Week 4

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# 4.1

## Feiten

Uit ons gegevensmodel hebben wij de volgende feiten gehaald, met de bijbehorende dimensies:

* order\_details
  + *product*
  + *returned\_item*
* order\_method
  + *heeft geen dimensies*
* order\_header
  + *retailer\_site*
  + *sales\_branch*
  + *sales\_staff*
* training
  + *course*
  + *sales\_staff*
* satisfaction
  + *satisfaction\_type*
  + *sales\_staff*
* SALES\_TARGETData
  + *sales\_staff*
  + *product*
  + *retailer*
* GO\_SALES\_INVENTORY\_LEVELS
  + *product*
* GO\_SALES\_PRODUCT\_FORECAST
  + *product*

## Dimensietabellen

| Product | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| INTRODUCTION\_DATE  date | PRODUCTION\_COST  number | MARGIN  number | LANGUAGE  string | **MINIMUM\_SALE\_PRICE**  number | PRODUCT\_LINE  product\_line\_code, product\_line\_code\_en | PRODUCT\_TYPE  product\_type\_code, product\_type\_en |
| Product  product\_number, product\_name, description, product\_image | | | | | | |

| Returned\_item | | | | |
| --- | --- | --- | --- | --- |
| RETURN\_DATE  Date | RETURN\_QUANTITY  Number | ORDER\_DETAIL\_CODE  string | RETURN\_REASON  return\_reason\_code, return\_description\_en | **RETURNED\_ITEMS\_TOTAL\_PRICE**  **number** |
| RETURNED\_ITEM  return\_code | | | | |

| SALES\_STAFF | | | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| POSITION\_EN  name | | | WORK\_PHONE  number | | | DATE\_HIRED  date | | | MANAGER\_CODE  string | | | FAX  number | SALES\_BRANCH  sales\_branch\_code, address, adress\_extra | first\_name  string | last\_name  string |
| **full\_name**  string | |
| SALES\_STAFF  sales\_staff\_code, email, extension | | | | | | | | | | | | | | | |

| COURSE | | | |
| --- | --- | --- | --- |
| COURSE  course\_code, course\_description, **course\_description\_short** | | | |

| COUNTRY | | | | |
| --- | --- | --- | --- | --- |
| SALES\_TERRITORY  sales\_territory\_code, territory\_name\_en | | | LANGUAGE  name | CURRENCY  name |
| COUNTRY  country\_code, name, flag\_image | | | | |

Bij Country is er geen afgeleide. Er is hiervoor te weinig informatie.

| RETAILER | |
| --- | --- |
| COMPANY\_CODEMR  code | RETAILER\_TYPE  retailer\_type\_code, retailer\_type\_EN |
| RETAILER  retailer\_code, retailer\_name | |

Bij retailer past geen afgeleide. Er is geen beschrijving om in te korten en retailet\_type geld al al groepering.

| RETAILER\_SITE | | | | |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| COUNTRY\_CODE code | | | RETAILER\_CODE code | ACTIVE INDICATOR boolean | ADDRESS1  address | ADDRESS2  address | ADDRESS3  address | **MAIN\_ADDRESS**  **string** |
| CITY name | | |
| REGION name | | |
| POSTAL\_ZONE code | | |
| RETAILER\_SITE  retailer\_site\_code | | | | |  |  |  |  |

| RETAILER\_CONTACT | | | | | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| RETAILER\_SITE\_CODE  code | | | | JOB\_POSITION\_EN  name | | | | EXTENSION  number | | | FAX  number | | GENDER  string | | FIRST\_NAME  string | LAST\_NAME  string | **FULL\_NAME**  string |
| RETAILER\_CONTACT  retailer\_contact\_code, e\_mail | | | | | | | | | | | | | | | | | |

| RETAILER\_HEADQUARTERS | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| COUNTRY\_CODE code | PHONE  number | | FAX  number | | SEGMENT\_CODE  code | | address1 | address2 |
|
| REGION name |
|
| CITY  name |
| **main\_address**  **string** | |
| POSTAL\_ZONE  code |
|
|
|
| RETAILER\_HEADQUARTERS  retailer\_codemr, retailer\_name | | | | | | | | |

