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| Dimension and Facts Basics |

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| REVISION HISTORY | | | | | |
| Ver. | Description of Change | Author | Date | Approved | |
| Name | Effective Date |
| 1.0 | Initial status | Valeryia\_Lupanava | 09-NOV-2017 |  |  |
| 2.0 | Improving dimensional schema | Valeryia\_Lupanava | 11-NOV-2017 |  |  |

Contents

[1. Data Description 3](#_Toc498129897)

[1.1. Description of selected schema 3](#_Toc498129898)

[1.2. Description of data sources 3](#_Toc498129899)

[1.3. Description of business rules 3](#_Toc498129900)

[2. Dimensions of a Business 4](#_Toc498129901)

[2.1. Definition of selected Business Process 4](#_Toc498129902)

[2.2. Declaring the Grain 4](#_Toc498129903)

[2.3. Identifying the Dimensions 4](#_Toc498129904)

[2.4. Identifying the Facts 6](#_Toc498129905)

[2.5. Dimensional model. Star Schema 8](#_Toc498129906)

[2.5.1. Fact\_retail\_sales 9](#_Toc498129907)

[2.5.2. Facs\_product\_balances 10](#_Toc498129908)

# Data Description

## Description of selected schema

The Star schema was chosen for business processes description.

The main reasons:

* Simple structure;
* Absence of a big number of tables to join;
* Denormalized tables are not too large in a specific case of this task;
* Widely support by a large number of business intelligence tools.

## Description of data sources

Customer and manager information was generated on the site [www.mockaroo.com](http://www.mockaroo.com/). It allows creating file with 1000 rows.

Additionally, manager information was modified in the Excel. There was added column “Position name”. Information in that column was created by the specific random formula.

Information for Collection, Line, Product type, Store dimensions is on the official company’s site [www.milavitsa.com](http://www.milavitsa.com/). Information about Sizes can be find via tne next links [www.milavitsa.com/collections/converter](http://www.milavitsa.com/collections/converter/) and [www.globebrand.com/sizing\_charts](https://www.globebrand.com/sizing_charts)

## Description of business rules

Business rules:

* Every **Retail Sale** must be associated with a valid **Customer**.
* A **Retail Sale** is always associated with a **Payment Method**.
* A **Retail Sale** can have one or many **Products**.
* A **Retail Sale** is always associated with a specific **Employee**.

# Dimensions of a Business

## Definition of selected Business Process

Business Process for analysis is Milavitsa’s sales per different metrics.

## Declaring the Grain

Fact granularity is Daily Sales Amount per certain Customer and Employee in a specific a Store.

## Identifying the Dimensions

Schema should contains next dimensions:

1. Dim\_customers:

|  |  |  |
| --- | --- | --- |
| **Column Name** | **Data Type** | **Descroption** |
| CUSTOMER\_ID | NUMBER(10) | Primary Key |
| FIRST\_NAME | VARCHAR2(40 BYTE) |  |
| LAST\_NAME | VARCHAR2(40 BYTE) |  |
| AGE | NUMBER(2) |  |
| AGE\_CATEGORY | VARCHAR2(20 BYTE) |  |
| EMAIL | VARCHAR2(40 BYTE) |  |
| PHONE | VARCHAR2(40 BYTE) |  |
| ADDRESS | VARCHAR2(20 BYTE |  |
| CITY | VARCHAR2(20 BYTE) |  |
| COUNTRY | VARCHAR2(20 BYTE) |  |
| REGION | VARCHAR2(20 BYTE) |  |

