**Kims Sifers’ SQL Samples**

from Udacity Excercises

Contents

[GROUP BY Part I 1](#_Toc503273504)

[GROUP BY Part II 2](#_Toc503273505)

[DISTINCT 3](#_Toc503273506)

[HAVING 4](#_Toc503273507)

# GROUP BY Part I

SELECT a.name account\_name, min(o.occurred\_at) First\_Order\_date

FROM accounts a

JOIN orders o

ON o.account\_id = a.id

GROUP BY a.name

ORDER BY a.name;

SELECT a.name account\_name, sum(o.total\_amt\_usd) Sales\_per\_Account

FROM accounts a

JOIN orders o

ON o.account\_id = a.id

GROUP BY a.name

ORDER BY a.name;

SELECT a.name account\_name, w.channel channel, max(w.occurred\_at) Latest\_Web\_Event

FROM accounts a

JOIN orders o

ON o.account\_id = a.id

JOIN web\_events w

on w.account\_id = a.id

GROUP BY a.name, w.channel

ORDER BY a.name, w.channel;

SELECT w.channel Channel, count(\*) Number\_of\_Times\_Channel\_used

FROM web\_events w

GROUP BY w.channel

SELECT min(w.occurred\_at) Earliest\_Web\_Event, a.primary\_poc Primary\_Contract

FROM web\_events w

JOIN accounts a

ON a.id = w.account\_id

GROUP BY w.occurred\_at, a.primary\_poc

ORDER BY w.occurred\_at

LIMIT 1;

SELECT min(o.total\_amt\_usd) smallest\_order, a.name Account\_Name

FROM orders o

JOIN accounts a

ON a.id = o.account\_id

GROUP BY a.name

ORDER BY smallest\_order;

SELECT r.name Region, count(s.\*) number\_of\_sales\_reps

FROM region r

JOIN sales\_reps s

ON r.id = s.region\_id

GROUP BY r.name

ORDER BY number\_of\_sales\_reps;

# GROUP BY Part II

SELECT a.name account\_name, AVG(o.standard\_qty) Average\_Standard\_Quantity, AVG(o.gloss\_qty) Average\_Gloss\_Quantity, AVG(o.poster\_qty) Average\_Poster\_Quantity

FROM accounts a

JOIN orders o

ON o.account\_id = a.id

GROUP BY a.name

ORDER BY a.name;

SELECT a.name account\_name, AVG(o.standard\_amt\_usd) Average\_Standard\_Amount, AVG(o.gloss\_amt\_usd) Average\_Gloss\_Amount, AVG(o.poster\_amt\_usd) Average\_Poster\_Amount

FROM accounts a

JOIN orders o

ON o.account\_id = a.id

GROUP BY a.name

ORDER BY a.name;

SELECT s.name Sales\_Representative\_Name, COUNT(w.channel) Number\_of\_Channel\_Sales

FROM web\_events w

JOIN accounts a

ON a.id = w.account\_id

JOIN sales\_reps s

ON s.id = a.sales\_rep\_id

GROUP BY s.name

ORDER BY Number\_of\_Channel\_Sales DESC;

SELECT r.name region, w.channel channel, COUNT(w.id) Number\_of\_Times\_Channel\_Used

FROM web\_events w

JOIN accounts a

ON a.id = w.account\_id

JOIN sales\_reps s

ON s.id = a.sales\_rep\_id

JOIN region r

ON r.id = s.region\_id

GROUP BY region,channel

ORDER BY Number\_of\_Times\_Channel\_Used DESC;

# DISTINCT

1. A

SELECT DISTINCT r.name Region, a.name Account\_Name

FROM accounts a

JOIN sales\_reps s

ON s.id = a.sales\_rep\_id

JOIN region r

ON r.id = s.region\_id;

SELECT DISTINCT s.name Sales\_Rep, a.name Account\_Name

FROM accounts a

JOIN sales\_reps s

ON s.id = a.sales\_rep\_id

JOIN region r

ON r.id = s.region\_id

ORDER BY Sales\_Rep;

1. S

# HAVING

1. S

SELECT s.name Sales\_Rep, COUNT(a.\*) Number\_of\_Accounts

FROM accounts a

JOIN sales\_reps s

ON s.id = a.sales\_rep\_id

GROUP BY Sales\_Rep

HAVING COUNT(a.\*) > 5

ORDER BY Sales\_Rep;

