Université de Sherbrooke

Bases de données dimensionnelles

Exemple Commande

MCED_BDD_90

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1. Introduction

Cet exemple de processus de commande tiré de [Adamson2010a].

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1.1. Élicitation

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Order Report Western Region
January 2009 (cont'd)

Category	Product	SKU	Quantity Sold	Cost	Order Dollars
Packaging	Box - Large	011-4822	700	$ 950.53	$ 1,100.00
	Box - Medium	011-4899	1,250	$ 1,001.84	$ 1,380.00
	Box - Small	011-5744	1,200	$ 1,200.72	$ 1,330.00
	Clasp Letter	011-1729	400	$ 352.82	$ 356.00
	Envelope #10	021-0011	2,000	$ 2,017.46	$ 2,080.00
	Envelope Bubble	021-0012	1,200	$ 866.51	$ 1,212.00
	All Packaging			*$ 6,389.88*	*$ 7,458.00*
Pens	Gel Pen Black	017-1999	5000	$ 116.39	$ 120.00
	Gel Pen Blue	017-2444	2990	$ 600.88	$ 624.91
	Silver Pen	017-3001	50	$ 128.46	$ 130.00
	All Pens			*$ 845.73*	*$ 874.91*
Grand Total				***$207,229.42***	***$214,896.91***

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Figure 1-2 Sample page from an orders report

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Facts	Dimensions
Order Dollars	Product
Cost Dollars	Product Description
Quantity Ordered	SKU
	Brand Code
	Brand
	Brand Manager
	Category Code
	Category
	Order Date
	Month of Order
	Quarter of Order
	Fiscal Period of Order
	Year of Order
	Salesperson
	Salesperson ID
	Territory
	Territory Code
	Territory Manager
	Region
	Region Code
	Region VP
	Customer
	Customer ID
	Headquarters State of Customer
	Billing Address
	Billing City
	Billing State
	Billing Zip
	SIC Code of Customer
	Industry Name of Customer

Figure 1-3 Facts and dimensions for the orders process

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1.2. Schéma en étoile

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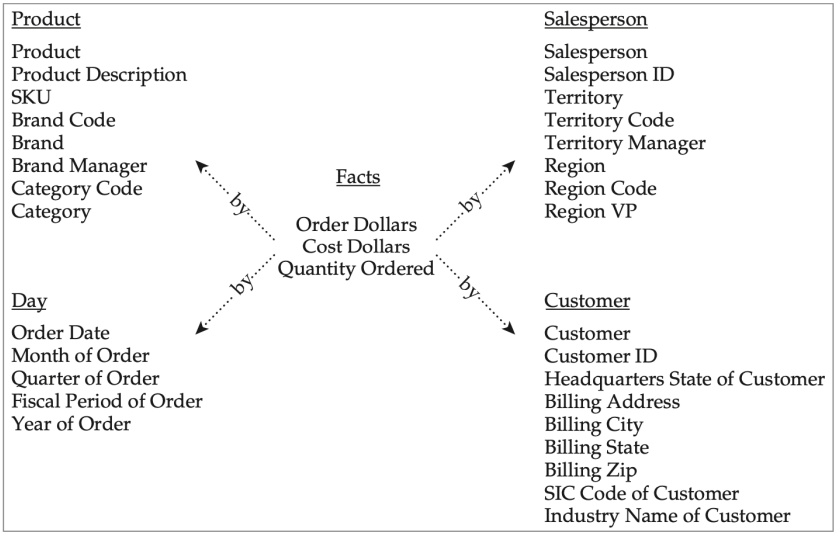

Figure 1-4 Sorting out facts and dimensions for the orders process

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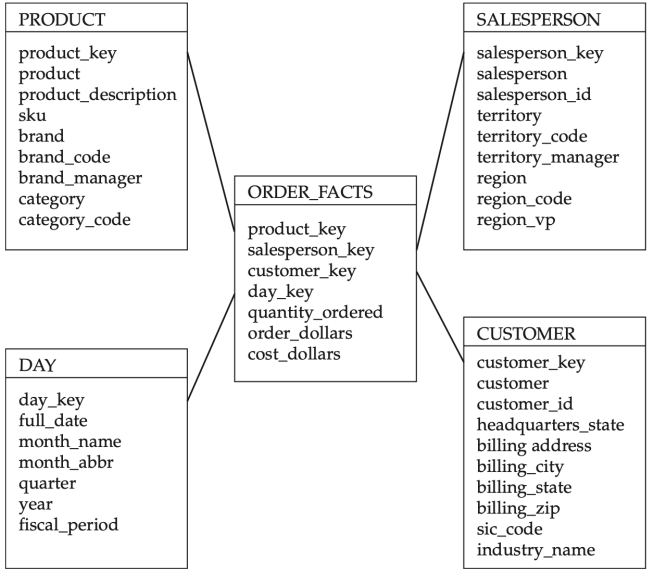

Figure 1-5 A simple star schema for the orders process

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A fact row represents orders of a product sold by a salesperson to a customer on a given day.

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1.3. Interrogation

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1.3.1. Browser

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SQL Query

```
SELECT DISTINCT
   product.category
FROM
   product
ORDER By
   product.category
```

Query Results

```
CATEGORY
========
.
.
.
Fasteners
Folders
Packaging
Pens
Measurement
Notebooks
Storage
.
.
.
```

SQL Query

```
SELECT DISTINCT
   product.category,
   product.product
FROM
   product
WHERE
   product.category = "Packaging"
ORDER BY
   product.product
```

Query Results

```
CATEGORY     PRODUCT
========     =======
Packaging    Box - Large
Packaging    Box - Medium
Packaging    Box - Small
Packaging    Clasp Letter
Packaging    Envelope #10
Packaging    Envelope Bubble
```

Figure 1-7 Browse queries and their results

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1.3.2. Drill across

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Query

```
SELECT
    product.category,
    product.product,
    SUM( order_facts.order_dollars ) AS "ORDER DOLLARS"
FROM
    day,
    product,
    order_facts
WHERE
    day.month_name = "January" AND
    day.year = 2009 AND
    order_facts.day_key = day.day_key AND
    order_facts.product_key = product.product_key
GROUP BY
    product.category,
    product.product
ORDER BY
    product.category,
    product.product
```

Dimensions that will appear in results

Aggregated fact that will appear in results

Tables in the query

Dimensions are used to filter the results

Surrogate key columns are used to join the tables together

Dimensions specify scope of SQL `SUM()` aggregation

Dimensions control sorting of results

Results

CATEGORY	PRODUCT	ORDER DOLLARS
Packaging	Box - Large	1,100.00
Packaging	Box - Medium	1,271.00
Packaging	Box - Small	2,220.00
Packaging	Clasp Letter	7,503.00
Packaging	Envelope #10	5,872.00
Packaging	Envelope Bubble	6,708.00
Pens	Gel Pen Black	987.00
Pens	Gel Pen Blue	1,980.00
Pens	Silver Pen	2,206.00

Each row summarizes numerous order lines from the fact table

Dimension values provide context

The fact, aggregated

Figure 1-6 Querying the star schema

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Références

[Adamson2010a]
Christopher ADAMSON ;
The complete reference star schema ;
McGraw-Hill, New York (NY, US), 2010 ;
ISBN 978-0-07-174432-4.

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