DBMS ASSIGNMENT : 2

NAME -> RAUNAK GARHWAL

CLASS -> MCA 1st SEM

ROLL NO. -> 30

Q.1 Create Sales table with the following fields (Sales No, Salesname, Branch, Salesamount, DOB).

```
CREATE DATABASE question_1;

CREATE TABLE sales(
    sales_no INT PRIMARY KEY,
    seller_name VARCHAR(40),
    branch VARCHAR(30),
    sales_amount NUMERIC(10,2),
    dob DATE
    );


INSERT INTO sales
VALUES(101,'Ramesh','Electronics',10000,'1980-04-23'),
(102,'Suresh','Beauty',20000,'1973-08-07'),
(103,'Rajesh','Automobile',30000,'1980-12-15'),
(104,'Rohan','Grooming',40000,'1975-02-28'),
(105,'Mahesh','Education',50000,'1995-12-04');
```

Sales Table

sales_no	seller_name	branch	sales_amount	dob
101	Ramesh	Electronics	10000	1980-04-23
102	Suresh	Beauty	20000	1973-08-07
103	Rajesh	Automobile	30000	1980-12-15
104	Rohan	Grooming	40000	1975-02-28
105	Mahesh	Education	50000	1995-12-04

Q.1.1 Calculate total sales amount in each branch?

SELECT branch,SUM(sales_amount) as total_sales FROM sales GROUP BY branch;

branch	total_sales
Automobile	30000
Beauty	20000
Education	50000
Electronics	10000
Grooming	40000

Q.1.2 Calculate average sales amount in each branch?

SELECT branch,AVG(sales_amount) as avg_sales FROM sales GROUP BY branch;

branch	avg_sales
Automobile	30000.0000
Beauty	20000.0000
Education	50000.0000
Electronics	10000.0000
Grooming	40000.0000

Q.1.3 Display all the salesmen, DOB who are born in the month of December as day in character format i.e. 21-Dec-09?

SELECT Seller_name,DATE_FORMAT(DOB,'%d-%M-%y') AS DOB FROM sales WHERE MONTH(dob) = 12;

Seller_name	DOB
Rajesh	15-December-80
Mahesh	04-December-95

Q.1.4 Display the name and DOB of salesman in alphabetical order of the month?

SELECT Seller_name,DATE_FORMAT(dob,'%d-%M-%y') as DOB from sales ORDER BY Date_Format(dob,"%M");

Seller_name	DOB
Ramesh	23-April-80
Suresh	07-August-73
Rajesh	15-December-80
Mahesh	04-December-95
Rohan	28-February-75

Q.2 Employee (EmpNo, EmpName, Job,Basic, DA, HRA,PF, GrossPay, NetPay).

Q.2.1 Calculate DA as 30% of Basic and HRA as 40% of Basic ?
Q.2.2 Insert Five Records and calculate GrossPay and NetPay ?

CREATE DATABASE question_2;

CREATE TABLE Employee(
        Emp_No int(6) primary key,
        Emp_Name varchar(20) NOT NULL,
        Designation varchar(25),
        Emp_Basic Numeric(10,2),
        Emp_DA Numeric(10,2) as (0.3 * Emp_Basic),
        Emp_HRA Numeric(10,2) as (0.4 * Emp_Basic),
        Emp_SA Numeric(10,2) DEFAULT 0,
        Emp_PF Numeric(10,2) as (0.12 * Emp_Basic),
        Emp_Grosspay Numeric(10,2) as (Emp_Basic + Emp_DA + Emp_HRA + Emp_SA),
        Emp_netpay Numeric(10,2) as (Emp_Grosspay - Emp_PF)
);

INSERT INTO Employee (Emp_No,Emp_Name,Designation,Emp_Basic)
VALUES(4019,'Rohit Sharma','Director',10000),
(4039,'Surya Kumar Yadav','Technical Engineer',15000),
(4015,'Hardik Pandya','Technical Engineer',12000),
(4016,'KL Rahul','Technical Engineer',13000),
(4027,'Shubman Gill','Director',16000),
(4006,'Jasprit Bumrah','Director',10000);