1. Dim\_products:

|  |  |  |
| --- | --- | --- |
| **Column Name** | **Data Type** | **Descroption** |
| PRODUCT\_DETAILS\_ID | NUMBER(10) | Primary Key |
| PRODUCT\_ID | NUMBER(10) |  |
| PRODUCT\_NAME | VARCHAR2(10 BYTE) |  |
| PRODUCT\_DESCRIPTION | VARCHAR2(40 BYTE) |  |
| LINE\_ID | NUMBER(10) |  |
| LINE\_NAME | VARCHAR2(10 BYTE) |  |
| LINE\_DESCRIPTION | VARCHAR2(40 BYTE) |  |
| COLLECTION\_ID | NUMBER(10) |  |
| SEASON\_ID | NUMBER(10) |  |
| SEASON | VARCHAR2(10 BYTE) |  |
| COLLECTION\_DESCRIPTION | VARCHAR2(40 BYTE) |  |
| COLLECTION\_DATE | DATE |  |
| PRODUCT\_TYPE\_ID | NUMBER(10) |  |
| PRODUCT\_TYPE | VARCHAR2(10 BYTE) |  |
| HEIGHT | VARCHAR2(10 BYTE) |  |
| HIP\_GIRTH | NUMBER(10) |  |
| BRA\_SIZE\_UK | VARCHAR2(10 BYTE) |  |
| BRA\_SIZE\_USA | VARCHAR2(10 BYTE) |  |
| BRA\_SIZE\_EU | VARCHAR2(10 BYTE) |  |
| BRA\_SIZE\_FR | VARCHAR2(10 BYTE) |  |
| BRA\_SIZE\_UIE | VARCHAR2(10 BYTE) |  |
| PANTIES\_SIZE\_UK | VARCHAR2(10 BYTE) |  |
| PANTIES\_SIZE\_USA | VARCHAR2(10 BYTE) |  |
| PANTIES\_SIZE\_EU | VARCHAR2(10 BYTE) |  |
| PANTIES\_SIZE\_FR | VARCHAR2(10 BYTE) |  |
| PANTIES\_SIZE\_UIE | VARCHAR2(10 BYTE) |  |
| COLOR | VARCHAR2(40 BYTE) |  |
| PRICE | NUMBER(10) |  |

1. Dim\_stores:

|  |  |  |
| --- | --- | --- |
| **Column Name** | **Data Type** | **Descroption** |
| STORE\_ID | NUMBER(10) | Primary Key |
| MANAGER\_ID | NUMBER(10) |  |
| PHONE | VARCHAR2(40 BYTE) |  |
| ADDRESS | VARCHAR2(20 BYTE) |  |
| CITY | VARCHAR2(20 BYTE) |  |
| COUNTRY | VARCHAR2(20 BYTE) |  |
| REGION | VARCHAR2(20 BYTE) |  |

1. Dim\_payment\_methods;

|  |  |  |
| --- | --- | --- |
| **Column Name** | **Data Type** | **Descroption** |
| PAYMENT\_METHOD\_ID | NUMBER(10,0) | Primary Key |
| PAYMENT\_METHOD\_NAME | VARCHAR2(40 BYTE) |  |
| BANK\_NAME | VARCHAR2(40 BYTE) |  |

1. Dim\_employees;

|  |  |  |
| --- | --- | --- |
| **Column Name** | **Data Type** | **Descroption** |
| EMPLOYEE\_ID | NUMBER(10) | Primary Key |
| FIRST\_NAME | VARCHAR2(40 BYTE) |  |
| LAST\_NAME | VARCHAR2(40 BYTE) |  |
| STORE\_ID | NUMBER(10) |  |
| POSITION\_NAME | VARCHAR2(40 BYTE) |  |
| POSITION\_GRADE | VARCHAR2(40 BYTE) |  |
| HIRE\_DATE | DATE |  |
| FIRE\_DATE | DATE |  |
| WORK\_PERIOD | NUMBER(10) |  |
| EMAIL | VARCHAR2(40 BYTE) |  |
| PHONE | VARCHAR2(40 BYTE) |  |
| MANAGER\_ID | NUMBER(10) |  |
| M\_FIRST\_NAME | VARCHAR2(40 BYTE) |  |
| M\_LAST\_NAME | VARCHAR2(40 BYTE) |  |
| M\_POSITION\_NAME | VARCHAR2(40 BYTE) |  |