| RETAILER\_SEGMENT |
| --- |
| language  name |
| RETAILER\_SEGMENT  segment\_code, segment\_name, segment\_description, **segment\_description\_short** |

| SATISFACTION\_TYPE |
| --- |
| SATISFACTION\_TYPE  satisfaction\_type\_code, satisfaction\_type\_description, **satisfaction\_type\_description\_short** |

| SALES\_BRANCH | | | |
| --- | --- | --- | --- |
| COUNTRY\_CODE code | | ADDRESS1  address | ADDRESS2  address |
| **main\_address**  **string** | |
| REGION name | | | |
| CITY  name | | | |
| POSTAL\_ZONE  code | | | |
| RETAILER\_HEADQUARTERS  sales\_branch\_code | | | |

| SALES\_BRANCH | | | | |
| --- | --- | --- | --- | --- |
| COUNTRY\_CODE code | | ADDRESS1  address | ADDRESS2  address | **main\_address**  **string** |
| REGION  regio | |
| CITY  stad | |
| POSTAL\_ZONE  postal\_zone | |
| RETAILER\_HEADQUARTERS  sales\_branch\_code | | | | |

# 4.2

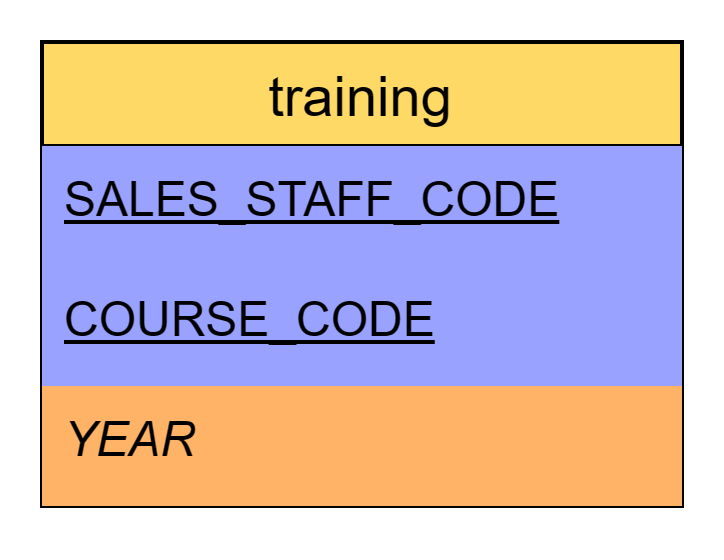
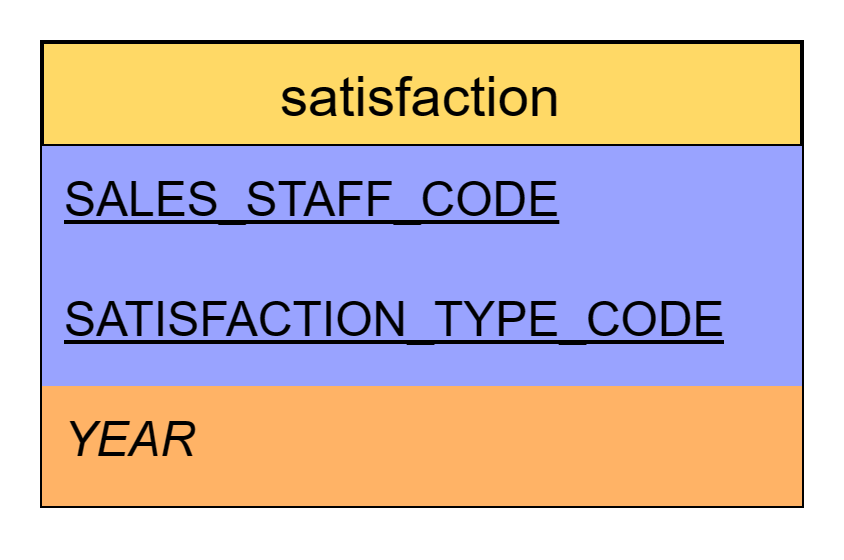
## Feiten

Uit ons gegevensmodel hebben wij de volgende feiten gehaald:

