

# **Lab: SQL on Alcohol Sales**

**1. How many total products are in the Products table?**

```
SELECT COUNT(DISTINCT item_no)
FROM products;
```

Data Output	
	count
	bigint
1	9977

**2. Who are the top most diverse vendors (i.e. they have the highest number of distinct products)? How many different products do they have?**

```
SELECT COUNT(DISTINCT item_no) AS count_items,
       vendor,
       vendor_name
FROM products
GROUP BY vendor, vendor_name
ORDER BY count_items DESC
LIMIT 1;
```

Data Output				Explain	Messages	Notifications
	count_items	vendor	vendor_name			
	bigint	integer	text			
1	925	65	Jim Beam Brands			

**3. Which products sell the best by total number of unit sales? (Hint: you will need to find a way of doing a cross-join between the sales and product tables.)**

```
SELECT products.item_description,  
       item,  
       SUM(bottle_qty) AS sum_bottle_qty  
FROM sales  
JOIN products ON item_no = item  
GROUP BY item, products.item_description  
ORDER BY sum_bottle_qty DESC  
LIMIT 1;
```

[Data Output](#) [Explain](#) [Messages](#) [Notifications](#)

	<b>item_description</b> text	<b>item</b> integer	<b>sum_bottle_qty</b> bigint
1	Black Velvet	11788	828393

**4. Which products sell the best by total dollar value of sales?**

```
SELECT products.item_description, item, SUM(total) AS  
sum_total  
FROM sales  
JOIN products ON item_no = item  
GROUP BY item, products.item_description  
ORDER BY sum_total DESC  
LIMIT 1;
```

	Data Output	Explain	Messages	Notifications
	<b>item_description</b> text	<b>item</b> integer	<b>sum_total</b> numeric	
1	Black Velvet	11788	12863376.81	

**5. What are the top 10 categories of liquor sold based on the total amount of sales revenue?**

```
SELECT category_name, SUM(total) AS sum_total
FROM sales
GROUP BY category_name
ORDER BY sum_total DESC
LIMIT 10;
```

	<b>Data Output</b>	Explain	Messages	Notifications
	<b>category_name</b> text		<b>sum_total</b> numeric	
1	CANADIAN WHISKIES		48053061.91	
2	80 PROOF VODKA		48045532.51	
3	SPICED RUM		31600618.50	
4	IMPORTED VODKA		23879524.63	
5	TEQUILA		21411263.64	
6	STRAIGHT BOURBON WHISKIES		20924480.19	
7	WHISKEY LIQUEUR		19339201.42	
8	TENNESSEE WHISKIES		17647970.35	
9	PUERTO RICO & VIRGIN ISLANDS RUM		12729072.76	
10	BLENDED WHISKIES		12037250.55	

**6. Which rum products have sales greater than \$10,000?  
How about whiskey or vodka products?**

```
SELECT category_name, SUM(total) AS sum_total
FROM sales
WHERE LOWER(category_name) LIKE '%rum%'
GROUP BY category_name
HAVING SUM(total) > 10000
ORDER BY sum_total DESC;
```

	<b>category_name</b> text	<b>sum_total</b> numeric
1	SPICED RUM	31600618.50
2	PUERTO RICO & VIRGIN ISLANDS RUM	12729072.76
3	FLAVORED RUM	8029533.00
4	BARBADOS RUM	396024.49
5	JAMAICA RUM	371404.44

```

SELECT category_name, SUM(total) AS sum_total
FROM sales
WHERE LOWER(category_name) LIKE '%vodka%'
GROUP BY category_name
HAVING SUM(total) > 10000
ORDER BY sum_total DESC;

```

	<b>category_name</b> text	<b>sum_total</b> numeric
1	80 PROOF VODKA	48045532.51
2	IMPORTED VODKA	23879524.63
3	FLAVORED VODKA	11539259.17
4	IMPORTED VODKA - MISC	9077262.94
5	100 PROOF VODKA	319636.81
6	LOW PROOF VODKA	75863.65
7	OTHER PROOF VODKA	56625.45

```

SELECT category_name, SUM(total) AS sum_total
FROM sales
WHERE LOWER(category_name) LIKE '%whiskey%'
GROUP BY category_name

```

HAVING SUM(total) > 10000

ORDER BY sum\_total DESC;

	<b>category_name</b> text	<b>sum_total</b> numeric
1	WHISKEY LIQUEUR	19339201.42

***7. Which county sold the most amount of vodka during February 2014?***

SELECT county, SUM(total) AS sum\_total

FROM sales

WHERE LOWER(category\_name) LIKE '%vodka%'

GROUP BY county

ORDER BY sum\_total DESC

LIMIT 1;

