

Dashboard Properties SQL Statistics

CAP4 on postgres@PostgreSQL 9.6

```

1 SELECT city
2 FROM agents
3 WHERE aid IN (SELECT aid
4               FROM orders
5               WHERE cid = 'c006'
6               );

```

Data Output Explain Messages History

city	text
<input type="checkbox"/>	New York
<input type="checkbox"/>	Tokyo
<input type="checkbox"/>	Dallas

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```

3 WHERE aid IN (SELECT aid
4               FROM orders
5               WHERE cid IN (SELECT cid
6                             FROM Customers
7                             WHERE city = 'Kyoto'
8                             )
9               )
10 ORDER BY pid DESC;

```

Data Output Explain Messages History

pid	character
<input type="checkbox"/>	p07
<input type="checkbox"/>	p05
<input type="checkbox"/>	p04
<input type="checkbox"/>	p03
<input type="checkbox"/>	p01

Object Tools Help

Dashboard Properties SQL Statistics

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```

1 SELECT name, cid
2 FROM customers
3 WHERE cid NOT IN (SELECT cid
4                  FROM orders
5                  WHERE aid IN (SELECT aid
6                                FROM orders
7                                WHERE aid = 'a01'
8                                )
9                  )

```

Data Output Explain Messages History

name	cid
<input type="checkbox"/>	Tyrell c002
<input type="checkbox"/>	Allied c003
<input type="checkbox"/>	ACME c004
<input type="checkbox"/>	Weyland c005

Object ▾ Tools ▾ Help ▾

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```
1
2 SELECT cid
3 FROM orders
4 WHERE pid = 'p07'
5 AND cid IN (SELECT cid
6             FROM orders
7             WHERE pid = 'p01'
8             )
```

Data Output Explain Messages History

cid	character
<input type="checkbox"/>	c006
<input type="checkbox"/>	c001

Object ▾ Tools ▾ Help ▾

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```
1 SELECT pid
2 FROM products
3 WHERE pid NOT IN (SELECT pid
4                  FROM orders
5                  WHERE cid IN (SELECT cid
6                                FROM orders
7                                WHERE aid = 'a08'
8                                )
9                  )
10 ORDER BY pid DESC
11
```

Data Output Explain Messages History

pid	character
<input type="checkbox"/>	p08
<input type="checkbox"/>	p07
<input type="checkbox"/>	p06
<input type="checkbox"/>	p05
<input type="checkbox"/>	p04
<input type="checkbox"/>	p03
<input type="checkbox"/>	p02
<input type="checkbox"/>	p01

Object ▾ Tools ▾ Help ▾

Dashboard Properties SQL Statistics Dependencies

CAP4 on postgres@PostgreSQL 9.6

```
1 SELECT name, discount, city
2 FROM Customers
3 WHERE cid IN (SELECT cid
4               FROM orders
5               WHERE aid IN (SELECT aid
6                             FROM agents
7                             WHERE city = 'Tokyo'
8                             OR city = 'New York'
9                             )
10               )
```

Data Output Explain Messages History

name	discount	city
<input type="checkbox"/>	Tiptop	10 Duluth
<input type="checkbox"/>	Tyrell	12 Dallas
<input type="checkbox"/>	Allied	8 Dallas
<input type="checkbox"/>	ACME	0 Kyoto

The screenshot shows a PostgreSQL SQL client window. The title bar indicates the connection is to 'CAP4 on postgres@PostgreSQL 9.6'. The interface includes tabs for 'Dashboard', 'Properties', 'SQL', 'Statistics', and 'Dependencies'. Below the tabs is a toolbar with icons for file operations and a 'No limit' dropdown. The main area displays an SQL query:

```

1 SELECT *
2 FROM customers
3 WHERE discount IN (SELECT discount
4                     FROM customers
5                     WHERE city = 'London'
6                        OR city = 'Duluth'
7                     )
8

```

Below the query editor, there are tabs for 'Data Output', 'Explain', 'Messages', and 'History'. The 'Data Output' tab is active, showing a table with the following data:

	cid	character	name	city	discount
<input type="checkbox"/>	c001		Tiptop	Duluth	10
<input type="checkbox"/>	c004		ACME	Duluth	8.5

--NUMBER 8--

Check constraints are a limit placed on what the user can enter into a column. It only allows certain values to be entered for the column that the constraint is placed on. They are good for controlling what type of data can be entered, giving the database manager more control over their tables. A good example of a check constraint is for a CWID column, with the check being: check (CWID >= 10000000). This ensures that the CWID entered for a person cannot be any less than 8 numbers, or begin with anything less than 1. Not null is a check constraint placed on all primary keys because each row for a primary key column needs to have a value. A bad example of a check constraint is: Home Phone check (not null). This would not allow a row to be entered into the table if the user did not have a Home phone number, when it's common to no longer use a landline and only use cellphones. Check constraints are advantageous when you want to limit the values that a user can enter, but if they are used incorrectly it becomes annoying for both the users and database manager.