ISDS 555, Spring 2024, CSUF
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ISDS 555 Project Report

Team:Team B **Date:** May 6th, 2024

Tentative Project Name: GreenLeaf Nourish Experts Database

Abstract: GreenLeafNourish, a thriving vegan fast food startup, has relied on antiquated Excel-based reporting methods for managing vital data such as inventory, customer information, invoices, and revenues. However, the inherent limitations of Excel, including challenges in modifying records and susceptibility to errors, have impeded business operations. Responding to the owner's call for digital modernization, our team has devised a comprehensive proposal, created an entity relationship diagram, finalized an SQL script to establish a robust database system and finally used Tableau to provide a dashboard. This digital transformation aims to address the shortcomings of Excel, offering enhanced efficiency and accuracy in data management. Through this initiative, GreenLeafNourish seeks to position itself for sustained success in the competitive fast food industry while maintaining its commitment to providing healthy, vegan cuisine.

Justification or Reason for the Project:

GreenLeafNourish is a vegan style fast food restaurant. It’s a startup that was founded a couple of years ago. With healthy and tasty recipes to customer service, the restaurant was growing rapidly. This startup has been using a traditional reporting style for maintaining its data. The traditional way includes Excel files to store information pertaining to the restaurant which includes inventory, customers, invoices, revenues, etc. There is only one problem with using Excel that is modification problems which means deleting, inserting, and updating records can be difficult and often prone to error. Modifying one cell can often misrepresent the other cell which later becomes a huge problem in the business.

We would like to introduce a digital transformation as in a Database system upon the request of the owner. According to an article from the chemical engineering department, it says that “People have been doing it for years using spreadsheets or standard historian-type software. What is different is that today's data analytics software solutions apply meaning to data, focus on key process indicators and encourage processors to use the data to find potentially impactful situations in advance” (LePree, 2023). Our project is to convert these manual files into an organized database. This Database has four components such as users, database applications, database management system and the database. DBMS has special tools like MySQL to manage the company’s database. These tools have functions like create tables, modify data, enforce rules, provide security and recovery which makes data transformation for the business more efficient and effective. Later on, we can use visualization tools such as Tableau to provide dashboards which provide a visual snapshot about the company.