	<b>county</b> text	<b>sum_total</b> numeric
1	Polk	23272062.61



**8. Which counties were in the top 10 counties for vodka sales in any month in 2014?**

```
WITH CTE_something AS
(
SELECT county, EXTRACT('year'from date) AS year,
EXTRACT('month' from date) AS month,
SUM(total), RANK() OVER (Partition by EXTRACT('month' from
date) ORDER BY SUM(total) DESC)
FROM sales
WHERE (DATE_PART('year',date) = '2014') AND
(UPPER(category_name) LIKE '%VODKA%')
GROUP BY 1,2,3
ORDER BY 3,4 DESC
)
SELECT *
FROM CTE_something
WHERE rank IN (1,2,3,4,5,6,7,8,9,10)
```

	county text	year double precision	month double precision	sum numeric	rank bigint
1	Polk	2014	1	2188692.56	1
2	Linn	2014	1	975547.22	2
3	Scott	2014	1	764583.12	3
4	Johnson	2014	1	687857.74	4
5	Black Hawk	2014	1	611497.16	5
6	Pottawattamie	2014	1	425965.76	6
7	Story	2014	1	358245.36	7
8	Dubuque	2014	1	348632.82	8
9	Woodbury	2014	1	289273.18	9
10	Cerro Gordo	2014	1	222337.54	10
11	Polk	2014	2	2259389.14	1
12	Linn	2014	2	737865.34	2
13	Scott	2014	2	688957.32	3
14	Johnson	2014	2	680700.04	4
15	Black Hawk	2014	2	561431.16	5

**9. Create a report that shows how many times a county appeared in the “top 10 counties for vodka sales in a month” list over the course of 2014.**

```
WITH CTE_something AS
(
SELECT county, EXTRACT('year'from date) AS year, EXTRACT('month'
from date) AS month,
SUM(total), RANK() OVER (Partition by EXTRACT('month' from date)
ORDER BY SUM(total) DESC)
FROM sales
WHERE (DATE_PART('year',date) = '2014') AND (UPPER(category_name)
LIKE '%VODKA%')
GROUP BY 1,2,3
```

```

ORDER BY 3,4 DESC
)
SELECT county, COUNT(county)
FROM CTE_something
WHERE rank IN (1,2,3,4,5,6,7,8,9,10)
GROUP BY county
ORDER BY COUNT(county) DESC;

```

	<b>county</b> text	<b>count</b> bigint
1	Polk	12
2	Scott	12
3	Black Hawk	12
4	Pottawattamie	12
5	Johnson	12
6	Linn	12
7	Dubuque	12
8	Woodbury	11
9	Story	10
10	Cerro Gordo	7
11	Dallas	6
12	Des Moines	1
13	Dickinson	1

**10. What is the trend of sales by month? Break up variables such as bottle\_price or liter\_size into categories (for example: cheap, medium, or expensive).**

```
SELECT EXTRACT (year from date) AS year,
       EXTRACT (month from date) AS month,
       CASE
         WHEN btl_price < '$50' THEN 'cheap'
         WHEN btl_price BETWEEN '$51' AND '$200' THEN 'medium'
         ELSE 'expensive'
       END AS price_rank,
       COUNT(btl_price)
FROM sales
GROUP BY 1,2,3;
```

	<b>month</b> double precision	<b>generic_bottle_size</b> text	<b>count</b> bigint
1	1	Small	63619
2	1	Medium	244958
3	1	Large	68398
4	1	Extra-Large	96581
5	2	Small	63664
6	2	Medium	233495
7	2	Large	66481
8	2	Extra-Large	93471
9	3	Small	43438
10	3	Medium	159672
11	3	Large	50314
12	3	Extra-Large	66516
13	4	Small	48250
14	4	Medium	176880
15	4	Large	52176

**a. How many stores have more than \$2,000,000 in total sales?**

```
SELECT stores.name, store, SUM(total) AS total_sales
FROM sales
JOIN stores USING(store)
GROUP BY 1,2 HAVING SUM(total) > 2000000
ORDER BY total_sales DESC;
```

	<b>name</b> text	<b>store</b> integer	<b>total_sales</b> numeric
1	Hy-vee #3 / Bdi / Des Moines	2633	13920087.22
2	Central City 2	4829	11942399.97
3	Sam's Club 6344 / Windsor Heights	3420	6159480.06
4	Sam's Club 8162 / Cedar Rapids	3385	5734721.57
5	Hy-vee Wine and Spirits / Iowa City	2512	5665143.70
6	Costco Wholesale #788	3814	4907465.88
7	Lot-a-spirits	3952	4289169.59
8	Sam's Club 8238 / Davenport	3354	3308625.56
9	Hy-Vee Wine and Spirits #2	2625	3169984.14
10	Benz Distributing	3773	3129506.57
11	Hy-vee Wine and Spirits / Coralville	2599	2920927.81
12	Sam's Club 6514 / Waterloo	3494	2862977.89
13	Sam's Club 6432 / Sioux City	3447	2652494.66
14	Wilkie Liquors	3692	2534347.62
15	Sam's Club 6568 / Ames	3524	2523731.14