Employee Table

Emp_No	Emp_Name	Designation	Emp_Basic	Emp_DA	Emp_HRA	Emp_SA	Emp_PF	Emp_Grosspay	Emp_netpay
4006	Jasprit Bumrah	Director	10000.00	3000.00	4000.00	0.00	1200.00	17000.00	15800.00
4015	Hardik Pandya	Technical Engineer	12000.00	3600.00	4800.00	0.00	1440.00	20400.00	18960.00
4016	KL Rahul	Technical Engineer	13000.00	3900.00	5200.00	0.00	1560.00	22100.00	20540.00
4019	Rohit Sharma	Director	10000.00	3000.00	4000.00	0.00	1200.00	17000.00	15800.00
4027	Shubman Gill	Director	16000.00	4800.00	6400.00	0.00	1920.00	27200.00	25280.00
4039	Surya Kumar Yadav	Technical Engineer	15000.00	4500.00	6000.00	0.00	1800.00	25500.00	23700.00

Q.2.3 Display the employees whose Basic is lowest in each department ?

SELECT emp_no,emp_name,Designation,Emp_Basic FROM employee WHERE Emp_Basic IN (SELECT MIN(Emp_Basic) FROM employee GROUP BY Designation) ORDER BY Emp_Basic ASC;

emp_no	emp_name	Designation	Emp_Basic ▲ 1
4006	Jasprit Bumrah	Director	10000.00
4019	Rohit Sharma	Director	10000.00
4015	Hardik Pandya	Technical Engineer	12000.00

Q.2.4 If NetPay < Rs. 20,000 add Rs. 1200 as special_allowances (SA) ?

UPDATE employee SET Emp_SA=Emp_SA+1200 WHERE Emp_netpay<20000;

✔ 3 rows affected. (Query took 0.0005 seconds.)

Emp_No	Emp_Name	Designation	Emp_Basic	Emp_DA	Emp_HRA	Emp_SA	Emp_PF	Emp_Grosspay	Emp_netpay
4006	Jasprit Bumrah	Director	10000.00	3000.00	4000.00	0.00	1200.00	17000.00	15800.00
4015	Hardik Pandya	Technical Engineer	12000.00	3600.00	4800.00	0.00	1440.00	20400.00	18960.00
4016	KL Rahul	Technical Engineer	13000.00	3900.00	5200.00	0.00	1560.00	22100.00	20540.00
4019	Rohit Sharma	Director	10000.00	3000.00	4000.00	0.00	1200.00	17000.00	15800.00
4027	Shubman Gill	Director	16000.00	4800.00	6400.00	0.00	1920.00	27200.00	25280.00
4039	Surya Kumar Yadav	Technical Engineer	15000.00	4500.00	6000.00	0.00	1800.00	25500.00	23700.00

↓

Emp_No	Emp_Name	Designation	Emp_Basic	Emp_DA	Emp_HRA	Emp_SA	Emp_PF	Emp_Grosspay	Emp_netpay
4006	Jasprit Bumrah	Director	10000.00	3000.00	4000.00	1200.00	1200.00	18200.00	17000.00
4015	Hardik Pandya	Technical Engineer	12000.00	3600.00	4800.00	1200.00	1440.00	21600.00	20160.00
4016	KL Rahul	Technical Engineer	13000.00	3900.00	5200.00	0.00	1560.00	22100.00	20540.00
4019	Rohit Sharma	Director	10000.00	3000.00	4000.00	1200.00	1200.00	18200.00	17000.00
4027	Shubman Gill	Director	16000.00	4800.00	6400.00	0.00	1920.00	27200.00	25280.00
4039	Surya Kumar Yadav	Technical Engineer	15000.00	4500.00	6000.00	0.00	1800.00	25500.00	23700.00

Q.2.5 Display the employees whose GrossPay lies between 10,000 & 20,000 ?

SELECT * FROM employee WHERE Emp_Grosspay BETWEEN 10000 AND 20000;

Emp_No	Emp_Name	Designation	Emp_Basic	Emp_DA	Emp_HRA	Emp_SA	Emp_PF	Emp_Grosspay	Emp_netpay
4006	Jasprit Bumrah	Director	10000.00	3000.00	4000.00	1200.00	1200.00	18200.00	17000.00
4019	Rohit Sharma	Director	10000.00	3000.00	4000.00	1200.00	1200.00	18200.00	17000.00

Q.2.6 Display all the employees who earn maximum salary ?