1. Dim\_promotions;

|  |  |  |
| --- | --- | --- |
| **Column Name** | **Data Type** | **Descroption** |
| PROMOTION\_ID | NUMBER(10) | Primary Key |
| PROMOTION\_TYPE\_ID | NUMBER(10) |  |
| PROMOTION\_TYPE | VARCHAR2(40 BYTE) |  |
| PROMOTION\_DESCRIPTION | VARCHAR2(40 BYTE) |  |
| PROMOTION\_PRICE | NUMBER(10) |  |
| PRICE\_DECREASING\_PERCENT | NUMBER(10) |  |
| FREE\_UNIT\_AMOUNT | NUMBER(10) |  |
| START\_DATE | DATE |  |
| END\_DATE | DATE |  |

1. Dim\_date.

|  |  |  |
| --- | --- | --- |
| **Column Name** | **Data Type** | **Descroption** |
| DATE\_ID | NUMBER(10) | Primary Key |
| FULL\_DATE | VARCHAR2(10) |  |
| WEEK\_DAY\_FULL\_NAME | VARCHAR2(36 BYTE) |  |
| WEEK\_DAY\_SHORT\_NAME | VARCHAR2(12 BYTE) |  |
| DAY\_NUMBER\_OF\_WEEK | NUMBER |  |
| DAY\_NUMBER\_OF\_MONTH | NUMBER |  |
| DAY\_NUMBER\_OF\_YEAR | NUMBER |  |
| MONTH\_END\_DATE | NUMBER |  |
| MONTH\_FULL\_NAME | VARCHAR2(36 BYTE) |  |
| MONTH\_SHORT\_NAME | VARCHAR2(12 BYTE) |  |
| MONTH\_NUMBER\_OF\_YEAR | NUMBER |  |
| MONTH\_YEAR | VARCHAR2(17 BYTE) |  |
| QUARTER\_YEAR | VARCHAR2(7 BYTE) |  |
| QUARTER\_NUMBER\_OF\_YEAR | NUMBER |  |
| HALF\_YEAR\_NUMBER | NUMBER |  |
| HALF\_YEAR | VARCHAR2(7 BYTE) |  |
| YEAR | VARCHAR2(4 BYTE) |  |
| YEAR\_END\_DATE | NUMBER |  |

## Identifying the Facts

Schema should contains the next fact tables:

1. Fact\_retail\_sales;

|  |  |  |
| --- | --- | --- |
| **Column Name** | **Data Type** | **Descroption** |
| SALE\_ID | NUMBER(10,0) | Surrogate identifier of one purchase |
| RECEIPT\_ID | NUMBER(10,0) | Unique number of receipt – natural identifier of one purchase |
| DATE\_ID | NUMBER(10,0) | Foreign Key |
| PRODUCT\_DETAILS\_ID | NUMBER(10,0) | Foreign Key |
| EMPLOYEE\_ID | NUMBER(10,0) | Foreign Key |
| CUSTOMER\_ID | NUMBER(10,0) | Foreign Key |
| STORE\_ID | NUMBER(10,0) | Foreign Key |
| PAYMENT\_METHOD\_ID | NUMBER(10,0) | Foreign Key |
| PROMOTION\_ID | NUMBER(10,0) | Foreign Key |
| CURRENCY\_ID | NUMBER(10,0) | Foreign Key |
| SALE\_SUM | NUMBER(10,0) | Total sum per a certain sale |
| SALE\_AMOUNT | NUMBER(10,0) | Total amount of units per a certain sale |

1. Fact\_product\_balances;

|  |  |  |
| --- | --- | --- |
| **Column Name** | **Data Type** | **Descroption** |
| DATE\_ID | NUMBER(10,0) | Foreign Key |
| PRODUCT\_DETAILS\_ID | NUMBER(10,0) | Foreign Key |
| MANAGER\_ID | NUMBER(10,0) | Foreign Key |
| STORE\_ID | NUMBER(10,0) | Foreign Key |
| STOCK\_VALUE | NUMBER(10,0) | Total stock sum per a product |
| TOTAL\_PRODUCT\_BALANCE | NUMBER(10,0) | Total stock amount of units per a product |

## C:\Users\Valeryia\Desktop\Task 07\bl_dm_model.jpgDimensional model. Star Schema

### C:\Users\Valeryia\Desktop\Task 07\fact_retail_sales.jpgFact\_retail\_sales

### Facs\_product\_balances

