

1) Display the name and city of customers who live in any city that makes the most different kinds of products. (There are two cities that make the most different products. Return the name and city of customers from either one of those.)

```
Select name, city
from Customers
where city in (Select city
               from products
               group by city
               having count(city)= (Select count (city)
                                   from products
                                   group by city
                                   order by count (city) DESC
                                   limit 1))
```

<

Output pane

Data Output				Explain	Messages	History
	name text	city text				
1	Basics	Dallas				
2	Allied	Dallas				

2. Display the names of products where priceUSD is strictly above the average price USD in reverse

Showing rows 0 - 1 (2 total, Query took 0.0018 seconds.)

```
Select name From Products where priceUSD > (Select avg(priceUSD) from products)
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 | Filter rows: Search this table

Sort by key: None

+ Options
name
folder
clip

☐ Show all | Number of rows: 25 | Filter rows: Search this table

Query results operations
Print view Export Display chart Create view

Bookmark this SQL query

Label: ☐ Let every user access this bookmark

Bookmark this SQL query

3) Display the customer name, pid ordered, and the total for all orders, sorted by total from high to low.

```
select c.name, o.pid, sum(o.dollars)
  from customers c inner join orders o on c.cid = o.cid
 group by c.name, o.pid
 order by sum(o.dollars) desc;
```

Output pane

	name text	pid character(3)	sum numeric
1	Basics	p03	1620.00
2	ACME	p01	1360.00
3	Allied	p05	1104.00
4	Tiptop	p07	720.00
5	Tiptop	p06	720.00
6	ACME	p07	600.00
7	Tiptop	p03	540.00
8	Tiptop	p04	540.00

OK. Unix Ln 5, Col 7, Ch 170 11 rows. 17 ms

4) Display all customer names (in alphabetical order) and their total ordered, and nothing more. Use coalesce to avoid showing NULLs.

```
select c.name, o.pid, sum(coalesce(o.dollars))
  from customers c
 inner join orders o
  on c.cid = o.cid
 group by o.pid, c.name
 order by sum(o.dollars) desc;
```

Output pane

	name text	pid character(3)	sum numeric
1	Basics	p03	1620.00
2	ACME	p01	1360.00
3	Allied	p05	1104.00
4	Tiptop	p07	720.00
5	Tiptop	p06	720.00
6	ACME	p07	600.00
7	Tiptop	p04	540.00
8	Tiptop	p03	540.00

OK. Unix Ln 6, Col 36, Ch 184 11 rows. 19 msec

5) Display the names of all customers who bought products from agents based in Tokyo along with the names of the products they ordered, and the names of the agents who sold it to them.

```
Select customers.name , products.name, agents.name  
from customers  
Inner Join orders  
on Customers.cid=orders.cid  
Inner Join products  
on orders.pid=products.pid  
Inner join agents  
on agents.aid= orders.aid  
Where agents.city ='Tokyo';
```

<			
Output pane			
Data Output			
Explain			
Messages			
History			
	name text	name text	name text
1	Basics	razor	Brown
2	Allied	pencil	Brown
3	Tiptop	pen	Brown
4	ACME	case	Brown

6) Write a query to check the accuracy of the dollars column in the Orders table. This means calculating Orders.totalUSD from data in other tables and comparing those values to the values in Orders.totalUSD. Display all rows in Orders where Orders.totalUSD is incorrect, if any.

```

Select *
From (Select o.*, o.qty*p.priceusd*(1-(discount/100)) as truedollars
      from orders o
      inner join products p on o.pid = p.pid
      inner join customers c on o.cid = c.cid) as tmpstable
Where dollars != truedollars

```

Output pane

	ordno	mon	cid	aid	pid	qty	dollars	truedollars
	integer	character(3)	character(4)	character(3)	character(3)	integer	numeric(12,2)	numeric
1	1026	may	c002	a05	p03	800	740.00	704.000000000000000000000000

OK. Unix Ln 6, Col 29, Ch 231 1 row. 19 msec

7) What is the difference between a LEFT OUTER JOIN and a RIGHT OUTER JOIN? Give example queries in SQL to demonstrate. (Feel free to use the CAP2 database to make your points here.)

This is an example of an inner join.

```

select c.name, o.pid, sum(o.dollars)
from customers c inner join orders o on c.cid = o.cid
group by c.name, o.pid
order by sum(o.dollars) desc;

```

Output pane

	name	pid	sum
	text	character(3)	numeric
1	Basics	p03	1620.00
2	ACME	p01	1360.00
3	Allied	p05	1104.00
4	Tiptop	p07	720.00
5	Tiptop	p06	720.00
6	ACME	p07	600.00
7	Tiptop	p03	540.00
8	Tiptop	p04	540.00

OK. Unix Ln 5, Col 1, Ch 172 11 rows. 19 msec

This is an attempt to create an example of an outer join.

The screenshot shows a database IDE with two main panes. The top pane is the 'SQL Editor' with a tab labeled 'Graphical Query Builder'. It contains a SQL query: `select orders
from orders
full outer join customers
on orders.cid = customers.cid
where orders.cid is null;`. The bottom pane is the 'Output pane' with tabs for 'Data Output', 'Explain', 'Messages', and 'History'. The 'Data Output' tab is active, showing a table with two columns: 'orders' and 'orders'. The first row has the value '1' in the first column and is empty in the second.

	orders	orders
1		