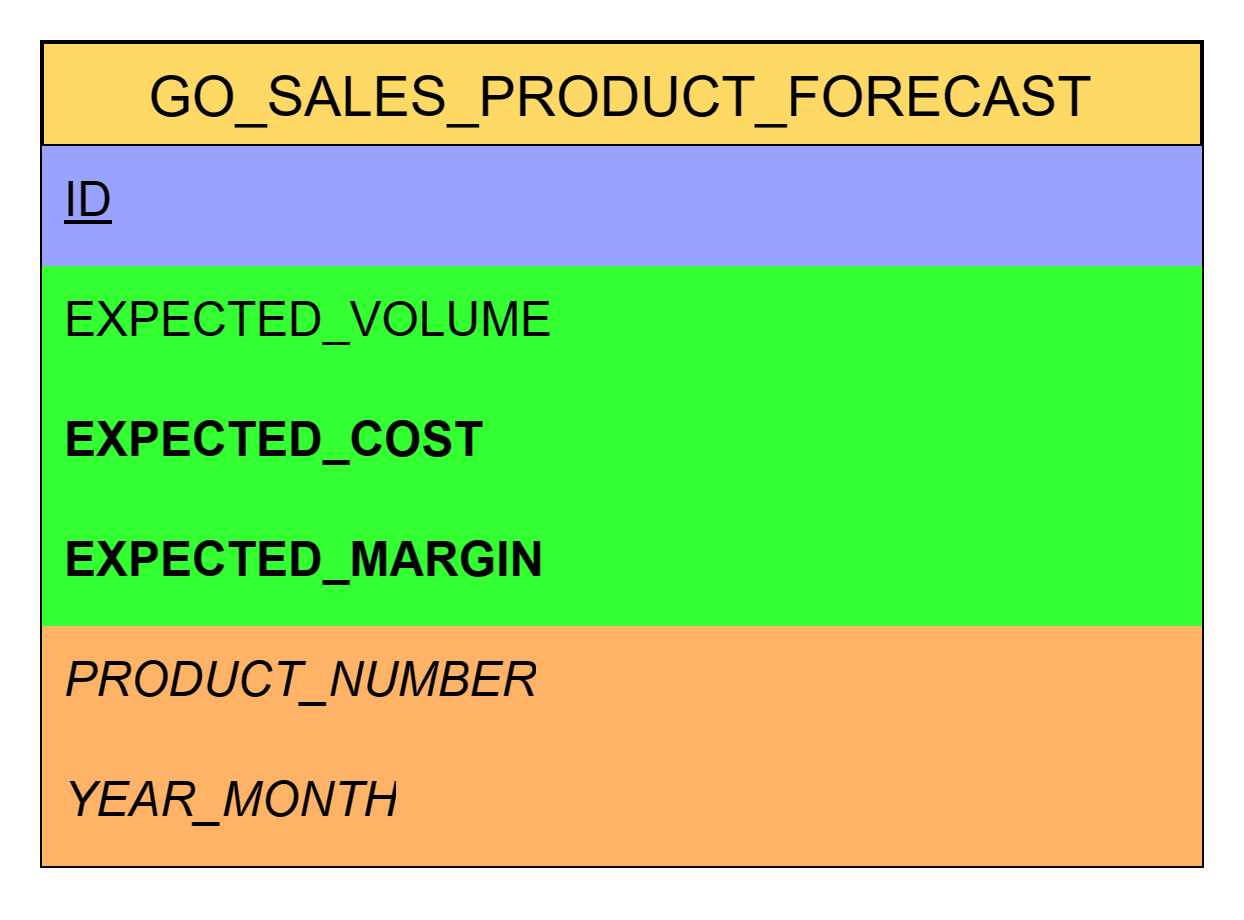
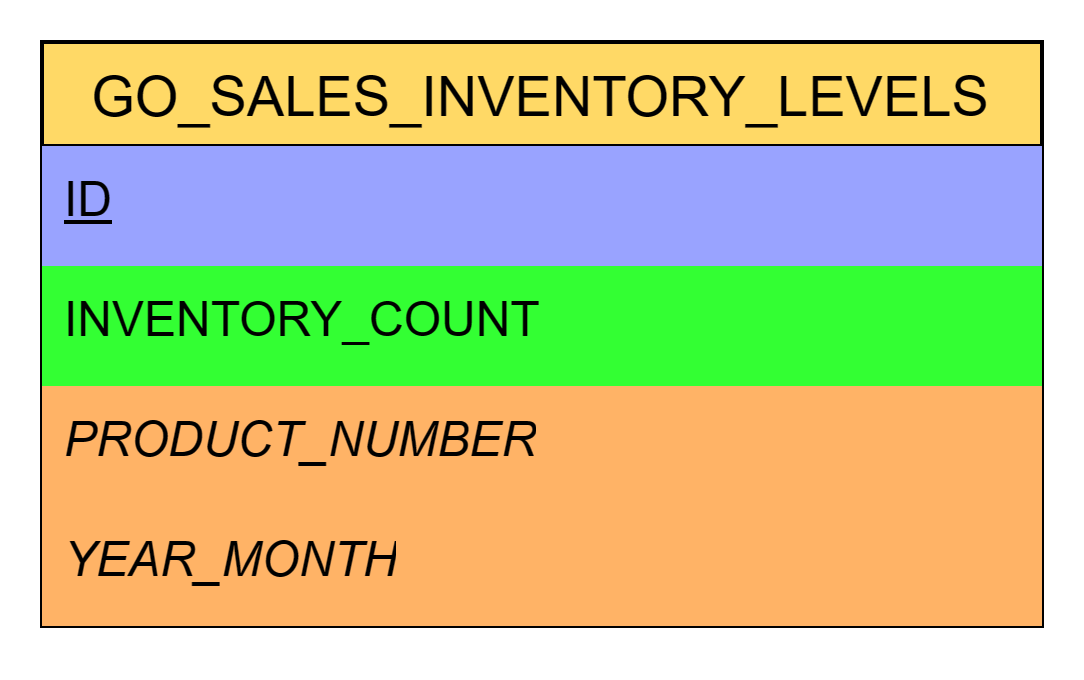
* order\_details
* order\_method
* order\_header
* training
* satisfaction
* SALES\_TARGETData
* GO\_SALES\_INVENTORY\_LEVELS
* GO\_SALES\_PRODUCT\_FORECAST

