Task 6: Subqueries and Nested Queries

---1. Customer Table Creation and Insertion of Data--

```
CREATE TABLE `customer` (

`customer_id` int(11) primary key auto_increment NOT NULL,

`name` varchar(50) NOT NULL,

`email` varchar(100) NOT NULL,

`phone` varchar(20) NOT NULL,

`address` text NOT NULL,

`pincode` varchar(11) NOT NULL,

`salary` int NOT NULL,

`city` varchar(50) NOT NULL

) ;

INSERT INTO customer (customer_id,name,email,phone,address,pincode,salary,city)

VALUES

(NULL,'John Peterson','john.peterson@example.com','+932025550147','1407 Oak Street','20001',35000,'Mumbai'),

(NULL,'Emma Johansson','emma.johansson@example.se','+46 709123456','Vasagatan 12','11120',38000,'Delhi'),

(NULL,'Liam McCarthy','liam.mccarthy@example.ie','+35 3851234567','32 O'Connell St','90901',52000,'Delhi'),

(NULL,'Sofia Rossi','sofia.rossi@example.it','+39 347890122','Via Roma 55, Milan, Italy','20121',30000,'Bangalore');
```

Query #1 Execution time: 0.22ms

customer_id	name	email	phone	address	pincode	salary	city
1	John Peterson	john.peterson@example.com	+932025550147	1407 Oak Street	20001	35000	Mumbai
2	Emma Johansson	emma.johansson@example.se	+46 709123456	Vasagatan 12	11120	38000	Delhi
3	Liam McCarthy	liam.mccarthy@example.ie	+35 3851234567	32 O'Connell St	90901	52000	Delhi
4	Sofia Rossi	sofia.rossi@example.it	+39 347890122	Via Roma 55, Milan, Italy	20121	30000	Bangalore

---2.Order Table Creation and Insertion of Data--

```
CREATE TABLE `orders` (
```

`order_id` int(11) NOT NULL PRIMARY KEY AUTO_INCREMENT,

`customer_id` int(11) DEFAULT NULL,

`order_date` datetime DEFAULT current_timestamp(),

`total_amount` decimal(10,2) DEFAULT NULL

);

INSERT INTO orders

(order_id,customer_id,order_date,total_amount)

VALUES

(101,1,NOW(),35000.45),

(NULL,3,NOW(),23400.00),

(NULL,3,NOW(),73400.98),

(NULL,2,NOW(),11234.56),

(NULL,1,NOW(),98230.00);

Query #2 Execution time: 0.13ms

order_id	customer_id	order_date	total_amount
101	1	2025-11-23 14:10:55	35000.45
102	3	2025-11-23 14:10:55	23400.00
103	3	2025-11-23 14:10:55	73400.98
104	2	2025-11-23 14:10:55	11234.56
105	1	2025-11-23 14:10:55	98230.00

---3. **Subquery in SELECT**

SELECT name, salary, (SELECT AVG (salary) FROM customer) AS avg_salary

FROM customer;

Query #3 Execution time: 0.24ms

name	salary	avg_salary
John Peterson	35000	38750.0000
Emma Johansson	38000	38750.0000
Liam McCarthy	52000	38750.0000
Sofia Rossi	30000	38750.0000

---4. Subquery in WHERE using IN

SELECT name, city

FROM customer

```
WHERE customer_id IN (
   SELECT customer_id
   FROM orders
   WHERE total_amount >= 35000
);
```

Query #4 Execution time: 0.19ms

name	city
John Peterson	Mumbai
Liam McCarthy	Delhi

---4. Subquery in WHERE using EXISTS

```
SELECT c.name, c.city
FROM customer c
WHERE EXISTS (
   SELECT *
   FROM orders o
   WHERE o.customer_id = c.customer_id
     AND o.total_amount >35000
);
```

Query #5 Execution time: 0.15ms

name	city
John Peterson	Mumbai
Liam McCarthy	Delhi

---5. Subquery in FROM

```
SELECT city, avg_salary
FROM (
   SELECT city, AVG(salary) AS avg_salary
   FROM employee
   GROUP BY city
) AS city_salary;
```

Query #6 Execution time: 0.25ms

city	avg_salary
Bangalore	30000.0000
Delhi	45000.0000
Mumbai	35000.0000

---6. Subquery with = for Single Value

```
SELECT name, salary

FROM employee

WHERE salary = (

   SELECT MAX(salary) FROM employee

);
```

Query #7 Execution time: 0.2ms

name	salary
Liam McCarthy	52000