SELECT a.name Account , COUNT(o.\*) Number\_of\_Orders

FROM accounts a

JOIN orders o

ON a.id = o.account\_id

GROUP BY Account

HAVING COUNT(o.\*) > 20

ORDER BY Account;

SELECT a.name Account , COUNT(o.\*) Number\_of\_Orders

FROM accounts a

JOIN orders o

ON a.id = o.account\_id

GROUP BY Account

HAVING COUNT(o.\*) > 20

ORDER BY Number\_of\_Orders DESC

LIMIT 1;

SELECT a.name Account , SUM(o.total\_amt\_usd) Spent

FROM accounts a

JOIN orders o

ON a.id = o.account\_id

GROUP BY Account

HAVING SUM(o.total\_amt\_usd) > 30000

ORDER BY Account;

SELECT a.name Account , SUM(o.total\_amt\_usd) Spent

FROM accounts a

JOIN orders o

ON a.id = o.account\_id

GROUP BY Account

HAVING SUM(o.total\_amt\_usd) < 1000

ORDER BY Account;

SELECT a.name Account , SUM(o.total\_amt\_usd) Spent

FROM accounts a

JOIN orders o

ON a.id = o.account\_id

GROUP BY Account

ORDER BY Spent DESC

LIMIT 1;

SELECT a.name Account , SUM(o.total\_amt\_usd) Spent

FROM accounts a

JOIN orders o

ON a.id = o.account\_id

GROUP BY Account

ORDER BY Spent

LIMIT 1;

SELECT COUNT(w.channel) Times\_Channel\_Used, w.channel, a.name Account

FROM accounts a

JOIN web\_events w

ON a.id = w.account\_id

WHERE w.channel = 'facebook'

GROUP BY Account, w.channel

HAVING COUNT(w.channel) > 6

ORDER BY Times\_Channel\_Used;

1. A

SELECT COUNT(w.channel) Times\_Channel\_Used, w.channel, a.name Account

FROM accounts a

JOIN web\_events w

ON a.id = w.account\_id

WHERE w.channel = 'facebook'

GROUP BY Account, w.channel

HAVING COUNT(w.channel) > 6

ORDER BY Times\_Channel\_Used DESC

LIMIT 1;

1. A

SELECT COUNT(w.channel) Times\_Channel\_Used, w.channel Channel

FROM accounts a

JOIN web\_events w

ON a.id = w.account\_id

GROUP BY w.channel

ORDER BY Times\_Channel\_Used DESC

LIMIT 1;

## DATES

SELECT DATE\_PART('year',o.occurred\_at) AS Year, SUM(o.total\_amt\_usd) AS Sales

FROM orders o

GROUP BY 1

ORDER BY 2 DESC;

SELECT DATE\_TRUNC('month',o.occurred\_at) AS Year, SUM(o.total\_amt\_usd) AS Sales

FROM orders o

GROUP BY 1

ORDER BY 2 DESC;

SELECT DATE\_TRUNC('Year',o.occurred\_at) AS Year, COUNT(o.\*) AS Number\_of\_Orders

FROM orders o

GROUP BY 1

ORDER BY 2 DESC;

1. A

SELECT DATE\_TRUNC('month',o.occurred\_at) AS Year, COUNT(o.\*) AS Number\_of\_Orders

FROM orders o

GROUP BY 1

ORDER BY 2 DESC;

1. A

SELECT a.name AS Account ,DATE\_TRUNC('month',o.occurred\_at) AS Year\_Month, sum(o.gloss\_amt\_usd) AS Gloss\_Amount\_Sales

FROM orders o

JOIN accounts a

ON o.account\_id = a.id

WHERE a.name = 'Walmart'

GROUP BY 1, 2

ORDER BY 3 DESC

LIMIT 1;

# CASES

1. A

SELECT a.name AS Account , SUM(o.total\_amt\_usd) AS Spent,

CASE WHEN SUM(o.total\_amt\_usd) > 200000 THEN '> 200 000'

WHEN SUM(o.total\_amt\_usd) < 200000 AND SUM(o.total\_amt\_usd) > 100000 THEN '> 100 000 and < 200 000'

WHEN SUM(o.total\_amt\_usd) < 100000 THEN '< 100 000'

END AS Spend\_Group

FROM accounts a

JOIN orders o

ON a.id = o.account\_id

GROUP BY Account

ORDER BY Spent DESC;

