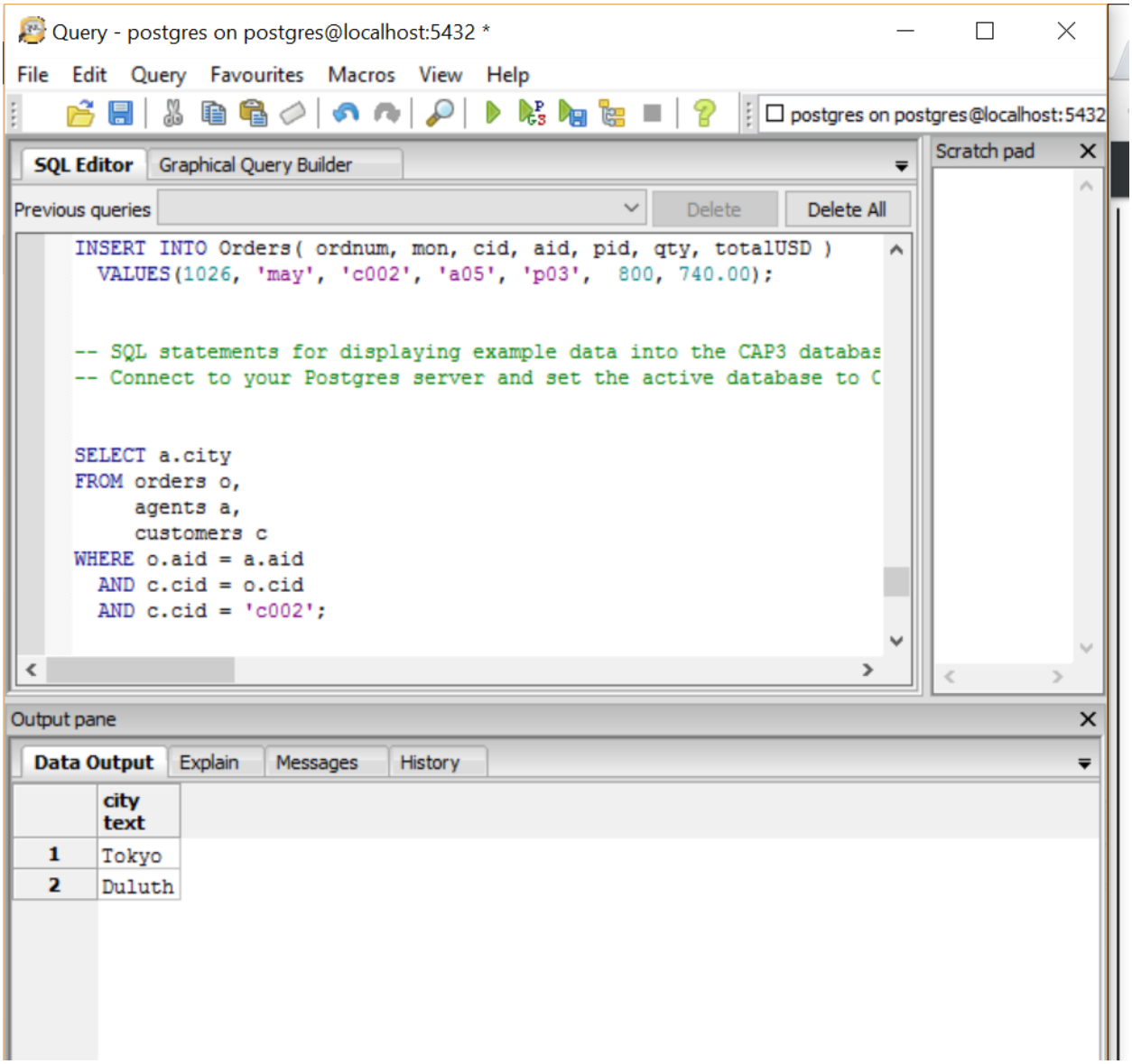
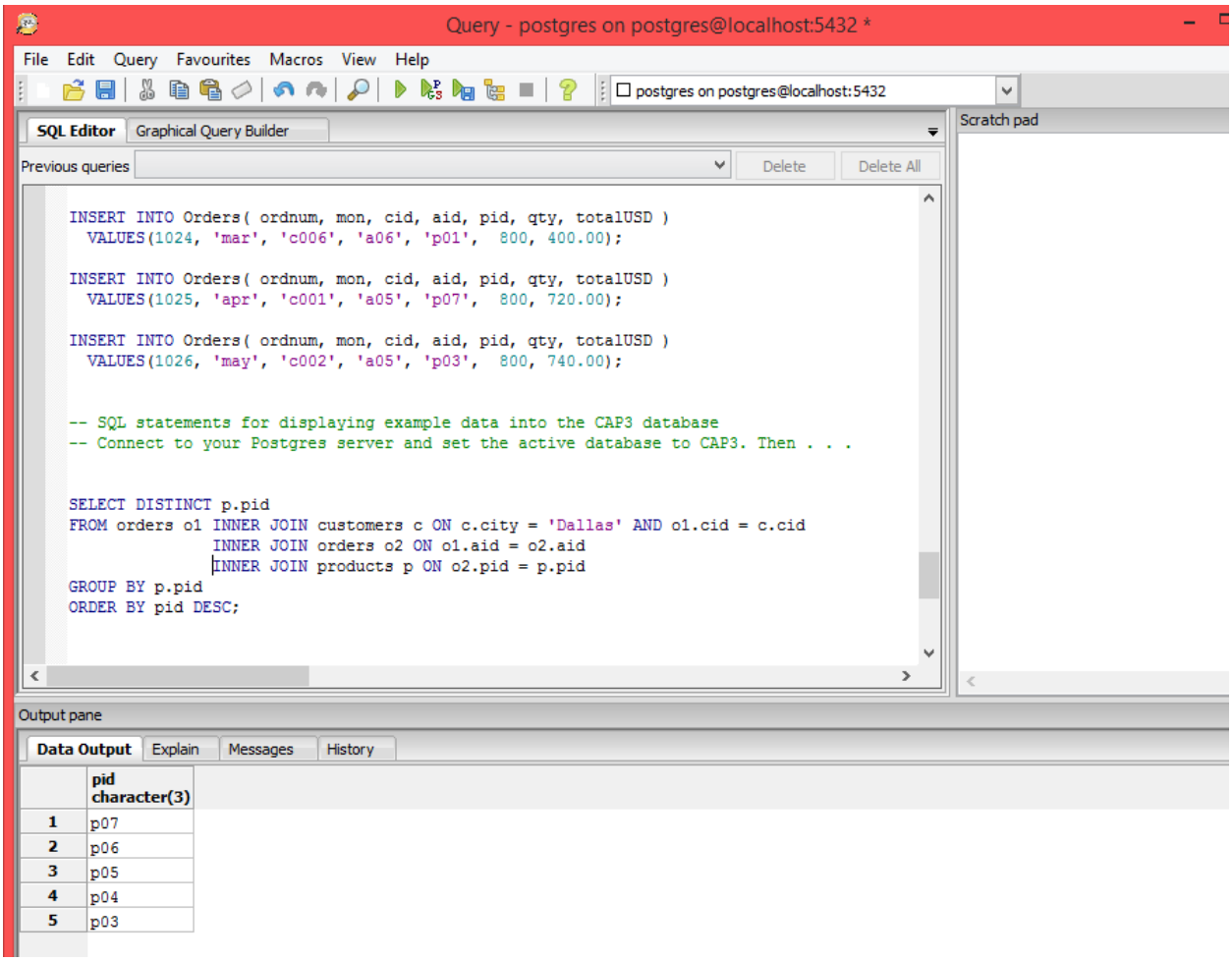
1. Show the cities of agents booking an order for a customer whose id is 'c002'. Use joins; no subqueries.

```
SELECT  a.city
FROM  orders o,
          agents a,
          customers c
WHERE o.aid = a.aid
  AND    c.cid = o.cid
  AND    c.cid = 'c002';
```



