Documentation Pandora ERP system.
1. Stock and inventory control.

Description operation article table.

```
bisystem=# \d artikelen
                                  Table "public.artikelen"
      Column        |         Type          | Collation | Nullable |                Default
--------------------+-----------------------+-----------+----------+---------------------------------------
 artikelID          | integer               |           | not null |
 artikelomschrijving | character varying(50) |           | not null |
 artikelprijs       | double precision      |           |          | 0.00
 art_voorraad       | double precision      |           |          | 0.00
 art_eenheid        | character varying(6)  |           |          |
 art_min_voorraad   | double precision      |           |          | 0.00
 art_bestelgrootte  | double precision      |           |          | 0.00
 locatie_magazijn   | character varying(8)  |           |          |
 artikelgroep       | character varying(40) |           |          | ''::character varying
 barcode            | integer               |           |          | 0
 thumb_artikel      | character varying(70) |           |          | './images/thumbs/'::character varying
 foto_artikel       | character varying(70) |           |          | './images/'::character varying
 categorie          | integer               |           |          |
 reserveringsaldo   | double precision      |           |          | 0
 afmeting           | character varying(30) |           |          | ''::character varying
 bestelstatus       | boolean               |           |          | true
 mutatiedatum       | character varying(10) |           |          | ''::character varying
 bestelsaldo        | double precision      |           |          | 0
 jaarverbruik_1     | double precision      |           |          | 0
 jaarverbruik_2     | double precision      |           |          | 0
Indexes:
    "artikelen_pkey" PRIMARY KEY, btree ("artikelID")
Check constraints:
    "art_voorraad" CHECK (art_voorraad >= 0::double precision)
Referenced by:
    TABLE "webbestellingen" CONSTRAINT "artikelID_fkey" FOREIGN KEY ("artikelID") REFERENCES artikelen("artikelID")
    TABLE "artikelmutaties" CONSTRAINT "artikel_artikelID_fkey" FOREIGN KEY ("artikelID") REFERENCES artikelen("artikelID")
    TABLE "materiaallijsten" CONSTRAINT "artikelen.artikelID_fkey" FOREIGN KEY ("artikelID") REFERENCES artikelen("artikelID")
    TABLE "orders_verkoop_artikelen" CONSTRAINT "artikelen_artikelID_fkey" FOREIGN KEY ("artikelID") REFERENCES artikelen("artikelID")

    TABLE "orders_inkoop_artikelen" CONSTRAINT "artikelen_artikelID_fkey" FOREIGN KEY ("artikelID") REFERENCES artikelen("artikelID")
    TABLE "cluster_artikelen" CONSTRAINT "artikelen_artikelID_fkey" FOREIGN KEY ("artikelID") REFERENCES artikelen("artikelID")
    TABLE "icluster_artikelen" CONSTRAINT "artikelen_artikelID_fkey" FOREIGN KEY ("artikelID") REFERENCES artikelen("artikelID")
    TABLE "orders_intern" CONSTRAINT "artikelen_artikelID_fkey" FOREIGN KEY ("artikelID") REFERENCES artikelen("artikelID")
```

Above a screenshot of the table with its connections with other tables.

We won't go deeper in the normal fields, for I assume this is common knowledge.
The fields an its purpose we explain are:
art_min_voorraad
art_bestelgrootte
categorie
reserververingsaldo
bestelsaldo
bestelstatus
mutatiedatum
jaarverbruik_1
jaarverbruik_2
This fields are used for inventory control.

art_min_voorraad:
When this article is driven by minimum stock and not reservation, which is determined by the field categorie, the article must be ordered when stock becomes lower then this value.
The minimum stock is calculated by annual consumption and the category (field categorie), by which the number of delivery times per year is determined.

art_bestelgrootte:
This value is determined by the Camp formula, that recognize the order size based on annual comsumption. See the explanation of annual consumption by
jaarverbruik_1 and jaarverbruik_2. Camp formula: $Q = \sqrt{2DF/HP}$
Stands for:

Q = Quantity

- D = Demand / year
- F = Fixed Costs (order costs conversion costs)
- H = Stock costs as a percentage of the price
- P = Price of the product

The orders are made with the program voorraadbeheersing and the table materiaallijsten,

here is the Camp formula used for ordering by reservations.

By starting Pandora.py the first time after Januari 1st, the minimum stock and order size is determined for all articles and stored in the database. Thurdermore see other purposes of Panora.py at reserveringsaldo and bestelsaldo.

reserveringsaldo and bestelsaldo

Products are ordered direct online or through article lists of clustercalculaties or iclustercalculaties.

If an order is ordered online, the products are added in the column reservations, and reduced when the product is picked.

If an clustercalculatie or iclustercalculatie is continued as a werknummer or a werkorder the articles

from the article list are added in the column reservations.

The total sum of the articles is added on werken table field begr_materialen.

OR

The value of the delivered articles is added on table orders_intern field werk_materialen.

Also the products and their values are added in a table materiaallijsten with the amount of reservation, reservation data, bestelstatus and bestelsaldo. With this table the orders are made. When the order is made the bestelsaldo is added and the bestelstatus is blocked until delivery and approval is done.

When the products are delivered and approved the bestelsaldo is reduced and the bestelstatus is unblocked. Also the stock is added.

When the products are provided the column reservations is reduced. The stock (voorrraad) is also reduced.

The value of the delivered articles is added on table werken field kosten_materialen

OR

The value of the delivered articles is added on table orders_intern field werk_materialen.

The edited articles with values are added on a table artikelmutaties for accountancy and paying taxes.

All stock values are added or deducted in the column jaarverbruik_1 or jaarverbruik_2

Even years jaarverbruik_2 odd years jaarverbruik_1, so always a year-consumption is available.

After a year has passed fields of a year agoo are set to 0, so that the countings start from scratch.

In Pandora.py is this organized. Also in this module the monthly values of the stock are counted,

and is determined (with the mutatiedatum – last mutation) or the mutatiedatum is longer then a year agoo. Then it is called dead stock (incourant in Dutch).

With this items graphs are produced.

The data is stored in the table magazijnvoorraad (warehouse stock).

Addition:

In the table artikelen is a column barcode, this column could be used as fields with ean 13 barcode numbers. This could be extended with the python-barcode module to work with a scanner.