Advanced Problems

31. High-value customers

- We want to send all of our high-value customers a special VIP gift. We're defining high-value customers as those who've made at least 1 order with a total value (not including the discount) equal to $10,000 or more. We only want to consider orders made in the year 2016.

Expected Result

```
CustomerID CompanyName                               OrderID     TotalOrderAmount
---------- ----------------------------------------- ----------- ---------------------
QUICK      QUICK-Stop                                10865       17250.00
SAVEA      Save-a-lot Markets                        11030       16321.90
HANAR      Hanari Carnes                             10981       15810.00
KOENE      Königlich Essen                           10817       11490.70
RATTC      Rattlesnake Canyon Grocery                10889       11380.00
HUNGO      Hungry Owl All-Night Grocers              10897       10835.24

(6 row(s) affected)
```

32. High-value customers - total orders

- The manager has changed his mind. Instead of requiring that customers have at least one individual orders totaling $10,000 or more, he wants to define high-value customers as those who have orders totaling $15,000 or more in 2016. How would you change the answer to the problem above?

Expected Result

```
CustomerID CompanyName                               TotalOrderAmount
---------- ----------------------------------------- --------------------
SAVEA      Save-a-lot Markets                        42806.25
ERNSH      Ernst Handel                              42598.90
QUICK      QUICK-Stop                                40526.99
HANAR      Hanari Carnes                             24238.05
HUNGO      Hungry Owl All-Night Grocers              22796.34
RATTC      Rattlesnake Canyon Grocery                21725.60
KOENE      Königlich Essen                           20204.95
FOLKO      Folk och fä HB                            15973.85
WHITC      White Clover Markets                      15278.90

(9 row(s) affected)
```

33. Month-end orders

- At the end of the month, salespeople are likely to try much harder to get orders, to meet their month-end quotas. Show all orders made on the last day of the month. Order by EmployeeID and OrderID

Expected Result

EmployeeID	OrderID	OrderDate
1	10461	2015-02-28 00:00:00.000
1	10616	2015-07-31 00:00:00.000
2	10583	2015-06-30 00:00:00.000
2	10686	2015-09-30 00:00:00.000
2	10989	2016-03-31 00:00:00.000
2	11060	2016-04-30 00:00:00.000
3	10432	2015-01-31 00:00:00.000
3	10806	2015-12-31 00:00:00.000
3	10988	2016-03-31 00:00:00.000
3	11063	2016-04-30 00:00:00.000
4	10343	2014-10-31 00:00:00.000
4	10522	2015-04-30 00:00:00.000
4	10584	2015-06-30 00:00:00.000
4	10617	2015-07-31 00:00:00.000
4	10725	2015-10-31 00:00:00.000
4	10807	2015-12-31 00:00:00.000
4	11061	2016-04-30 00:00:00.000
4	11062	2016-04-30 00:00:00.000
5	10269	2014-07-31 00:00:00.000
6	10317	2014-09-30 00:00:00.000
7	10490	2015-03-31 00:00:00.000
8	10399	2014-12-31 00:00:00.000
8	10460	2015-02-28 00:00:00.000
8	10491	2015-03-31 00:00:00.000
8	10987	2016-03-31 00:00:00.000
9	10687	2015-09-30 00:00:00.000

(26 row(s) affected)

34. Orders with many line items

- The Northwind mobile app developers are testing an app that customers will use to show orders. In order to make sure that even the largest orders will show up correctly on the app, they'd like some samples of orders that have lots of individual line items. Show the 10 orders with the most line items, in order of total line items.

Expected Result

```
OrderID     TotalOrderDetails
----------- -----------------
11077       25
10979       6
10657       6
10847       6
10845       5
10836       5
10714       5
10670       5
10691       5
10698       5

(10 row(s) affected)
```

35. Orders - accidental double-entry

- Janet Leverling, one of the salespeople, has come to you with a request. She thinks that she accidentally double-entered a line item on an order, with a different ProductID, but the same quantity. She remembers that the quantity was 60 or more. Show all the OrderIDs with line items that match this, in order of OrderID.

Expected Result

```
OrderID
-----------
10263
10263
10990
10658
11030

(5 row(s) affected)
```

36. Late orders

- Some customers are complaining about their orders arriving late. Which orders are late?