SELECT * FROM employee WHERE Emp_Grosspay=(SELECT MAX(Emp_Grosspay) FROM employee);

Emp_No	Emp_Name	Designation	Emp_Basic	Emp_DA	Emp_HRA	Emp_SA	Emp_PF	Emp_Grosspay	Emp_netpay
4027	Shubman Gill	Director	16000.00	4800.00	6400.00	0.00	1920.00	27200.00	25280.00

Q.3 Dept (deptno, dname, loc) Emp (empno, ename, job, mgr, hiredate, sal, comm, deptno).

```sql
CREATE DATABASE question_3;


CREATE TABLE department(
    dept_no INT PRIMARY KEY,
    dept_name VARCHAR(30),
    loc VARCHAR(30)
    );


CREATE TABLE employee(
    emp_no INT PRIMARY KEY,
    emp_name VARCHAR(50) NOT NULL,
    job VARCHAR(30),
    mgr INT,
    hire_date DATE,
    salary NUMERIC(10,2),
    dept_no INT,
    FOREIGN KEY (dept_no) REFERENCES department(dept_no)
    );


INSERT INTO department
VALUES(101,'Finance','Delhi'),
(102,'Sales','Mumbai'),
(103,'Audit','Kolkata'),
(104,'Marketing','Chennai'),
(105,'Production','Pune');


INSERT INTO employee
VALUES(111,'Ramesh','Salesman',114,'2021-02-15',20000,102),
(112,'Rohan','Software Engineer',114,'2008-04-01',40000,104),
(113,'Mohan','Worker',114,'2015-05-24',25000,105),
(114,'Himanshu','CEO',null,'1975-03-05',50000,101),
(115,'Vikas','CA',114,'1971-10-11',35000,103);
```

Department Table

dept_no	dept_name	loc
101	Finance	Delhi
102	Sales	Mumbai
103	Audit	Kolkata
104	Marketing	Chennai
105	Production	Pune

Employee Table

emp_no	emp_name	job	mgr	hire_date	salary	dept_no
111	Ramesh	Salesman	114	2021-02-15	20000.00	102
112	Rohan	Software Engineer	114	2008-04-01	40000.00	104
113	Mohan	Worker	114	2015-05-24	25000.00	105
114	Himanshu	CEO	NULL	1975-03-05	50000.00	101
115	Vikas	CA	114	1971-10-11	35000.00	103

Q.3.1 **Update the employee salary by 15%, whose experience is greater than 10 years?**

UPDATE employee SET salary=salary+(salary*0.15) WHERE YEAR(CURRENT_DATE)-YEAR(hire_date) > 10;

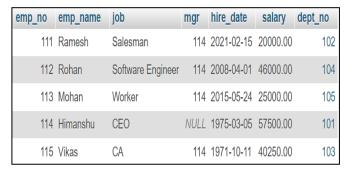✔ 3 rows affected. (Query took 0.0004 seconds.)

emp_no	emp_name	job	mgr	hire_date	salary	dept_no
111	Ramesh	Salesman	114	2021-02-15	20000.00	102
112	Rohan	Software Engineer	114	2008-04-01	40000.00	104
113	Mohan	Worker	114	2015-05-24	25000.00	105
114	Himanshu	CEO	NULL	1975-03-05	50000.00	101
115	Vikas	CA	114	1971-10-11	35000.00	103

→

emp_no	emp_name	job	mgr	hire_date	salary	dept_no
111	Ramesh	Salesman	114	2021-02-15	20000.00	102
112	Rohan	Software Engineer	114	2008-04-01	46000.00	104
113	Mohan	Worker	114	2015-05-24	25000.00	105
114	Himanshu	CEO	NULL	1975-03-05	57500.00	101
115	Vikas	CA	114	1971-10-11	40250.00	103

Q.3.2 Delete the employees,who completed 30 years of service?

DELETE FROM employee WHERE YEAR(CURRENT_DATE)-YEAR(hire_date) > 30;

✔ 2 rows deleted. (Query took 0.0022 seconds.)

emp_no	emp_name	job	mgr	hire_date	salary	dept_no
111	Ramesh	Salesman	114	2021-02-15	20000.00	102
112	Rohan	Software Engineer	114	2008-04-01	46000.00	104
113	Mohan	Worker	114	2015-05-24	25000.00	105
114	Himanshu	CEO	NULL	1975-03-05	57500.00	101
115	Vikas	CA	114	1971-10-11	40250.00	103

➡

emp_no	emp_name	job	mgr	hire_date	salary	dept_no
111	Ramesh	Salesman	114	2021-02-15	20000.00	102
112	Rohan	Software Engineer	114	2008-04-01	46000.00	104
113	Mohan	Worker	114	2015-05-24	25000.00	105

Q.3.3 Display the manager who is having maximum number of employees working under him?

