Final Project

Coffee SHop database

Joseph Slattery – it2351[82166] – professor tamerlan0

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# Business Statement

As per the request of ‘Common Grounds Coffee’, a database has been created to provide your business with the resources to:

* **Track your customers**
* **Track your sales**
* **Track your products**
* **Track your ingredients**

Attached is a list of tables and the fields contained in each. An Enhanced Entity Relationship Diagram gives a visual representation of these tables and fields, and how they are linked to one another. Screenshots of the tables’ fields and sample data are also included.

The Database stores your customers’ contact information and gives each customer an ID number, which is used to correlate each order to the appropriate customer. The orders are given an ID and contain the date the order was placed as well as the date the order was filled Each order record contains the billing totals and billing details. Each order’s ID links it to a table that breaks down which items are in the order, and the quantity and price of the item. This is done by tracking the products’ ID numbers, which link to a table of products containing the products’ descriptions and a code for the ingredient category they belong to. Each product’s main ingredient is given an ingredient ID that correlates to the category and is used to link the ingredients to their associated vendors. Each vendor is listed in a table with their unique ID and contact/billing information, and their ID links them to the table of stored invoices. All invoice records have a unique ID, as well as totals, due dates, date paid, payment amount, and the terms for payment.

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# Database Field List

**Customers**

The Customers Table is designed to track customers as unique entities and will automatically assign a customer ID to each entry. Each customer entry contains the generated ID, a company name, street address, state, and email address.

**Orders**

The Orders Table tracks customers’ orders by generating an automatically assigned order number for each order, and each order contains a reference to a customer ID. Each entry has an order date, a filled date, a subtotal, a tax amount, and an order total. The billing details are stored as the card number and card expiry date.

**Order Items**

The Order Items Table creates a unique ID for each line item and correlates that to an order ID. The product ID, item price, and quantity are for each line item are found here.

**Products**

The Products Table generates a unique product ID for each product the company offers, and each product has a name as well as a product category ID for connecting products to their ingredients, and ultimately to vendors.

**Product Ingredients**

The Product Ingredients Table correlates each ingredient to their products via a product category code. Each ingredient has its own ingredient ID, which connects to the ingredients table.

**Ingredients**

The Ingredients Table connects the unique ingredient ID to its associated vendor ID and contains a description for the ingredient.

**Vendors**

The vendors table generates a unique ID for each vendor, and contains their name, address information, phone number, and email.

**Invoices**

The invoices table contains the invoice ID, the associated vendor ID, as well as the invoice total, date, payments, payment dates, and payment terms.

# EER Diagram

Diagram

Description automatically generated

# Table Screenshots

Graphical user interface, application, table, Excel

Description automatically generated

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# Accounting View

At the request of Jake in accounting, a view has been created which will find in the invoice data all invoice records which have outstanding balances. This view displays the invoice ID, the invoice date, payment terms and calculated due date, any balance due that is greater than zero based on the invoice total and previous partial payments, as well as the payment date and vendor contact information.

# Triggers & Stored Procedures

Some useful triggers to be added to ensure that data entered into the order totals is equal to the sum of the order subtotal and the order tax, as well as to validate that the subtotal is equal to the product of the item price and quantity ordered.

# Database Administration

As the database grows, annual or semi-annual events to create archived tables and remove old transaction data should be considered to improve performance. Also, the current design of the invoices table numbers the invoices in order, and maybe should keep that functionality, but may also be expanded to include a field that documents the invoicing company’s code for that invoice to improve searchability.

As it stands now, the product ingredients table just serves as a linking table to tie the products to their vendors. Improving upon the relationship between the products and ingredients tables with a better account of all included ingredients and their portions could provide the ability to create views of yields and margins.

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# Conclusion

I envisioned this database as a way to store information for larger-scale catering orders a coffee shop may seek out to expand their business by providing coffee service to local businesses for in-office consumption during meetings or special events. Tracking daily small coffee purchases and individual customers in this way, without the use of some kind of POS system and its reporting capabilities just didn’t make sense. If this business also included a sit-down coffee shop as the details for the assignment imply, including daily retail sales as entries in the orders table would be fairly simple and would allow for complete sales tracking. The product mix reports from the POS would simplify cost analysis after my recommended improvements to the relationship between the products and ingredients tables.

This database was created without any real-world data or any input from people who might be using it. As a result, I see it as incomplete. I tried to create normalized tables that correctly compartmentalized the data and limited redundancy and room for error, but without understanding how data will be entered or retrieved from the database (i.e. – POS interface, custom app, accounting software), or what the end users’ needs are, this is just an approximation of what the database will ultimately be.

Nevertheless, with the data properly organized and normalized, any system or app that is written or configured to interface with it will be able to pull meaningful information out of it as stored procedures and functions are tailored to the business’ needs.