Expected Result

OrderID	OrderDate	RequiredDate	ShippedDate
10264	2014-07-24	2014-08-21	2014-08-23
10271	2014-08-01	2014-08-29	2014-08-30
10280	2014-08-14	2014-09-11	2014-09-12
10302	2014-09-10	2014-10-08	2014-10-09
10309	2014-09-19	2014-10-17	2014-10-23
10380	2014-12-12	2015-01-09	2015-01-16
10423	2015-01-23	2015-02-06	2015-02-24
10427	2015-01-27	2015-02-24	2015-03-03
10433	2015-02-03	2015-03-03	2015-03-04
10451	2015-02-19	2015-03-05	2015-03-12
10483	2015-03-24	2015-04-21	2015-04-25
10515	2015-04-23	2015-05-07	2015-05-23
10523	2015-05-01	2015-05-29	2015-05-30
10545	2015-05-22	2015-06-19	2015-06-26
10578	2015-06-24	2015-07-22	2015-07-25
10593	2015-07-09	2015-08-06	2015-08-13
10596	2015-07-11	2015-08-08	2015-08-12
10663	2015-09-10	2015-09-24	2015-10-03
10687	2015-09-30	2015-10-28	2015-10-30
10660	2015-09-08	2015-10-06	2015-10-15
10705	2015-10-15	2015-11-12	2015-11-18
10709	2015-10-17	2015-11-14	2015-11-20
10726	2015-11-03	2015-11-17	2015-12-05
10727	2015-11-03	2015-12-01	2015-12-05
10749	2015-11-20	2015-12-18	2015-12-19
10777	2015-12-15	2015-12-29	2016-01-21
10779	2015-12-16	2016-01-13	2016-01-14
10788	2015-12-22	2016-01-19	2016-01-19
10807	2015-12-31	2016-01-28	2016-01-30
10816	2016-01-06	2016-02-03	2016-02-04
10827	2016-01-12	2016-01-26	2016-02-06
10828	2016-01-13	2016-01-27	2016-02-04
10847	2016-01-22	2016-02-05	2016-02-10
10924	2016-03-04	2016-04-01	2016-04-08
10927	2016-03-05	2016-04-02	2016-04-08
10960	2016-03-19	2016-04-02	2016-04-08
10970	2016-03-24	2016-04-07	2016-04-24
10978	2016-03-26	2016-04-23	2016-04-23
10998	2016-04-03	2016-04-17	2016-04-17

(39 row(s) affected)

37. Late orders – which employees?

- Some salespeople have more orders arriving late than others. Maybe they're not following up on the order process, and need more training. Which salespeople have the most orders arriving late?

Expected Result

```
EmployeeID  LastName             TotalLateOrders
----------- -------------------- ---------------
4           Peacock              10
3           Leverling            5
8           Callahan             5
9           Dodsworth            5
7           King                 4
2           Fuller               4
1           Davolio              3
6           Suyama               3

(8 row(s) affected)
```

38. Late orders vs. total orders

- Andrew, the VP of sales, has been doing some more thinking some more about the problem of late orders. He realizes that just looking at the number of orders arriving late for each salesperson isn't a good idea. It needs to be compared against the *total* number of orders per salesperson. Return results like the following:

Expected Result

```
EmployeeID  LastName             AllOrders   LateOrders
----------- -------------------- ----------- -----------
1           Davolio              123         3
2           Fuller               96          4
3           Leverling            127         5
4           Peacock              156         10
6           Suyama               67          3
7           King                 72          4
8           Callahan             104         5
9           Dodsworth            43          5

(8 row(s) affected)
```

39. Late orders vs. total orders - missing employee

- There's an employee missing in the answer from the problem above. Fix the SQL to show all employees who have taken orders.

Expected Result

```
EmployeeID  LastName            AllOrders   LateOrders
----------- ------------------- ----------- -----------
1           Davolio             123         3
2           Fuller              96          4
3           Leverling           127         5
4           Peacock             156         10
5           Buchanan            42          NULL
6           Suyama              67          3
7           King                72          4
8           Callahan            104         5
9           Dodsworth           43          5

(9 row(s) affected)
```

40. Late orders vs. total orders - fix null

- Continuing on the answer for above query, let's fix the results for row 5 - Buchanan. He should have a 0 instead of a Null in LateOrders.

Expected Result

```
EmployeeID  LastName             AllOrders   LateOrders
----------- -------------------- ----------- -----------
1           Davolio              123         3
2           Fuller               96          4
3           Leverling            127         5
4           Peacock              156         10
5           Buchanan             42          0
6           Suyama               67          3
7           King                 72          4
8           Callahan             104         5
9           Dodsworth            43          5

(9 row(s) affected)
```

41. Late orders vs. total orders - percentage

- Now we want to get the percentage of late orders over total orders.

Expected Result

EmployeeID	LastName	AllOrders	LateOrders	PercentLateOrders
1	Davolio	123	3	0.0243902439024
2	Fuller	96	4	0.0416666666666
3	Leverling	127	5	0.0393700787401
4	Peacock	156	10	0.0641025641025
5	Buchanan	42	0	0.0000000000000
6	Suyama	67	3	0.0447761194029
7	King	72	4	0.0555555555555
8	Callahan	104	5	0.0480769230769
9	Dodsworth	43	5	0.1162790697674

(9 row(s) affected)

42. Late orders vs. total orders - fix decimal

- So now for the PercentageLateOrders, we get a decimal value like we should. But to make the output easier to read, let's cut the PercentLateOrders off at 2 digits to the right of the decimal point.

Expected Result

EmployeeID	LastName	AllOrders	LateOrders	PercentLateOrders
1	Davolio	123	3	0.02
2	Fuller	96	4	0.04
3	Leverling	127	5	0.04
4	Peacock	156	10	0.06
5	Buchanan	42	0	0.00
6	Suyama	67	3	0.04
7	King	72	4	0.06
8	Callahan	104	5	0.05
9	Dodsworth	43	5	0.12

(9 row(s) affected)