

**Question 1:**

- A. ***Create above mentioned database and feed at least 15 entries in table employee. Fill all the tables with respect to table employee.***

**Input:**

```
CREATE TABLE employee(  
emp_id number(3) PRIMARY KEY,  
employee_name varchar2(50),  
street varchar2(30),  
city varchar2(30)  
);
```

INSERT ALL

```
INTO employee(emp_id, employee_name, street, city) VALUES(101,  
'John Doe', '123 Main St', 'New York')
```

```
INTO employee(emp_id, employee_name, street, city) VALUES(102,  
'Alice Smith', '456 Oak Ave', 'San Francisco')
```

```
INTO employee(emp_id, employee_name, street, city) VALUES(103,  
'Bob Johnson', '789 Elm St', 'Chicago')
```

```
INTO employee(emp_id, employee_name, street, city) VALUES(104,  
'Emily Davis', '234 Pine St', 'Los Angeles')
```

```
INTO employee(emp_id, employee_name, street, city) VALUES(105,  
'Michael Lee', '567 Maple Ave', 'Boston')
```

```
INTO employee(emp_id, employee_name, street, city) VALUES(106,  
'Sarah Wilson', '890 Cedar St', 'Seattle')
```

```
INTO employee(emp_id, employee_name, street, city) VALUES(107,
```

'David Brown', '111 Oak St', 'San Francisco')

INTO employee(emp\_id, employee\_name, street, city) VALUES(108,  
'Jessica Garcia', '222 Elm St', 'New York')

INTO employee(emp\_id, employee\_name, street, city) VALUES(109,  
'Daniel Miller', '333 Pine St', 'Los Angeles')

INTO employee(emp\_id, employee\_name, street, city) VALUES(110,  
'Olivia Moore', '444 Maple Ave', 'Chicago')

INTO employee(emp\_id, employee\_name, street, city) VALUES(111,  
'William Taylor', '555 Cedar St', 'Boston')

INTO employee(emp\_id, employee\_name, street, city) VALUES(112,  
'Sophia Anderson', '666 Oak St', 'Seattle')

INTO employee(emp\_id, employee\_name, street, city) VALUES(113,  
'James Martinez', '777 Elm St', 'New York')

INTO employee(emp\_id, employee\_name, street, city) VALUES(114,  
'Emma Thomas', '888 Pine St', 'Los Angeles')

INTO employee(emp\_id, employee\_name, street, city) VALUES(115,  
'Liam Harris', '999 Maple Ave', 'Chicago')

SELECT \* FROM dual;

**Select \* from employee**

**Output:**

EMP_ID	EMPLOYEE_NAME	STREET	CITY
101	John Doe	123 Main St	New York
102	Alice Smith	456 Oak Ave	San Francisco
103	Bob Johnson	789 Elm St	Chicago
104	Emily Davis	234 Pine St	Los Angeles
105	Michael Lee	567 Maple Ave	Boston
106	Sarah Wilson	890 Cedar St	Seattle
107	David Brown	111 Oak St	San Francisco
108	Jessica Garcia	222 Elm St	New York
109	Daniel Miller	333 Pine St	Los Angeles
110	Olivia Moore	444 Maple Ave	Chicago
More than 10 rows available. Increase rows selector to view more rows.			

B. ***Find list of employees with their salaries.***

Input:

```
CREATE TABLE works(  
emp_id number(3),  
comp_id number(5),  
salary number(10,2),  
FOREIGN KEY (emp_id) REFERENCES employee(emp_id)  
);
```

```
INSERT ALL
```

```
    INTO works (emp_id, comp_id, salary) VALUES (101, 10001, 60000)  
    INTO works (emp_id, comp_id, salary) VALUES (102, 10002, 55000)  
    INTO works (emp_id, comp_id, salary) VALUES (103, 10001, 62000)  
    INTO works (emp_id, comp_id, salary) VALUES (104, 10003, 58000)  
    INTO works (emp_id, comp_id, salary) VALUES (105, 10002, 60000)  
    INTO works (emp_id, comp_id, salary) VALUES (106, 10003, 59000)  
    INTO works (emp_id, comp_id, salary) VALUES (107, 10001, 56000)  
    INTO works (emp_id, comp_id, salary) VALUES (108, 10002, 57000)  
    INTO works (emp_id, comp_id, salary) VALUES (109, 10001, 61000)  
    INTO works (emp_id, comp_id, salary) VALUES (110, 10003, 54000)  
    INTO works (emp_id, comp_id, salary) VALUES (111, 10002, 58000)  
    INTO works (emp_id, comp_id, salary) VALUES (112, 10003, 57000)  
    INTO works (emp_id, comp_id, salary) VALUES (113, 10001, 59000)  
    INTO works (emp_id, comp_id, salary) VALUES (114, 10002, 60000)  
    INTO works (emp_id, comp_id, salary) VALUES (115, 10001, 58000)  
  
    SELECT * FROM dual;
```