SELECT a.name AS Account , SUM(o.total\_amt\_usd) AS Spent,

CASE WHEN SUM(o.total\_amt\_usd) > 200000 THEN '> 200 000'

WHEN SUM(o.total\_amt\_usd) < 200000 AND SUM(o.total\_amt\_usd) > 100000 THEN '> 100 000 and < 200 000'

WHEN SUM(o.total\_amt\_usd) < 100000 THEN '< 100 000'

END AS Spend\_Group

FROM accounts a

JOIN orders o

ON a.id = o.account\_id

WHERE DATE\_PART('year',o.occurred\_at) > 2015

GROUP BY Account

ORDER BY Spent DESC;

SELECT s.name AS Sales\_Rep , COUNT(o.\*) AS Number\_of\_Orders,

CASE WHEN COUNT(o.\*) >= 200 THEN 'TOP'

WHEN COUNT(o.\*) < 200 THEN 'NOT'

END AS TOP

FROM accounts a

JOIN orders o

ON a.id = o.account\_id

JOIN sales\_reps s

ON s.id = a.sales\_rep\_id

GROUP BY 1

ORDER BY 2 DESC;

1. 4

# Sub-queries

SELECT channel,day,AVG(events\_per\_day) AS averages\_events\_per\_day

FROM

(SELECT w.channel AS channel, DATE\_TRUNC('day',w.occurred\_at) AS day, COUNT(w.\*) AS events\_per\_day

FROM web\_events w

GROUP BY 1,2) AS sub

GROUP BY 1,2

ORDER BY 2,1

1. 2

SELECT AVG(o.standard\_qty) AS avg\_standard\_qty, AVG(o.gloss\_qty) AS avg\_gloss\_qty, AVG(o.poster\_qty) as avg\_poster\_qty

FROM ORDERS O

WHERE DATE\_TRUNC('month',o.occurred\_at) =

(SELECT MIN(DATE\_TRUNC('month',o.occurred\_at))

FROM orders o);

1. A

SELECT AVG(bigger\_spenders)

FROM

(SELECT o1.account\_id, SUM(o1.total\_amt\_usd) bigger\_spenders

FROM orders o1

GROUP BY 1

HAVING SUM(o1.total\_amt\_usd) >

(SELECT AVG(total\_sales) AS average\_sales

FROM

(SELECT o.account\_id, SUM(o.total\_amt\_usd) AS total\_sales

FROM orders o

GROUP BY 1)Q1)) Q2;

SELECT o1.account\_id, SUM(o1.total\_amt\_usd)

FROM orders o1

GROUP BY 1

HAVING SUM(o1.total\_amt\_usd) >

(SELECT AVG(total\_sales) AS average\_sales

FROM

(SELECT o.account\_id, SUM(o.total\_amt\_usd) AS total\_sales

FROM orders o

1. A

SELECT s.name AS Sales\_Rep , COUNT(o.\*) AS Number\_of\_Orders, SUM(o.total\_amt\_usd) AS Total\_Sales,

CASE

WHEN COUNT(o.\*) >= 200 and SUM(o.total\_amt\_usd) >= 750000 THEN 'TOP'

WHEN COUNT(o.\*) > 150 AND COUNT(o.\*) < 200 AND SUM(o.total\_amt\_usd) > 500000 AND SUM(o.total\_amt\_usd) < 750000 THEN 'MIDDLE'

ELSE 'NOT'

END AS TOP

FROM accounts a

JOIN orders o

ON a.id = o.account\_id

JOIN sales\_reps s

ON s.id = a.sales\_rep\_id

GROUP BY 1

ORDER BY 2 DESC;

1. A

Select sum(ten\_largest)/10 AS ten\_largest\_average\_sales

FROM

(SELECT a.id AS account\_id, SUM(o.total\_amt\_usd) AS ten\_largest

FROM accounts a

JOIN orders o

ON a.id = o.account\_id

GROUP BY 1

ORDER BY 2 DESC

LIMIT 10) AS Q1

1. A
2. A

# WITH

1.