## Feit tabellen

Van deze feiten hebben we feit tabellen gemaakt. Paars zijn de primary keys, groen meetwaarden en oranje zijn foreign keys.







### Afgeleide meetwaarden

De dikgedrukte groene velden zijn afgeleide meetwaarden.

#### SALES\_TARGET\_Data

* TARGET\_COST geeft inzicht in hoeveel de sales target gaat kosten qua producten
  + Wordt gemaakt door SALES\_TARGET en PRODUCTION\_COST te vermenigvuldigen
* TARGET\_MARGIN geeft inzicht in het verwachte totale marge voor de sales target
  + Wordt gemaakt door SALES\_TARGET en MARGIN te vermenigvuldigen

#### order\_details

* TOTAL\_COST geeft inzicht in de totale productie kosten voor de order
  + Wordt berekent door QUANTITY te vermenigvuldigen met PRODUCTION\_COST
* TOTAL\_MARGIN geeft inzicht in de margin van de order.
  + Wordt berekent door QUANTITY te vermenigvuldigen met MARGIN

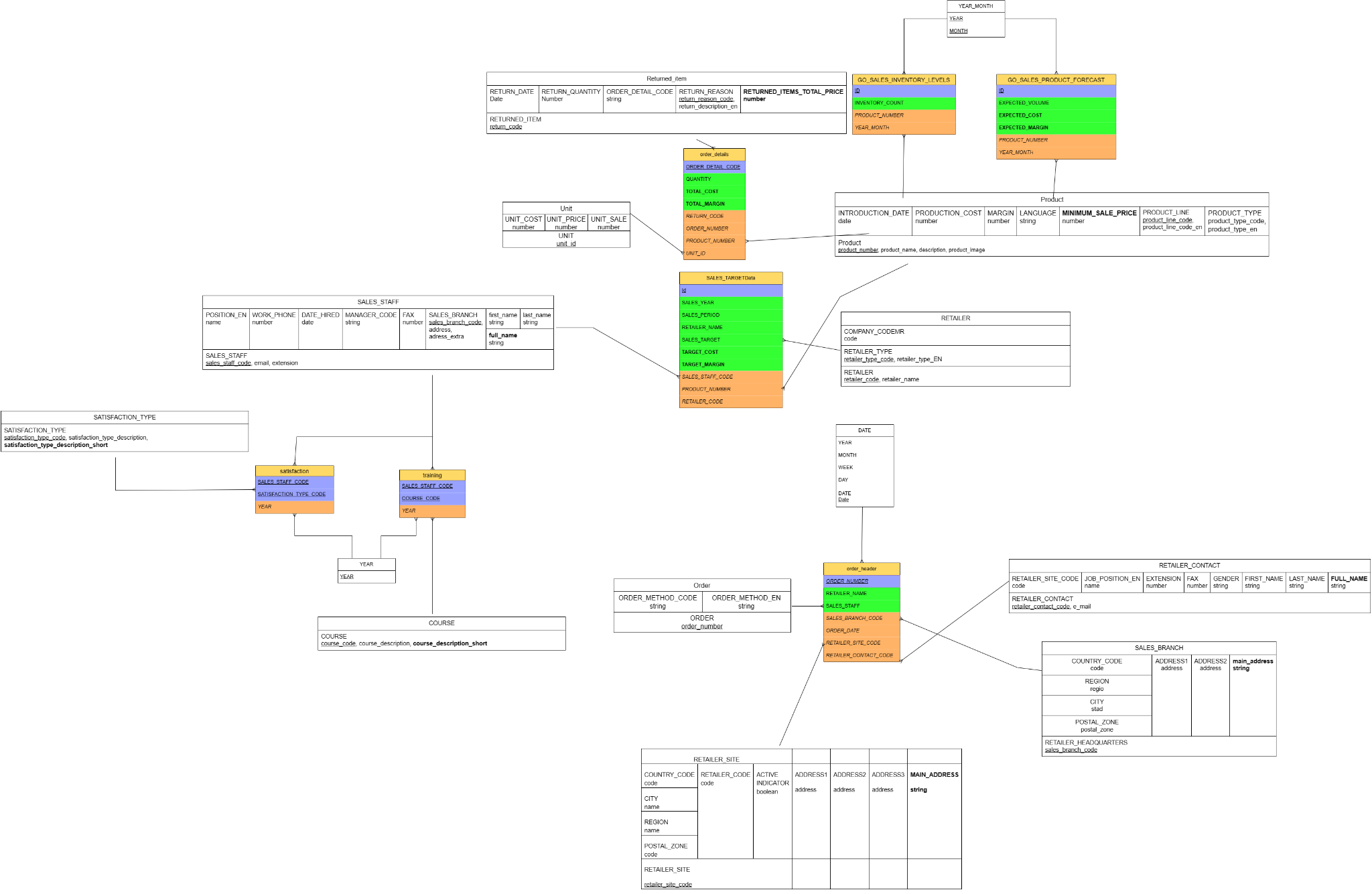
#### GO\_SALES\_PRODUCT\_FORECAST

* EXPECTED\_COST geeft inzicht in de verwachte kosten voor de periode.
  + Berekend door EXPECTED\_VOLUME te vermenigvuldigen met PRODUCTION\_COST
* EXPECTED\_MARGIN geeft inzicht in de verwachte margin voor de periode.
  + Berekend door EXPECTED\_VOLUME te vermenigvuldigen met MARGIN

## 

## Ster schema

Dit alles leidt tot het volgende ster schema:



# 4.3

* + Maak een database in SSMS, dit wordt je uiteindelijke Data Warehouse.
  + Maak een ETL-schema van elke tabel in het Sterschema.
  + Implementeer elk gemaakt ETL-schema in Python (met Jupyter Notebook). Gebruik hierbij de technische informatie uit week 2.
  + Zorg er ten slotte voor dat je het Sterschema en elk ETL-schema aan je portfolio hebt toegevoegd. Hier word je in week 6 op beoordeeld.

