

Subquery Practice

```
CREATE TABLE Employees (  
    Employee_id INTEGER PRIMARY KEY,  
    First_Name VARCHAR(30),  
    Last_Name VARCHAR(30),  
    Salary REAL,  
    Manager_Id INT,  
    Department_Id INT REFERENCES Departments  
);
```

```
CREATE TABLE Departments(  
    Department_Id INTEGER PRIMARY KEY,  
    Department_Name VARCHAR(30),  
    Manager_Id INT,  
    Location_Id INT REFERENCES Locations  
);
```

```
CREATE TABLE Locations(  
    Location_Id INTEGER PRIMARY KEY,  
    City VARCHAR(30),  
    State VARCHAR(30),  
    Country_Id VARCHAR(2)  
);
```

Problems:

1. Write a query to find the first name, last name, and salary of the employees whose salary is greater than every department's average salary.

```
SELECT E.first_name, E.last_name, E.salary  
FROM employees E  
WHERE E.salary > ALL(  
    SELECT AVG(E1.salary)  
    FROM employees E1  
    GROUP BY E1.department_id);
```

NOTE: You can also create another table that stores the avg_salary of all the departments.

2. Write a query to find the first name, last name, and salary of the employees who earn more than the average salary and work in the IT department.

```
SELECT first_name, last_name, salary
FROM employees E, departments D
WHERE E.department_id = D.department_id
AND department_name = 'IT'
AND salary > (
    SELECT AVG(E1.salary)
    FROM employees E1);
```

3. Write a query to find the first name and last name of the employees who have a manager and work in a US based department.

```
(manager is US based)
SELECT E.first_name, E.last_name
FROM employees E
WHERE E.manager_id IN (
    SELECT E1.employee_id
    FROM employees E1, departments D, locations L
    WHERE E1.department_id = D.department_id
    AND D.location_id = L.location_id
    AND L.country_id = 'US');
```

```
(employee is US based)
SELECT E.first_name, E.last_name
FROM employees E, departments D, locations L
WHERE E.department_id = D.department_id
AND D.location_id = L.location_id
AND E.manager_id IN (
    SELECT E1.employee_id
    FROM employees E1)
AND L.country_id = 'US';
```