WITH region\_sales AS (

SELECT s.name AS sales\_rep, r.name AS region, sum(o.total\_amt\_usd) AS sales

FROM region r

JOIN sales\_reps s

ON r.id = s.region\_id

JOIN accounts a

ON s.id = a.sales\_rep\_id

JOIN orders o

ON a.id = o.account\_id

GROUP BY 1,2),

max\_sales AS (SELECT region, max(sales) as max\_sales

FROM region\_sales

GROUP BY 1)

SELECT rs.sales\_rep, rs.region, ms.max\_sales

FROM region\_sales rs

JOIN max\_sales ms

ON rs.sales = ms.max\_sales

ORDER BY ms.max\_sales DESC;

2.

WITH region\_sales AS (

SELECT r.name AS region, sum(o.total\_amt\_usd) AS sales, sum(o.total) AS total\_orders\_placed

FROM region r

JOIN sales\_reps s

ON r.id = s.region\_id

JOIN accounts a

ON s.id = a.sales\_rep\_id

JOIN orders o

ON a.id = o.account\_id

GROUP BY 1),

max\_sales AS (SELECT region, max(sales) as max\_sales

FROM region\_sales

GROUP BY 1

ORDER BY 2 desc

LIMIT 1)

SELECT \*

FROM region\_sales rs

JOIN max\_sales ms

ON ms.region = rs.region;

3.

WITH total\_purchases AS (

SELECT a.name AS account, sum(o.total) AS total,

sum(o.standard\_qty) AS standard\_qty

FROM region r

JOIN sales\_reps s

ON r.id = s.region\_id

JOIN accounts a

ON s.id = a.sales\_rep\_id

JOIN orders o

ON a.id = o.account\_id

GROUP BY 1),

max\_qty AS (SELECT account,standard\_qty,total

FROM total\_purchases

ORDER BY 2 DESC

LIMIT 1),

big\_buyers AS (SELECT \*

FROM total\_purchases tp

WHERE tp.total >

(SELECT total FROM max\_qty)

ORDER BY 2 DESC)

SELECT count(\*)

FROM big\_buyers;

4.

WITH total\_purchases AS (

SELECT a.name AS account, a.id AS account\_ID, sum(o.total\_amt\_usd) AS total\_usd

FROM region r

JOIN sales\_reps s

ON r.id = s.region\_id

JOIN accounts a

ON s.id = a.sales\_rep\_id

JOIN orders o

ON a.id = o.account\_id

GROUP BY 1,2),

max\_purchases AS (SELECT account,account\_id,total\_usd

FROM total\_purchases

ORDER BY 3 DESC

LIMIT 1),

act\_events AS (SELECT \*

FROM web\_events w, max\_purchases m

WHERE w.account\_id = m.account\_id)

SELECT account, ae.channel, count(\*)

FROM act\_events ae

GROUP BY 1,2

ORDER BY 3 DESC;

5.

WITH total\_purchases AS (

SELECT a.name AS account, sum(o.total\_amt\_usd) AS total\_usd

FROM region r

JOIN sales\_reps s

ON r.id = s.region\_id

JOIN accounts a

ON s.id = a.sales\_rep\_id

JOIN orders o

ON a.id = o.account\_id

GROUP BY 1),

max\_purchases AS (SELECT account, total\_usd

FROM total\_purchases

ORDER BY 2 DESC

LIMIT 10)

SELECT AVG(total\_usd)

FROM max\_purchases

6.

WITH total\_purchases AS (

SELECT a.name AS account, sum(o.total\_amt\_usd) AS total\_usd

FROM region r

JOIN sales\_reps s

ON r.id = s.region\_id

JOIN accounts a

ON s.id = a.sales\_rep\_id

JOIN orders o

ON a.id = o.account\_id

GROUP BY 1),

avg\_spend AS (SELECT AVG(total\_usd) mean\_spend

FROM total\_purchases),

more\_avg AS (SELECT account,total\_usd

FROM total\_purchases tp, avg\_spend avs

WHERE tp.total\_usd > avs.mean\_spend)

SELECT AVG(ma.total\_usd)

FROM more\_avg ma;

7. WITH first\_letter AS (SELECT left(a.name,1) AS first

FROM accounts a),

letter\_type AS (SELECT first,

CASE WHEN first IN ('a','e','i','o','u','A','E','I','O','U') THEN 'vowel'

ELSE 'consonant'

END AS first\_type

FROM first\_letter

ORDER BY 2 DESC),

vowel AS (SELECT first\_type, count(\*)

FROM letter\_type l

WHERE first\_type = 'vowel'

