

Programming Project: Krusty Cookies

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Introduction

Requirements

Even though the requirements were a bit diffuse (as intended) we are fairly confident that we have met all of them.

Outline of the System

E/R Diagram

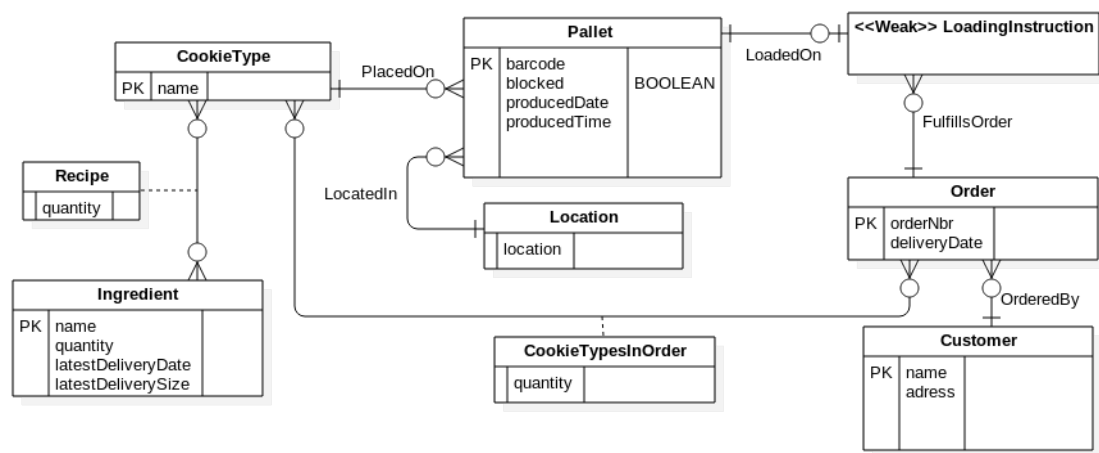


Figure 1: E/R-diagram for the system

Relations

The following relations were the basis for creating the database:

```
CookieTypes(_name_);
(Primary key: name)
```

```
Ingredients(_name_, quantity, latestDeliveryDate,
  latestDeliverySize);
(Primary key: name)
```

```
Customers(_name_, address);
```

```
(Primary key: name)

Orders(_orderNbr_, deliveryDate, ~customerName~);
(Primary key: orderNbr. Foreign key: customerName)

Locations(_location_);
(Primary key: location)

Pallets(_barcode_, ~location~, blocked, producedDate, producedTime,
        ~cookieName~);
(Primary key: barcode. Foreign keys: location, cookieName)

Recipes(~cookieName~, ~ingredientName~, quantity);
(Primary keys: cookieName, ingredientName.
  Foreign keys: cookieName, ingredientName)

CookieTypesInOrders(~cookieName~, ~orderNbr~, quantity);
(Primary keys: cookieName, orderNbr.
  Foreign keys: cookieName, orderNbr)

LoadingInstructions(~orderNbr~, ~barcode~);
(Primary key: barcode. Foreign keys: orderNbr, barcode)
```

SQL Statements

The following SQL statements were used to create the database:

```
-- Delete the old tables
set foreign_key_checks = 0;
drop table if exists Pallets;
drop table if exists Locations;
drop table if exists CookieTypes;
drop table if exists Recipes;
drop table if exists Ingredients;
drop table if exists CookieTypesInOrders;
drop table if exists LoadingInstructions;
drop table if exists Orders;
drop table if exists Customers;
set foreign_key_checks = 1;

-- Create the new tables
create table CookieTypes (
  name          varchar(64),
```

```
    primary key (name)
);

create table Ingredients (
    name          varchar(64),
    quantity      integer check (quantity >= 0),
    latestDeliveryDate date,
    latestDeliverySize integer,
    primary key (name)
);

create table Customers (
    name          varchar(128),
    address       varchar(256),
    primary key (name)
);

create table Orders (
    orderNbr      integer auto_increment,
    deliveryDate  date,
    customerName  varchar(128),
    primary key (orderNbr),
    foreign key (customerName) references Customers(name)
);

create table Locations (
    location      varchar(32),
    primary key (location)
);

create table Pallets (
    barcode       integer auto_increment,
    location      varchar(32) default 'Freezer',
    blocked       boolean default 0,
    producedDate  date,
    producedTime  time,
    cookieName    varchar(64),
    primary key (barcode),
    foreign key (cookieName) references CookieTypes(name),
    foreign key (location) references Locations(location)
);

create table Recipes (
    cookieName    varchar(64),
```

```
ingredientName  varchar(64),
quantity        integer check (quantity >= 0),
primary key (cookieName, ingredientName),
foreign key (cookieName) references CookieTypes(name),
foreign key (ingredientName) references Ingredients(name)
);

create table CookieTypesInOrders (
  cookieName  varchar(64),
  orderNbr    integer,
  quantity    integer check (quantity >= 0),
  primary key (cookieName, orderNbr),
  foreign key (cookieName) references CookieTypes(name),
  foreign key (orderNbr) references Orders(orderNbr)
);

create table LoadingInstructions (
  orderNbr  integer,
  barcode   integer,
  primary key (barcode),
  foreign key (orderNbr) references Orders(orderNbr),
  foreign key (barcode) references Pallets(barcode)
);
```

User's manual

We consider the system self-explanatory enough not to require an user manual. The system has, in fact, been tested on a med-student with great success. The only things worth pointing out are that:

1. This thing
2. This thing
3. And this thing