SELECT mgr,emp_name,COUNT(emp_no) AS no_of_employees FROM employee
GROUP BY mgr ORDER BY COUNT(emp_no) DESC LIMIT 1;

mgr	emp_name	no_of_employees
114	Ramesh	4

Q.3.4 Create a view, which contain employee names and their manager?
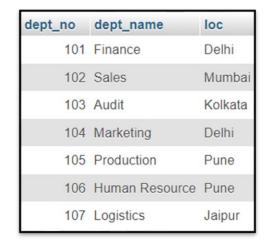
CREATE VIEW Employee_Manager_View AS SELECT e1.emp_name ,e2.emp_no AS
manager_id FROM employee e1, employee e2 WHERE e1.mgr=e2.emp_no;

Employee_Manager_View

emp_name	manager
Ramesh	114
Rohan	114
Mohan	114
Vikas	114

Q.4 Department (deptno, dname, loc) ; Employee (empno, ename, job, mgr, hiredate, sal, deptno).

```
CREATE DATABASE question_4;

CREATE TABLE Department(
    dept_no INT PRIMARY KEY,
    dept_name VARCHAR(30),
    loc VARCHAR(30)
    );


CREATE TABLE Employee(
    emp_no INT PRIMARY KEY,
    emp_name VARCHAR(50) NOT NULL,
    job VARCHAR(30),
    mgr INT,
    hire_date DATE,
    salary NUMERIC(10,2),
     dept_no INT,
    FOREIGN KEY (dept_no) REFERENCES department(dept_no)
    );


INSERT INTO department
VALUES(101,'Finance','Delhi'),
(102,'Sales','Mumbai'),
(103,'Audit','Kolkata'),
(104,'Marketing','Delhi'),
(105,'Production','Pune'),
(106,'Human Resource','Pune'),
(107,'Logistics','Jaipur');


INSERT INTO employee
VALUES(111,'Ramesh','Salesman',114,'2021-02-15',20000,102),
(112,'Rohan','Software Engineer',114,'2008-04-01',40000,104),
(113,'Mohan','Worker',114,'2015-05-24',25000,105),
(114,'Himanshu','CEO',null,'1975-03-05',30000,101),
(115,'Vikas','CA',114,'1971-10-11',35000,103),
(116,'Manoj','CA',113,'2001-09-22',40000,103),
(117,'Gaurav','Software Engineer',113,'1986-12-03',27000,104);
```
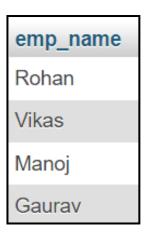
Department Table

dept_no	dept_name	loc
101	Finance	Delhi
102	Sales	Mumbai
103	Audit	Kolkata
104	Marketing	Delhi
105	Production	Pune
106	Human Resource	Pune
107	Logistics	Jaipur

Employee Table

emp_no	emp_name	job	mgr	hire_date	salary	dept_no
111	Ramesh	Salesman	114	2021-02-15	20000.00	102
112	Rohan	Software Engineer	114	2008-04-01	40000.00	104
113	Mohan	Worker	114	2015-05-24	25000.00	105
114	Himanshu	CEO	NULL	1975-03-05	30000.00	101
115	Vikas	CA	114	1971-10-11	35000.00	103
116	Manoj	CA	113	2001-09-22	40000.00	103
117	Gaurav	Software Engineer	113	1986-12-03	27000.00	104

Q.4.1 Determine the names of employee, who earn more than their managers?

SELECT e1.emp_name FROM employee e1 JOIN employee e2 ON e1.mgr=e2.emp_no WHERE e1.salary > e2.salary;

SELECT e1.emp_name FROM employee e1 WHERE e1.salary > (SELECT e2.salary FROM employee e2 WHERE e1.mgr = e2.emp_no);

emp_name
Rohan
Vikas
Manoj
Gaurav

Q.4.2 Determine the employees, whose total salary is like the minimum Salary of any department?

SELECT emp_name, salary FROM employee WHERE salary IN (SELECT MIN(salary) FROM employee GROUP BY dept_no);

emp_name	salary
Ramesh	20000.00
Mohan	25000.00
Himanshu	30000.00
Vikas	35000.00
Gaurav	27000.00

Q.4.3 Determine the department which does not contain any employees?