Output:

EMP_ID	EMPLOYEE_NAME	SALARY
101	John Doe	60000
102	Alice Smith	55000
103	Bob Johnson	62000
104	Emily Davis	58000
105	Michael Lee	60000
106	Sarah Wilson	59000
107	David Brown	56000
108	Jessica Garcia	57000
109	Daniel Miller	61000
110	Olivia Moore	54000
More than 10 rows available. Increase rows selector to view more rows.		

C. ***Find name of all employees with their respective managers and name of city where company situated.***

Input:

```
CREATE TABLE manager(  
manager_id number(3) PRIMARY KEY,  
manager_name varchar2(50)  
);
```

INSERT ALL

```
INTO manager (manager_id, manager_name) VALUES (501, 'Bob  
Wilson')
```

```
INTO manager (manager_id, manager_name) VALUES (502, 'John  
Smith')
```

```
INTO manager (manager_id, manager_name) VALUES (503, 'William  
Miller')
```

```
SELECT * FROM dual;
```

```
CREATE TABLE manage(  
emp_id number(3),  
manager_id number(3),  
FOREIGN KEY (emp_id) REFERENCES employee(emp_id),  
FOREIGN KEY (manager_id) REFERENCES manager(manager_id)  
);
```

INSERT ALL

```
INTO manage (emp_id, manager_id) VALUES (101, 501)
```

```
INTO manage (emp_id, manager_id) VALUES (102, 502)
INTO manage (emp_id, manager_id) VALUES (103, 501)
INTO manage (emp_id, manager_id) VALUES (104, 503)
INTO manage (emp_id, manager_id) VALUES (105, 502)
INTO manage (emp_id, manager_id) VALUES (106, 503)
INTO manage (emp_id, manager_id) VALUES (107, 501)
INTO manage (emp_id, manager_id) VALUES (108, 502)
INTO manage (emp_id, manager_id) VALUES (109, 501)
INTO manage (emp_id, manager_id) VALUES (110, 503)
INTO manage (emp_id, manager_id) VALUES (111, 502)
INTO manage (emp_id, manager_id) VALUES (112, 503)
INTO manage (emp_id, manager_id) VALUES (113, 501)
INTO manage (emp_id, manager_id) VALUES (114, 502)
INTO manage (emp_id, manager_id) VALUES (115, 501)
SELECT * FROM dual;
```

```
CREATE TABLE company(
comp_id number(5) PRIMARY KEY,
```

```
company_name varchar2(50),  
city varchar2(50)  
);
```

INSERT ALL

```
INTO company (comp_id, company_name, city) VALUES (10001, 'ABC  
Corporation', 'New York')
```

```
INTO company (comp_id, company_name, city) VALUES (10002, 'XYZ  
Inc.', 'San Francisco')
```

```
INTO company (comp_id, company_name, city) VALUES (10003, 'PQR  
Corp', 'Los Angeles')
```

```
SELECT * FROM dual;
```

```
SELECT e.employee_name AS "Employee Name",
```

```
       m.manager_name AS "Manager Name",
```

```
       c.city AS "Company City"
```

```
FROM employee e
```

```
LEFT JOIN manage ma ON e.emp_id = ma.emp_id
```

```
LEFT JOIN manager m ON ma.manager_id = m.manager_id
```

```
LEFT JOIN works w ON e.emp_id = w.emp_id
```

```
       LEFT JOIN company c ON w.comp_id = c.comp_id;
```

