Abe Doughty

Final Project Write-Up

Database Systems

Fall 2023

**Description of Application:**

I decided to implement a rudimentary point-of-sale/inventory management system that could be used in a restaurant setting. The system is built on a database of four tables (dishes, ingredients, orders, dish\_ingredients). The following user actions are built-in to the functionality:

* Open Menu
* Place Order
* Look up recent orders
* Update Prices
* Add menu item
* Remove menu item
* List inventory (ingredients in stock)
* List suppliers
* List low ingredients (items that need to be ordered soon)
* Order ingredients
* List best selling items
* List best customers (by different metrics)
* List highest profit items
* List most popular items
* Plot sales data
* Plot menu data

I have implemented these built in queries so that the app is user friendly for those who are unfamiliar with SQLite. However, there is a (input validated) custom query menu where users may build their own SQLite queries if they decide that they are interested in some data that has not been made available through the UI.

**NOTE:** I had my heart set on this application but obviously I had to make a bunch of custom data. I used chatGPT to generate the ‘orders’ table based on the schema I gave it. I could have done this myself but I wanted to have a substantial number of orders so that I could make more meaningful queries and filling in 70 orders manually would have been a huge chore. I figured that this was an acceptable use of chatGPT. I created the other tables manually. I also changed all the customer names it generated because they were boring.

**Team Members:**

Just me

**E-R Diagram:**

**A diagram of a process

Description automatically generated**

**Relational Model:**

**DISH**

|  |  |  |
| --- | --- | --- |
| dish\_name | price | profit\_margin |
| Caesar Salad | 8.99 | 0.8 |
| **…** | **…** | **…** |

**INGREDIENT**

|  |  |  |  |
| --- | --- | --- | --- |
| ingredient\_name | price\_per\_pound | supplier | amount\_on\_hand |
| Romaine Lettuce | 1.50 | Veggie Force | 15 |
| Parmesan | 4.5 | Dairy Dan | 8.5 |
| **…** | **…** | **…** | **…** |

**ORDER**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| order\_id | customer\_name | dish\_name | total\_price | date |
| 10 | Fred Flintstone | Caesar Salad | 8.99 | 2023-01-11 |
| **…** | **…** | **…** | **…** | **…** |

**DISH\_INGREDIENT**

|  |  |
| --- | --- |
| dish\_name | ingredient\_name |
| Caesar Salad | Romaine Lettuce |
| Caesar Salad | Parmesan |
| **…** | **…** |

DISH\_INGREDIENT exists because Dishes have varying amounts of ingredients, so I needed a different way to store the data than keeping ingredients in Dish fields.