelini	Sales
Alicia Jones	Purchase
Mahala Burtwhistle	Purchase

39. Display total number of departments at each location

Code:-

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

Output:-

Location	Total_Departments
Mumbai	2
Dallas	2
Bengaluru	1
New Delhi	3

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

Code:-

```
SELECT Dname, COUNT(*) as num_employees  
FROM EMPLOYEE E  
INNER JOIN DEPARTMENT D ON E.Dno = D.Dno  
GROUP BY E.Dno  
HAVING COUNT(*) >= 20;
```

Output:-

```
Empty set (0.01 sec)
```

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

Code:-

```
SELECT e1.Ename AS EmployeeName, e2.Ename AS SupervisorName  
FROM Employee e1  
LEFT JOIN Employee e2  
ON e1.SupervisionENO = e2.Eno  
WHERE e1.SupervisionENO IS NOT NULL  
GROUP BY e1.Ename, e2.Ename, e1.Job_type  
HAVING COUNT(*) > 5;
```

Output:-

Empty set (0.00 sec)

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

Code:-

```
SELECT Job_type, COUNT(*) as num_employees  
FROM EMPLOYEE  
GROUP BY Job_type  
HAVING num_employees = (SELECT MAX(cnt) FROM (SELECT COUNT(*) as  
cnt FROM EMPLOYEE GROUP BY Job_type) AS T)  
OR num_employees = (SELECT MIN(cnt) FROM (SELECT COUNT(*) as cnt  
FROM EMPLOYEE GROUP BY Job_type) AS T);
```

Job_type	num_employees
Manager	8
Managing Director	1
Consultant	1
Technician	1