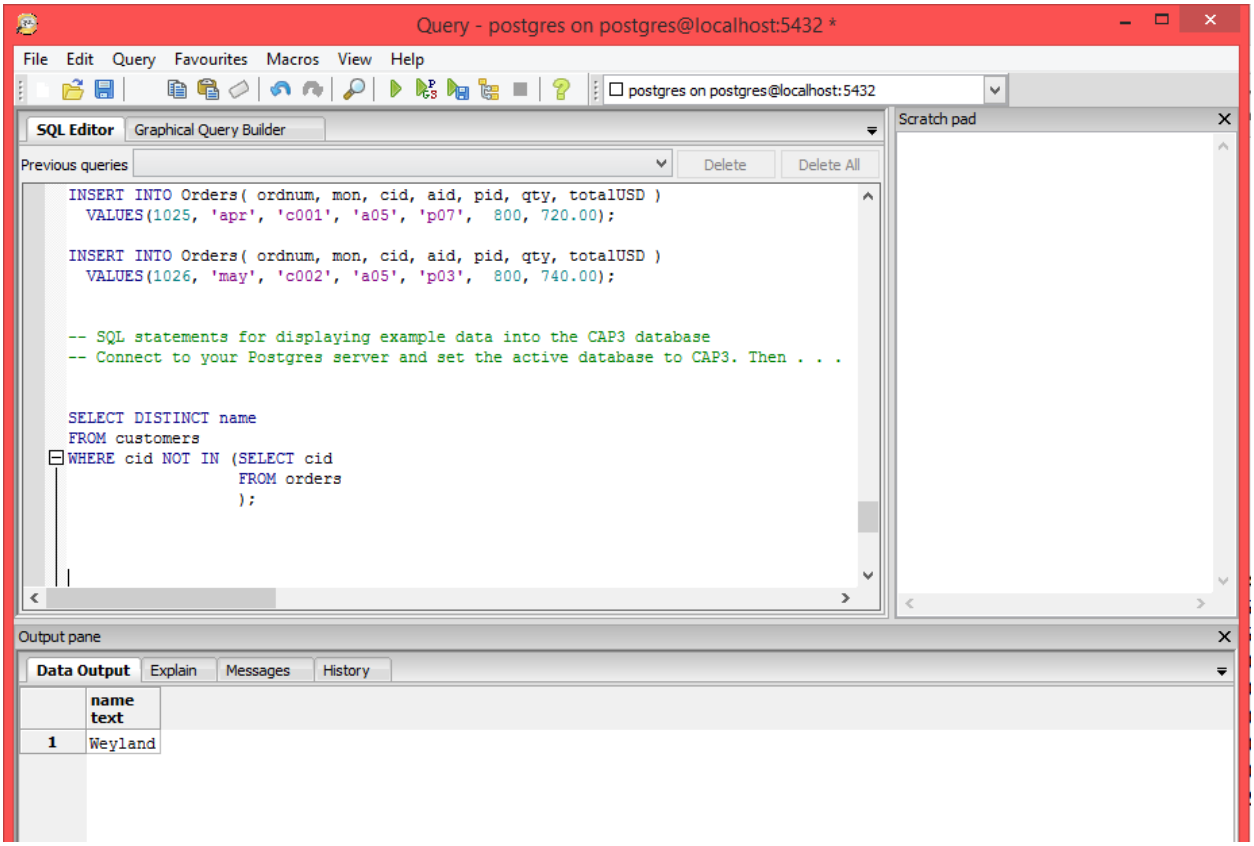
2. Show the ids of products ordered through any agent who makes at least one order for a customer in Dallas, sorted by pid from highest to lowest. Use joins; no subqueries.

```
SELECT DISTINCT p.pid
FROM orders o1 INNER JOIN customers c ON c.city = 'Dallas' AND o1.cid = c.cid
                    INNER JOIN orders o2 ON o1.aid = o2.aid
