

# EXERCISE AT HOME: MODERATELY DIFFICULT REPORTS WITH COMPARISON ACROSS AGGREGATION LEVELS

**Sales**(Customer, Product, Brand, Date, City, Region, Area, Quantity, Revenue, Margin)

Revenue by Brand and Product January 2008				
Brand	Product	Revenue (€)	Percent of Brand Revenue	Percent of Total Revenue
M1	P1	175,000	45%	21%
	P2	96,000	25%	12%
	P3	114,000	30%	14%
M1	All products	385,000	100%	47%
M2	P4	102,400	23%	12%
	P5	96,200	22%	12%
	P6	124,000	28%	15%
	P7	120,000	27%	14%
M2	All products	442,600	100%	53%
All brands		627,000		100%

# VERY DIFFICULT REPORTS WITHOUT ANALYTIC SQL: EXERCISE AT HOME!

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We want to partition the customers into four groups:

- **Top5%**, with 5% of customers with the highest amount of revenues.
- **Next15%**, with 15% of other customers with the highest amount of revenues.
- **Middle30%**, with 30% of other customers with the highest amount of revenues.
- **Bottom50%**, with 50 % of the customers with the lowest amount of revenues.

For each customer group we want to know their number, and the percentage of the sum of their revenues compared to total revenue of all sales.

<b>Group</b>	<b>Number of customers</b>	<b>Percent of total revenue</b>
Top5%	1	20
Next15%	3	50
Middle30%	6	20
Bottom50%	10	10

# EXERCISE AT HOME: SOLUTION USING LAG-LEAD (and NO JOIN)

**Sales**(Customer, Product, Brand, Date, City, Region, Area, Quantity, Revenue, Margin)

Comparison between Revenue by Brand and by Product 2009 – 2008				
Brand	Product	Revenue (€) 2009	Revenue (€) 2008	Delta (%)
B1	P1	2 100	13 560	-546
	P2	3 720	23 640	-535
	P3	15 300	20 340	-33
B2	P4	12 600	1 440	89
	P5	22 500	2 100	91
	P6	48 300		100

**Delta = 100 × (Revenue2009 - Revenue2008)/Revenue2009**

**A product may have been sold in one year, but not in the other !**