## ETL-Schema’s

| **Returned\_item** |
| --- |
| RETURNED\_ITEM\_code  RETURNED\_ITEM\_DATE\_date  RETURNED\_ITEM\_QUANTITY\_quantity  RETURNED\_ITEM\_ORDER\_DETAIL\_CODE\_detail\_code  RETURNED\_ITEM\_RETURN\_REASON\_code  RETURNED\_ITEM\_RETURN\_REASON\_desctiption\_en  RETURNED\_ITEM\_RETURNED\_ITEMS\_TOTAL\_PRICE\_total |

| **Unit** |
| --- |
| UNIT\_id  UNIT\_COST\_cost  UNIT\_PRICE\_price  UNIT\_SALE\_sale |

| **Sales\_staff** |
| --- |
| SALES\_STAFF\_code  SALES\_STAFF\_FIRST\_NAME\_first\_name  SALES\_STAFF\_LAST\_NAME\_last\_name  SALES\_STAFF\_FULL\_NAME\_\_full\_name  SALES\_STAFF\_POSITION\_EN\_position  SALES\_STAFF\_WORK\_PHONE\_work\_phone  SALES\_STAFF\_extension  SALES\_STAFF\_FAX\_fax  SALES\_STAFF\_email  SALES\_STAFF\_DATE\_HIRED\_hired  SALES\_STAFF\_SALES\_BRANCH\_CODE\_branch\_code  SALES\_STAFF\_MANAGER\_CODE\_manager  SALES\_STAFF\_SALES\_BRANCH\_ADDRESS\_address  SALES\_STAFF\_SALES\_BRANCH\_ADDRESS\_EXTRA\_address\_extra |

| **Satisfaction\_type** |
| --- |
| SATISFACTION\_TYPE\_code  SATISFACTION\_TYPE\_description  SATISFACTION\_TYPE\_description\_short |

| **Course** |
| --- |
| COURSE\_code  COURSE\_description  COURSE\_description\_short |

| **Year** |
| --- |
| YEAR |

| **Date** |
| --- |
| DATE\_date  DATE\_YEAR\_year  DATE\_MONTH\_month  DATE\_DAY\_day |

| **Order** |
| --- |
| ORDER\_order\_number  ORDER\_ORDER\_METHOD\_CODE\_method\_code  ORDER\_ORDER\_METHOD\_EN\_method |

| **Retailer\_site** |
| --- |
| RETAILER\_SITE\_code  RETAILER\_SITE\_RETAILER\_CODE\_retailer\_code  RETAILER\_SITE\_ADDRESS1\_address  RETAILER\_SITE\_ADDRESS2\_address  RETAILER\_SITE\_CITY\_city  RETAILER\_SITE\_REGION\_region  RETAILER\_SITE\_POSTAL\_ZONE\_postal\_zone  RETAILER\_SITE\_COUNTRY\_CODE\_country  RETAILER\_SITE\_ACTIVE\_INDICATOR\_indicator  RETAILER\_SITE\_MAIN\_ADDRESS\_address |

| **Sales\_branch** |
| --- |
| SALES\_BRANCH\_code  SALES\_BRANCH\_ADDRESS1\_address  SALES\_BRANCH\_ADDRESS2\_address  SALES\_BRANCH\_MAIN\_ADDRESS\_address  SALES\_BRANCH\_CITY\_city  SALES\_BRANCH\_REGION\_region  SALES\_BRANCH\_POSTAL\_ZONE\_postal\_zone  SALES\_BRANCH\_COUNTRY\_CODE\_country |

| **Retailer\_contact** |
| --- |
| RETAILER\_CONTACT\_code  RETAILER\_CONTACT\_RETAILER\_SITE\_CODE\_site\_code  RETAILER\_CONTACT\_FIRST\_NAME\_first\_name  RETAILER\_CONTACT\_LAST\_NAME\_last\_name  RETAILER\_CONTACT\_FULL\_NAME\_full\_name  RETAILER\_CONTACT\_JOB\_POSITION\_EN\_position  RETAILER\_CONTACT\_EXTENSION\_extension  RETAILER\_CONTACT\_FAX\_fax  RETAILER\_CONTACT\_email  RETAILER\_CONTACT\_GENDER\_gender |