                    INNER JOIN products p ON o2.pid = p.pid
GROUP BY p.pid
ORDER BY pid DESC;
```



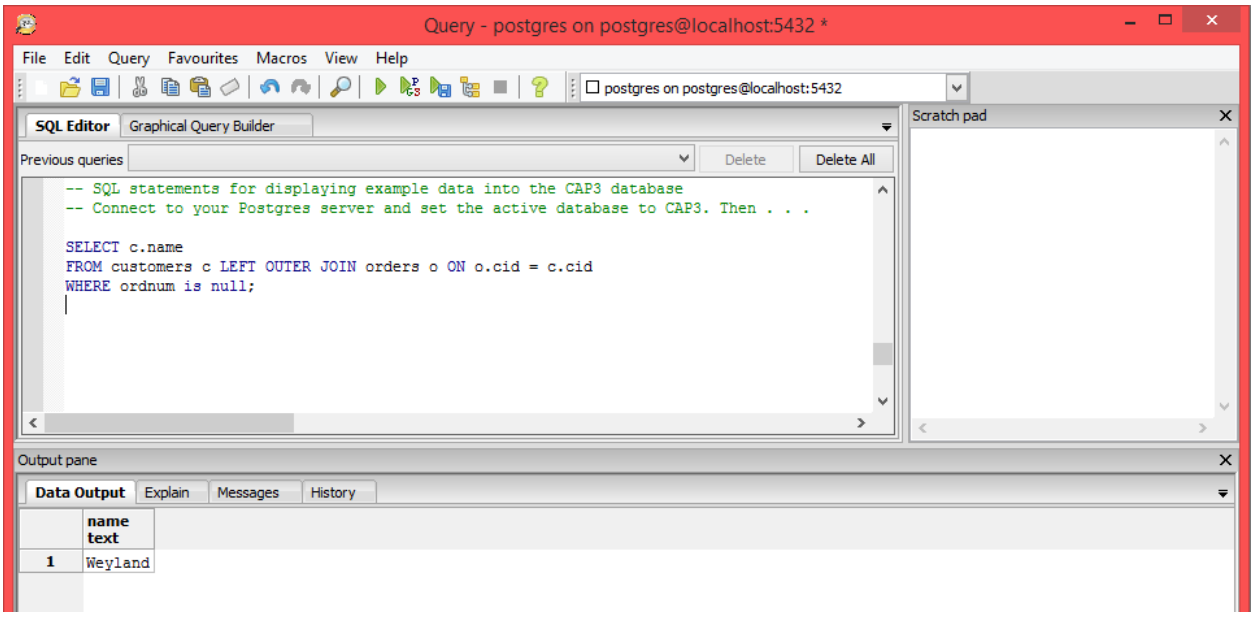
3. Show the names of customers who have never placed an order. Use a subquery.

```
SELECT DISTINCT name
FROM customers
WHERE cid NOT IN (SELECT cid
                  FROM orders
                  );
```