SELECT dept_no,dept_name FROM department WHERE dept_no NOT IN (SELECT dept_no FROM employee);

dept_no	dept_name
106	Human Resource
107	Logistics

Q.4.4 Determine the names of employees, who take highest salary in their departments?

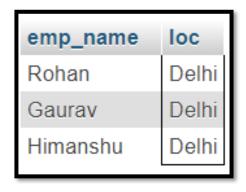CREATE VIEW max_salary_view AS SELECT job,max(salary) AS salary FROM employee GROUP BY dept_no;

SELECT emp_name,job,max_salary_view.salary FROM max_salary_view JOIN employee USING (job) WHERE employee.salary = max_salary_view.salary AND employee.job = max_salary_view.job;

emp_name	job	salary
Ramesh	Salesman	20000.00
Rohan	Software Engineer	40000.00
Mohan	Worker	25000.00
Himanshu	CEO	30000.00
Manoj	CA	40000.00

Q.4.5 Determine the employees, who are located at the same place?

CREATE VIEW temp_data AS SELECT emp_name,loc FROM department JOIN employee USING (dept_no) WHERE loc in (SELECT loc FROM department GROUP by loc HAVING COUNT(loc)>1) ORDER BY loc ;

SELECT emp_name,loc FROM temp_data WHERE loc IN (SELECT loc FROM temp_data GROUP BY loc HAVING COUNT(loc)>1);

emp_name	loc
Rohan	Delhi
Gaurav	Delhi
Himanshu	Delhi

Q.5 Department (deptno, dname, loc) ; Employee (empno, ename, job, mgr, hiredate, sal, deptno).

CREATE DATABASE question_5;

```sql
CREATE TABLE department(
    dept_no INT PRIMARY KEY,
    dept_name VARCHAR(30),
    loc VARCHAR(30)
    );


CREATE TABLE employee(
    emp_no INT PRIMARY KEY,
    emp_name VARCHAR(50) NOT NULL,
    job VARCHAR(30),
    mgr INT,
    hire_date DATE,
    salary NUMERIC(10,2),
     dept_no INT,
    FOREIGN KEY (dept_no) REFERENCES department(dept_no)
    );


INSERT INTO department
VALUES(101,'Finance','Delhi'),
(102,'Sales','Mumbai'),
(103,'Audit','Kolkata'),
(104,'Marketing','Chennai'),
(105,'Production','Pune'),
(106,'Human Resource','Udaipur'),
(107,'Logistics','Jaipur');


INSERT INTO employee
VALUES(111,'Ramesh','Salesman',114,'2021-02-15',20000,102),
(112,'Rohan','Software Engineer',114,'2008-04-01',40000,104),
(113,'Mohan','Worker',114,'2015-05-24',25000,105),
(114,'Himanshu','CEO',null,'1975-03-05',30000,101),
(115,'Vikas','CA',114,'1971-10-11',35000,103),
(116,'Manoj','CA',113,'2001-09-22',40000,103),
(117,'Gaurav','Software Engineer',113,'1986-12-03',27000,104);
```

Department Table

dept_no	dept_name	loc
101	Finance	Delhi
102	Sales	Mumbai
103	Audit	Kolkata
104	Marketing	Chennai
105	Production	Pune
106	Human Resource	Udaipur
107	Logistics	Jaipur

Employee Table

emp_no	emp_name	job	mgr	hire_date	salary	dept_no
111	Ramesh	Salesman	114	2021-02-15	20000.00	102
112	Rohan	Software Engineer	114	2008-04-01	40000.00	104
113	Mohan	Worker	114	2015-05-24	25000.00	105
114	Himanshu	CEO	NULL	1975-03-05	30000.00	101
115	Vikas	CA	114	1971-10-11	35000.00	103
116	Manoj	CA	113	2001-09-22	40000.00	103
117	Gaurav	Software Engineer	113	1986-12-03	27000.00	104

Q.5.1 Display the employee details, departments where the departments are same in both the emp and dept?

SELECT emp_no,emp_name, dept_name FROM department,employee WHERE employee.dept_no=department.dept_no;

SELECT emp_no,emp_name,dept_name FROM department INNER JOIN employee ON department.dept_no = employee.dept_no;

emp_no	emp_name	dept_name
111	Ramesh	Sales
112	Rohan	Marketing
113	Mohan	Production
114	Himanshu	Finance
115	Vikas	Audit
116	Manoj	Audit
117	Gaurav	Marketing

Q.5.2 Display the employee name and Department name by implementing a left outer join?

