

10 The Sales Rollup

In this exercise we are going to write a ton of queries about an interesting sales dataset.

The Data

Table D.15: *Sales* Table, 10,250 Rows

SID	CID	amount	TID	sales_dt
1	4	13.55	1	1/11/2011
2	12	18.99	2	12/22/2012
2	12	22.01	3	1/12/2013

Table D.16: *Expenses* Table, 425 Rows

SID	CID	exp_dt	amount	e_type
12	18	5/4/2012	112.24	Dinner
2	44	10/10/2010	112.24	Sport

Table D.17: *Transactions* Table, 25,254 Rows

TID	IID	num
1	12	1
1	18	1
2	45	1
3	18	1

Table D.18: *Client* Table, 152 Rows

CID	Name	Address	City	st	Zip
1	John Smith	12 Blue Bell street	Hayward	CA	94552
2	Julia Xue	14 Howard Street	Danville	VA	24543

Table D.19: *SalesPerson* Table, 22 Rows

SID	Name	Address	City	st	Zip	StartDt	EndDt
1	Rachel Adams	27796 Hanover Hill	Hanover	NY	14081	12-12-2011	1-3-2014
2	Julia Xue	60 Darwin Court	Mobile	AL	36602	01-11-2012	7-7-2013

Table D.20: *Items* Table, 440 Rows

IID	ItemName	Cost
1	10 lbs. Concrete	12.95
2	20 lbs. Concrete	19.95
3	30 lbs. Concrete	27.95

Questions

Main Questions

1. How many sales people are there from CA?

Table D.21: *Regions* Table, 50 Rows

ST	Region
CA	West
PA	East
AL	South
VT	North

2. In how many different states does this company have clients?
3. What is the average, min and max cost of an item which is for sale?
4. What is the average, min and max cost of items which have concrete in their name?
5. What is the average, min and max cost of items which have concrete in their name vs. those which do not?
6. Write a query which returns the total sales and number of sales per month.
7. How many sales did each sales person have?
8. How many states are in each region?
9. How many transactions contained item 12?
10. What was the average number of items per transaction? (Think about what to do with the number of items column)
11. What are the top-5 items sold in units-sold?

A bit harder

1. The total dollars sold and number of items, per salesperson.
2. How many currently employed sales people?
3. Write a query which returns the total number of items that each salesperson sold.
4. What was the average amount expensed per-client and per-salesperson? (Need to do two queries?)
5. How many sales people are in each region?
6. How many sales are from each region? (How would you measure this?)
7. For each client, compute the Revenue - expenses.
8. For each client, compute the profit (revenue - expenses - costs).
9. For each client region, compute the total revenue.
10. For each salesperson region, compute the total revenue.
11. How many clients are in each region?
12. What is our profit per region? (How would you measure this?)
13. **How would you calculate profit per transaction?**
14. How many different sales people sold each item?
15. How many distinct items has each sales person sold?

16. For each region (based on client), return the # of salespeople servicing the region, the number of items sold in that region, the number of transactions that occurred in that region and the total cost of the items sold in that region.
17. Calculate, for each client region, the number of sales that occurred in the same region as the salesperson.
18. Because of weird tax rules, we need to collect a tax of 3% of revenue for those transactions where the client is in the western region. How much tax do we owe per month?

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