| **Retailer** |
| --- |
| RETAILER\_code  RETAILER\_\_name  RETAILER\_COMPANY\_CODEMR\_company  RETAILER\_RETAILER\_TYPE\_retailer\_type\_code  RETAILER\_RETAILER\_TYPE\_retailer\_type\_EN |

| **Product** |
| --- |
| PRODUCT\_number  PRODUCT\_INTRODUCTION\_DATE\_introduced  PRODUCT\_PRODUCT\_TYPE\_code  PRODUCT\_PRODUCT\_TYPE\_code\_en  PRODUCT\_PRODUCTION\_COST\_cost  PRODUCT\_MARGIN\_margin  PRODUCT\_image\_image  PRODUCT\_LANGUAGE\_language  PRODUCT\_name\_product  PRODUCT\_description\_description  PRODUCT\_MINIMUM\_SALE\_PRICE\_minPrice  PRODUCT\_PRODUCT\_LINE\_code  PRODUCT\_PRODUCT\_LINE\_code\_en |

| **Order\_details** |
| --- |
| ORDER\_DETAILS\_code  ORDER\_DETAILS\_ORDER\_NUMBER\_order  ORDER\_DETAILS\_PRODUCT\_NUMBER\_product  ORDER\_DETAILS\_QUANTITY\_quantity  ORDER\_DETAILS\_TOTAL\_COST\_total  ORDER\_DETAILS\_TOTAL\_MARGIN\_margin  ORDER\_DETAILS\_RETURN\_CODE\_returned  ORDER\_DETAILS\_UNIT\_ID\_unit |

| **SALES\_TARGETData** |
| --- |
| SALES\_TARGETDATA\_id  SALES\_TARGETDATA\_SALES\_YEAR  SALES\_TARGETDATA\_SALES\_PERIOD  SALES\_TARGETDATA\_RETAILER\_NAME  SALES\_TARGETDATA\_SALES\_TARGET  SALES\_TARGETDATA\_TARGET\_COST  SALES\_TARGETDATA\_TARGET\_MARGIN  SALES\_TARGETDATA\_SALES\_STAFF\_CODE  SALES\_TARGETDATA\_PRODUCT\_NUMBER  SALES\_TARGETDATA\_RETAILER\_CODE |

| **Training** |
| --- |
| TRAINING\_SALES\_STAFF\_CODE  TRAINING\_COURSE\_CODE  TRAINING\_YEAR |

| **Satisfaction** |
| --- |
| SATISFACTION\_SALES\_STAFF\_CODE  SATISFACTION\_SATISFACTION\_TYPE\_CODE  SATISFACTION\_YEAR |