GROUP BY 1),

consonant AS (SELECT first\_type, count(\*)

FROM letter\_type l

WHERE first\_type = 'consonant'

GROUP BY 1)

SELECT vowel.first\_type vowel\_type, vowel.count vowel\_count, consonant.first\_type consonant\_type,consonant.count cosonant\_count, vowel.count/consonant.count AS vowel\_proportion

FROM consonant,vowel;

# Subquery Mania

SELECT t3.region, t3.sales\_rep, t3.sales

FROM (SELECT region, MAX(sales) AS sales

FROM (SELECT r.name AS region, s.name AS sales\_rep,SUM(o.total\_amt\_usd) AS sales

FROM accounts a

JOIN orders o

ON a.id = o.account\_id

JOIN sales\_reps s

ON s.id = a.sales\_rep\_id

JOIN region r

ON r.id = s.region\_id

GROUP BY 1,2) AS t1

GROUP BY 1) AS t2

JOIN

(SELECT r.name AS region, s.name AS sales\_rep,SUM(o.total\_amt\_usd) AS sales

FROM accounts a

JOIN orders o

ON a.id = o.account\_id

JOIN sales\_reps s

ON s.id = a.sales\_rep\_id

JOIN region r

ON r.id = s.region\_id

GROUP BY 1,2) AS t3

ON t3.region = t2.region and t3.sales = t2.sales;

1. 4

SELECT t3.region, t3.sales, t3.total\_orders

FROM (SELECT region, MAX(sales) AS sales

FROM (SELECT r.name AS region, SUM(o.total\_amt\_usd) AS sales

FROM accounts a

JOIN orders o

ON a.id = o.account\_id

JOIN sales\_reps s

ON s.id = a.sales\_rep\_id

JOIN region r

ON r.id = s.region\_id

GROUP BY 1) AS t1

GROUP BY 1) AS t2

JOIN

(SELECT r.name AS region, SUM(o.total\_amt\_usd) AS sales, SUM(o.total) as total\_orders

FROM accounts a

JOIN orders o

ON a.id = o.account\_id

JOIN sales\_reps s

ON s.id = a.sales\_rep\_id

JOIN region r

ON r.id = s.region\_id

GROUP BY 1) AS t3

ON t3.region = t2.region and t3.sales = t2.sales

ORDER BY 2 DESC

LIMIT 1;

SELECT a.name as account, SUM(o.total) as total\_quantity, SUM(o.standard\_qty) as standard\_quantity

FROM accounts a

JOIN orders o

ON a.id = o.account\_id

GROUP BY 1

HAVING sum(o.total) >

(SELECT q1.total\_quantity

FROM

(SELECT a.name AS account, SUM(o.total) AS total\_quantity, SUM(o.standard\_qty) AS largest\_standard\_quantity

FROM accounts a

JOIN orders o

ON a.id = o.account\_id

GROUP BY 1

ORDER BY 3 DESC

LIMIT 1) as q1);

SELECT a.name AS account, w.channel AS channel, COUNT(w.channel)

FROM web\_events w

JOIN accounts a

ON a.id = w.account\_id

WHERE w.account\_id =

(SELECT account\_id

FROM

(SELECT a.id AS account\_id, SUM(o.total\_amt\_usd) AS largest\_sales

FROM accounts a

JOIN orders o

ON a.id = o.account\_id

GROUP BY 1

ORDER BY 2 DESC

LIMIT 1) AS Q1)

GROUP BY 1,2

ORDER by 3 DESC;

1. A

Select sum(ten\_largest)/10 AS ten\_largest\_average\_sales

FROM

(SELECT a.id AS account\_id, SUM(o.total\_amt\_usd) AS ten\_largest

FROM accounts a

JOIN orders o

ON a.id = o.account\_id

GROUP BY 1

ORDER BY 2 DESC

LIMIT 10) AS Q1

1. A

SELECT AVG(bigger\_spenders)

FROM

(SELECT o1.account\_id, SUM(o1.total\_amt\_usd) bigger\_spenders

FROM orders o1

GROUP BY 1

HAVING SUM(o1.total\_amt\_usd) >

(SELECT AVG(total\_sales) AS average\_sales

FROM

(SELECT o.account\_id, SUM(o.total\_amt\_usd) AS total\_sales

FROM orders o

GROUP BY 1)Q1)) Q2;