Output:



Employee Name	Manager Name	Company City
Liam Harris	Bob Wilson	New York
James Martinez	Bob Wilson	New York
Daniel Miller	Bob Wilson	New York
David Brown	Bob Wilson	New York
Bob Johnson	Bob Wilson	New York
John Doe	Bob Wilson	New York
Emma Thomas	John Smith	San Francisco
William Taylor	John Smith	San Francisco
Jessica Garcia	John Smith	San Francisco
Michael Lee	John Smith	San Francisco
More than 10 rows available. Increase rows selector to view more rows.		

D. ***Find list of employees who has their office in their native city.***

Input:

```
SELECT e.emp_id, e.employee_name, e.city AS "Native City", c.city AS  
"Office City"
```

```
FROM employee e
```

```
JOIN works w ON e.emp_id = w.emp_id
```

```
JOIN company c ON w.comp_id = c.comp_id
```

```
WHERE e.city = c.city;
```

Output:

EMP_ID	EMPLOYEE_NAME	Native City	Office City
101	John Doe	New York	New York
102	Alice Smith	San Francisco	San Francisco
104	Emily Davis	Los Angeles	Los Angeles
113	James Martinez	New York	New York

E. ***Find the names, street address, and cities of residence for all employees who work for 'First Bank Corporation' and earn more than \$10,000.***

Input:

```
SELECT e.employee_name, e.street, e.city
FROM employee e
JOIN works w ON e.emp_id = w.emp_id
JOIN company c ON w.comp_id = c.comp_id
WHERE c.company_name = 'PQR Corp'
      AND w.salary > 10000;
```

Output:

EMPLOYEE_NAME	STREET	CITY
Emily Davis	234 Pine St	Los Angeles
Sarah Wilson	890 Cedar St	Seattle
Olivia Moore	444 Maple Ave	Chicago
Sophia Anderson	666 Oak St	Seattle

### Question 2:

**A. Find list of companies with their average salaries.**

Input:

```
SELECT c.company_name, AVG(w.salary) AS average_salary
FROM company c
JOIN works w ON c.comp_id = w.comp_id
GROUP BY c.company_name;
```

Output:

COMPANY_NAME	AVERAGE_SALARY
ABC Corporation	59333.3333333333333333333333333333
XYZ Inc.	58000
PQR Corp	57000

***B. Find the names of all employees who earn more than the average salary of all employees of their company.***

Input:

```
SELECT e.employee_name
FROM employee e
JOIN works w ON e.emp_id = w.emp_id
JOIN (
    SELECT comp_id, AVG(salary) AS avg_salary
    FROM works
    GROUP BY comp_id
) avg_salaries ON w.comp_id = avg_salaries.comp_id
WHERE w.salary > avg_salaries.avg_salary;
```

Output:

EMPLOYEE_NAME
John Doe
Bob Johnson
Emily Davis
Michael Lee
Sarah Wilson
Daniel Miller
Emma Thomas

***C. Find the names of all employees in the database who earn more than every employee of 'Small Bank Corporation'.***

Input:

```
SELECT e.employee_name
```

```
FROM employee e
```

```
JOIN works w ON e.emp_id = w.emp_id
```

```
JOIN company c ON w.comp_id = c.comp_id
```

```
WHERE w.salary > (
```

```
    SELECT MAX(w2.salary)
```

```
    FROM works w2
```

```
    JOIN company c2 ON w2.comp_id = c2.comp_id
```

```
    WHERE c2.company_name = 'XYZ Inc.'
```

```
);
```

Output:

EMPLOYEE_NAME
Bob Johnson
Daniel Miller

***D. Find the name of the company that has the smallest payroll.***

input:

```
SELECT company_name
FROM (
  SELECT c.company_name, SUM(w.salary) AS total_salary
  FROM company c
  JOIN works w ON c.comp_id = w.comp_id
  GROUP BY c.company_name
  ORDER BY total_salary ASC
)
WHERE ROWNUM = 1;
```

Output:

COMPANY_NAME
PQR Corp