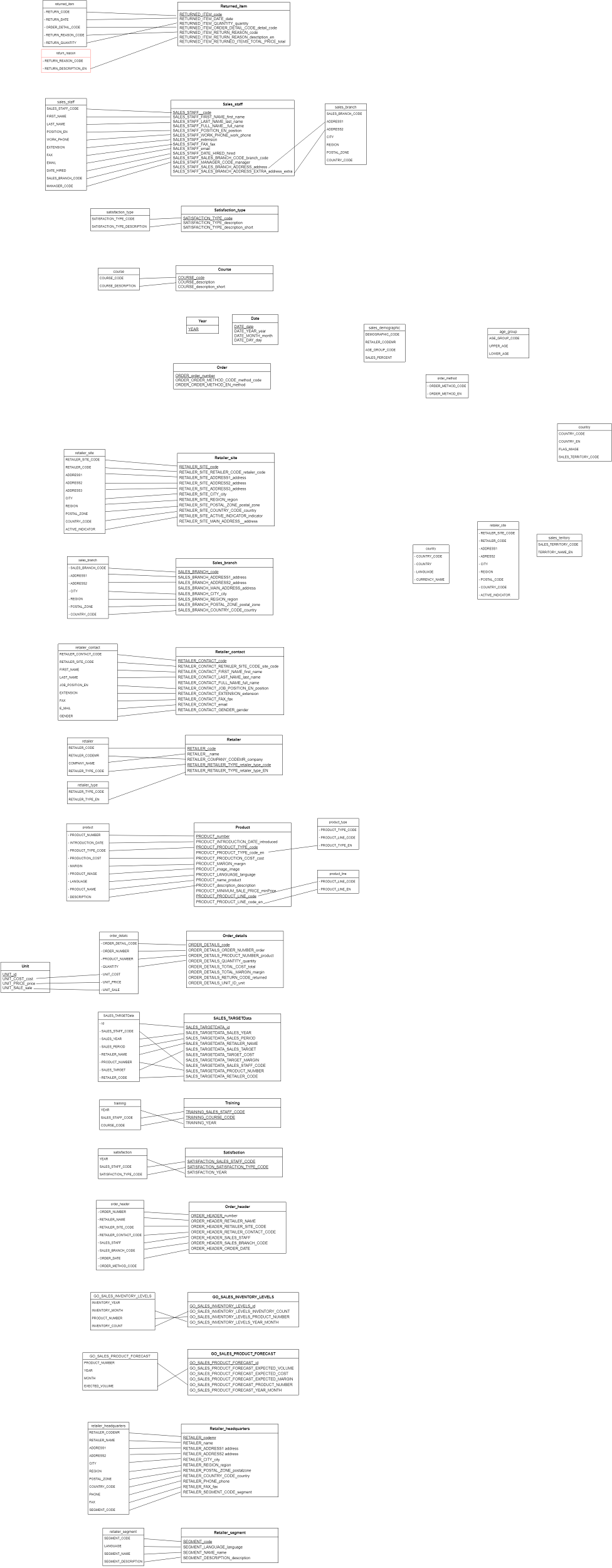
| **Order\_header** |
| --- |
| ORDER\_HEADER\_number  ORDER\_HEADER\_RETAILER\_NAME  ORDER\_HEADER\_RETAILER\_SITE\_CODE  ORDER\_HEADER\_RETAILER\_CONTACT\_CODE  ORDER\_HEADER\_SALES\_STAFF  ORDER\_HEADER\_SALES\_BRANCH\_CODE  ORDER\_HEADER\_ORDER\_DATE |

| **GO\_SALES\_INVENTORY\_LEVELS** |
| --- |
| GO\_SALES\_INVENTORY\_LEVELS\_id  GO\_SALES\_INVENTORY\_LEVELS\_INVENTORY\_COUNT  GO\_SALES\_INVENTORY\_LEVELS\_PRODUCT\_NUMBER  GO\_SALES\_INVENTORY\_LEVELS\_YEAR\_MONTH |

| **GO\_SALES\_PRODUCT\_FORECAST** |
| --- |
| GO\_SALES\_PRODUCT\_FORECAST\_id  GO\_SALES\_PRODUCT\_FORECAST\_EXPECTED\_VOLUME  GO\_SALES\_PRODUCT\_FORECAST\_EXPECTED\_COST  GO\_SALES\_PRODUCT\_FORECAST\_EXPECTED\_MARGIN  GO\_SALES\_PRODUCT\_FORECAST\_PRODUCT\_NUMBER GO\_SALES\_PRODUCT\_FORECAST\_YEAR\_MONTH |

| **Retailer\_headquarters** |
| --- |
| RETAILER\_codemr  RETAILER\_name  RETAILER\_ADDRESS1 address  RETAILER\_ADDRESS2 address  RETAILER\_CITY\_city  RETAILER\_REGION\_region RETAILER\_POSTAL\_ZONE\_postalzone  RETAILER\_COUNTRY\_CODE\_country  RETAILER\_PHONE\_phone RETAILER\_FAX\_fax RETAILER\_SEGMENT\_CODE\_segment |

| **Retailer\_segment** |
| --- |
| SEGMENT\_code  SEGMENT\_LANGUAGE\_language  SEGMENT\_NAME\_name  SEGMENT\_DESCRIPTION\_description |

[](https://app.diagrams.net/?page-id=G1GNlizRW6fp0WgC6aS4&scale=auto#G1PZEfwaI_qT_g_W1ekZrJiM0-iGgiBz2A)