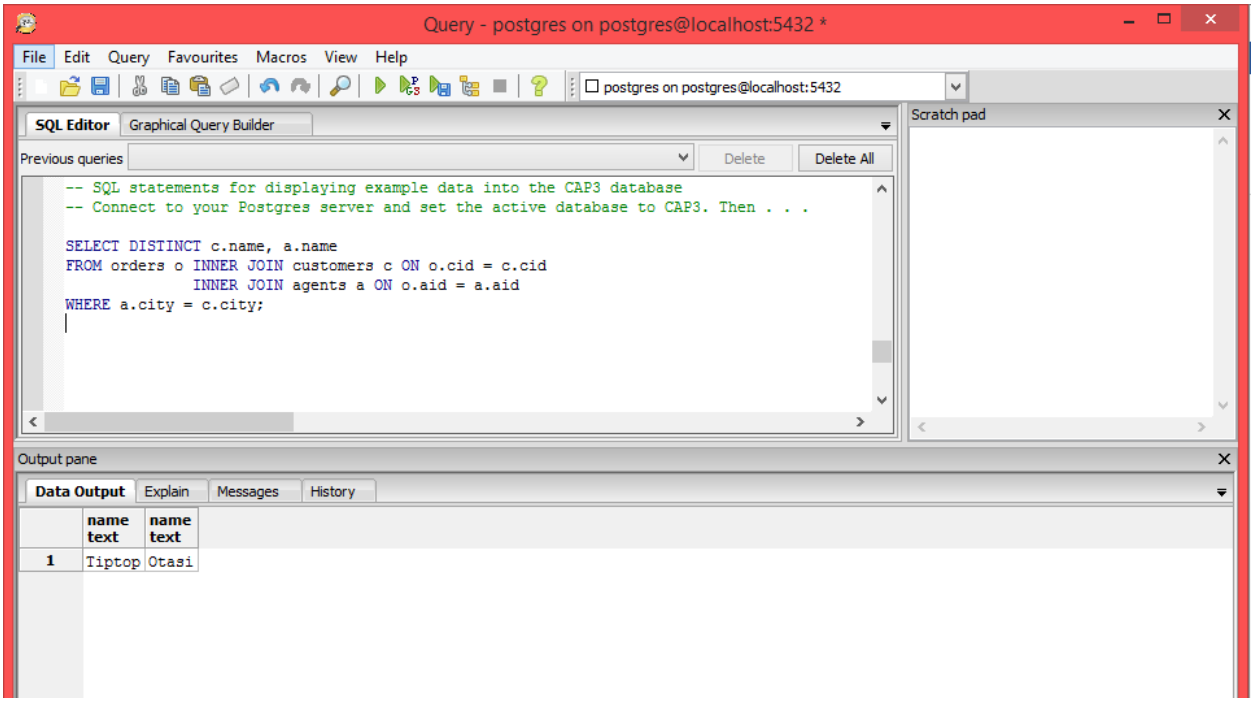
4. Show the names of customers who have never placed an order. Use an outer join.

SELECT c.name
FROM customers c LEFT OUTER JOIN orders o ON o.cid = c.cid
WHERE ordnum is null;



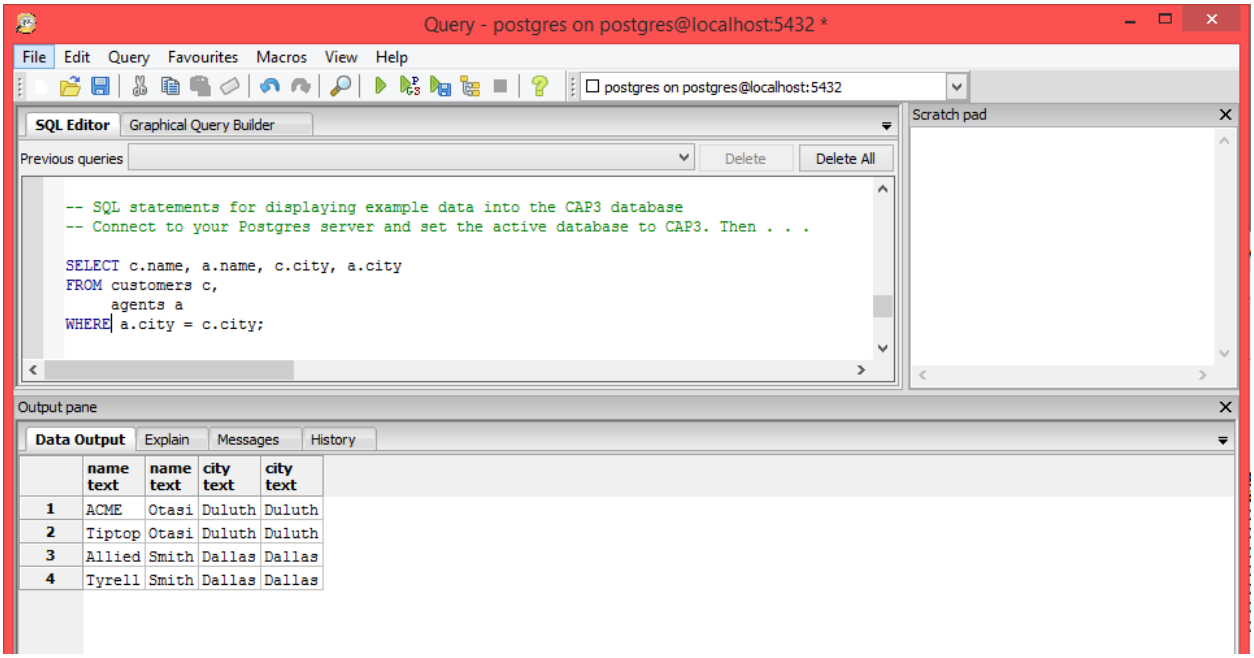
5. Show the names of customers who placed at least one order through an agent in their own city, along with those agent(s') names.

```
SELECT DISTINCT c.name, a.name
FROM orders o INNER JOIN customers c ON o.cid = c.cid
              INNER JOIN agents a ON o.aid = a.aid
WHERE a.city = c.city;
```



6. Show the names of customers and agents living in the same city, along with the name of the shared city, regardless of whether or not the customer has ever placed an order with that agent.

```
SELECT c.name, a.name, c.city, a.city
FROM customers c,
        agents a
WHERE a.city = c.city;
```



7. Show the name and city of customers who live in the city that makes the fewest different kinds of products. (Hint: Use count and group by on the Products table.)

```
SELECT c.name, p1.city
FROM   products p1,
       products p2,
       customers c
WHERE  c.city = p1.city
  AND  p1.city > p2.city
GROUP BY p1.city, c.name
ORDER BY count(p1.city);
```

Or

```
SELECT name, city
FROM customers
WHERE city IN  (SELECT city
                FROM products
                GROUP BY city
                ORDER BY count(city)
                LIMIT 1
                );
```