SELECT emp_name, dept_name FROM department LEFT OUTER JOIN employee ON department.dept_no = employee.dept_no;

emp_name	dept_name
Himanshu	Finance
Ramesh	Sales
Vikas	Audit
Manoj	Audit
Rohan	Marketing
Gaurav	Marketing
Mohan	Production
NULL	Human Resource
NULL	Logistics

Q.5.3 Display the employee name and Department name by implementing a right outer join?

SELECT emp_name, dept_name FROM department RIGHT OUTER JOIN employee ON department.dept_no = employee.dept_no;

emp_name	dept_name
Ramesh	Sales
Rohan	Marketing
Mohan	Production
Himanshu	Finance
Vikas	Audit
Manoj	Audit
Gaurav	Marketing

Q.5.4 Display the details of those who draw the salary greater than the average salary?

SELECT emp_no,emp_name,salary FROM employee WHERE salary > (SELECT AVG(salary) from employee);

emp_no	emp_name	salary
112	Rohan	40000.00
115	Vikas	35000.00
116	Manoj	40000.00

Q.6 EMPLOYEE (Emp_id, first_name, last_name, Email, Phone_No, Hire_Date, Job_Id, Salary, Commission_Pct, Manager_id, Dept_id).

```
CREATE DATABASE question_6;
```

```
CREATE TABLE employee(
    emp_id INT PRIMARY KEY,
    first_name VARCHAR(30),
    last_name VARCHAR(30),
    email VARCHAR(30),
    phone_no BIGINT(12),
    hire_date DATE,
    job_id INT,
    salary INT,
    commission_pct INT,
    manager_id INT,
    dept_id INT
    );
```

```
INSERT INTO employee
VALUES(100,'Steve','Austin','steve@1234',8754135648,'2002-03-
09',221,5000,500,null,60),
(101,'Rohan','Joshi','rohan@1234',7845543648,'2005-01-22',222,4500,700,100,80),
(102,'Naresh','Sharma','naresh@1234',9135687548,'2014-12-
14',222,3700,400,104,70),
(103,'Tony','Stark','tony@1234',6854135648,'2012-09-18',224,4000,400,100,80),
(104,'john','Austin','john@1234',7237515648,'1992-02-03',223,4800,600,100,90);
```

Employee Table

emp_id	first_name	last_name	email	phone_no	hire_date	job_id	salary	commission_pct	manager_id	dept_id
100	Steve	Austin	steve@1234	8754135648	2002-03-09	221	5000	500	NULL	60
101	Rohan	Joshi	rohan@1234	7845543648	2005-01-22	222	4500	700	100	80
102	Naresh	Sharma	naresh@1234	9135687548	2014-12-14	222	3700	400	104	70
103	Tony	Stark	tony@1234	6854135648	2012-09-18	224	4000	400	100	80
104	john	Austin	john@1234	7237515648	1992-02-03	223	4800	600	100	90

Q.6.1 Find out the employee id, names, salaries of all the employees?

SELECT emp_id,first_name,last_name,salary FROM employee;

emp_id	first_name	last_name	salary
100	Steve	Austin	5000
101	Rohan	Joshi	4500
102	Naresh	Sharma	3700
103	Tony	Stark	4000
104	john	Austin	4800

Q.6.2 List out the employees who works under manager 100?

SELECT emp_id,manager_id FROM employee WHERE manager_id = 100;

emp_id	manager_id
101	100
103	100
104	100

Q.6.3 Find the names of the employees who have a salary greater than or equal to 4800?

SELECT emp_id,first_name,last_name,salary FROM employee WHERE salary >= 4800;

emp_id	first_name	last_name	salary
100	Steve	Austin	5000
104	john	Austin	4800

Q.6.4 List out the employees whose last name is 'AUSTIN'?

SELECT emp_id,first_name,last_name FROM employee WHERE last_name = 'Austin';

emp_id	first_name	last_name
100	Steve	Austin
104	john	Austin

Q.6.5 Find the names of the employees who works in departments 60,70 and 80?

SELECT emp_id,first_name,last_name FROM employee WHERE dept_id IN (60,70,80);

emp_id	first_name	last_name
100	Steve	Austin
101	Rohan	Joshi
102	Naresh	Sharma
103	Tony	Stark

Q.6.6 Display the unique Manager_Id?

SELECT DISTINCT manager_id FROM employee;

manager_id
100
104