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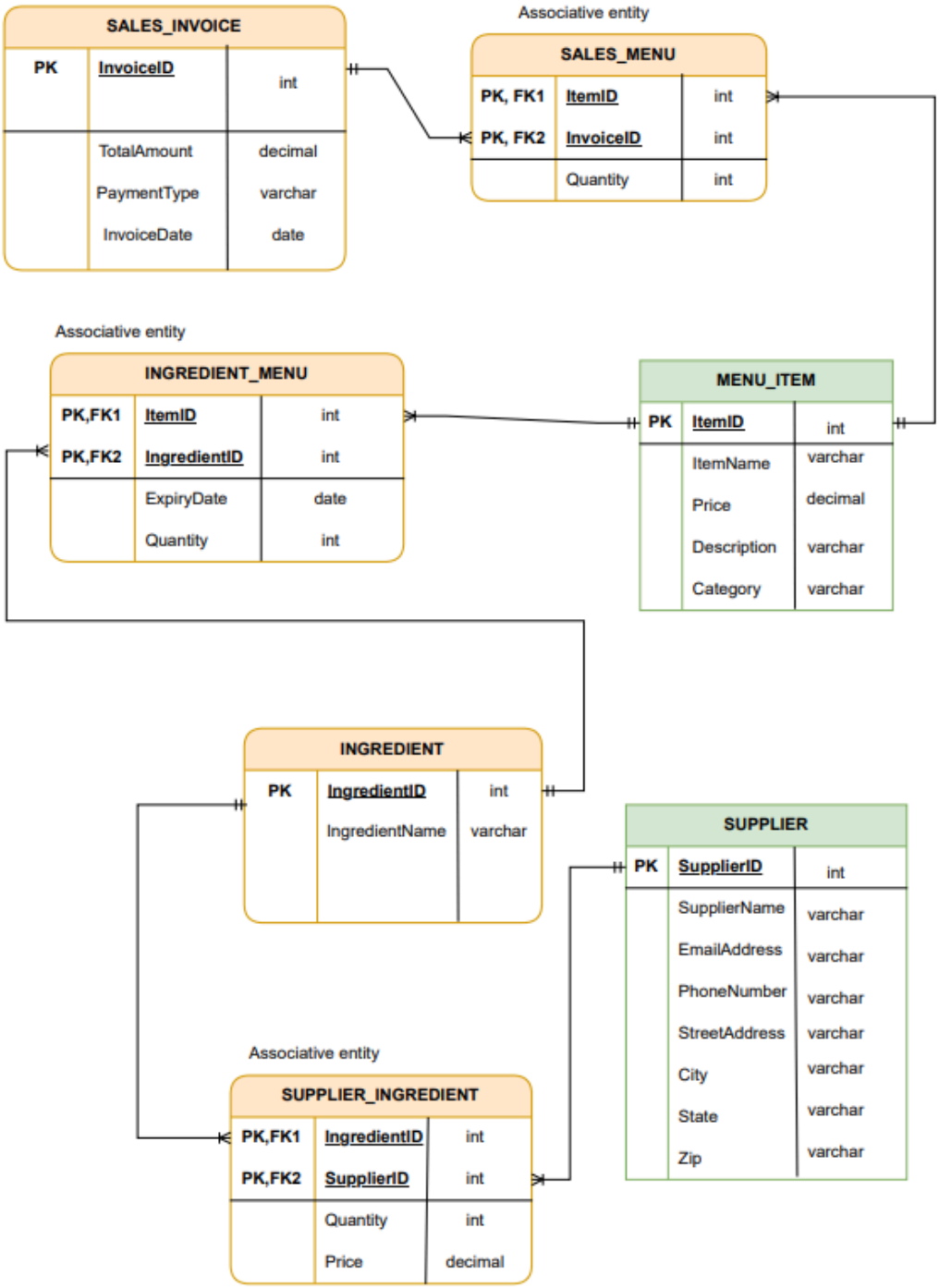
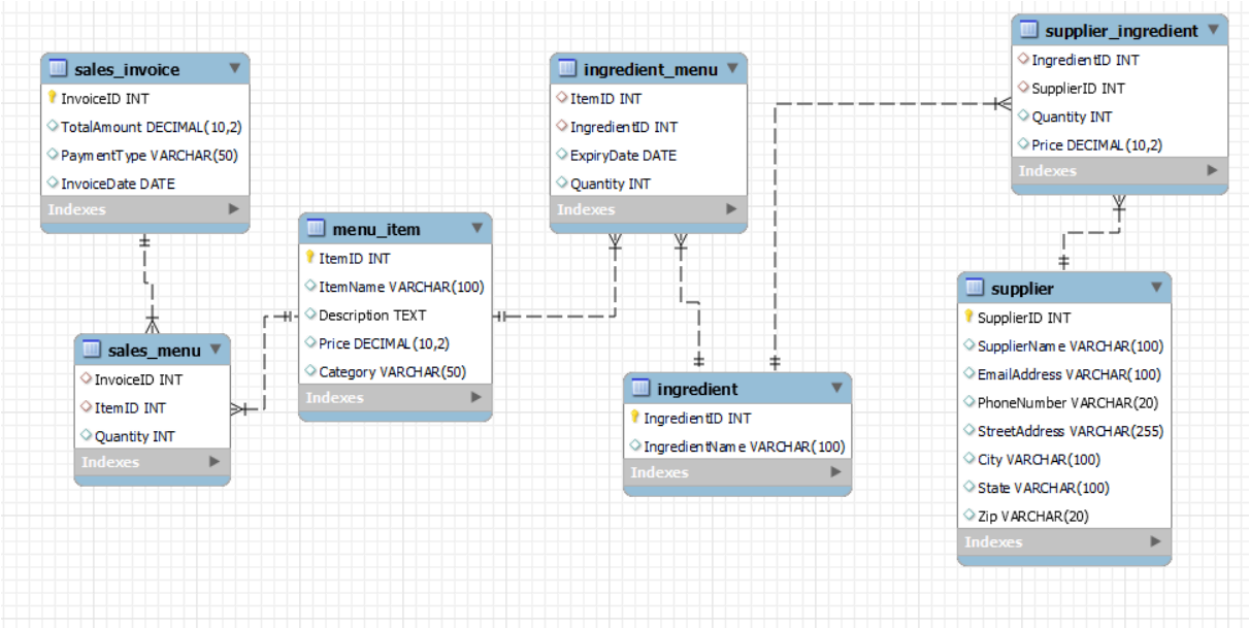
Updated Business Entities with attributes:

Name of entity	Description	PK: indicate Y or N	FKs: Indicate Y and the related entity	Related entities	Candidate fields with indexes
SALES_INVOICE	Invoice order of the items ordered	Yes	No	SALES_MENU	InvoiceID (int), TotalAmount (decimal), PaymentType (varchar), InvoiceDate (date)
MENU_ITEM	The menu items of the restaurant	Yes	No	SALES_MENU INGREDIENT_MENU	ItemID (int), ItemName, Description (varchar), Price(decimal), Category (varchar)
SALES_MENU	Associative entity between sales and menu	No	*Yes InvoiceID, ItemID*	SALES_INVOICE MENU_ITEM	*InvoiceID (int)*, *ItemID (int)*, Quantity (int)
INGREDIENT	Ingredients used in making the menu items	Yes	No	INGREDIENT_MENU SUPPLIER_INGREDIENT	IngredientID (int), IngredientName (varchar)
INGREDIENT_MENU	Associative entity	No	*Yes, ItemID, IngredientID*	MENU_ITEM INGREDIENT	*ItemID (int), IngredientID (int)*, ExpiryDate (date), Quantity(int)
SUPPLIER	Supplier supply the ingredients which are then used to make menu items	Yes	No	SUPPLIER_INGREDIENT	SupplierID (int), SupplierName (varchar), EmailAddress (varchar), PhoneNumber (varchar), StreetAddress (varchar), City (varchar), State (varchar), Zip (varchar)
SUPPLIER_INGREDIENT	Associative entity	No	*Yes, IngredientID, SupplierID*	INGREDIENT, SUPPLIER	*IngredientID (int)*, *SupplierID (int)*, Quantity (int), Price (decimal)

Updated Entity Relation Diagram (ERD):



SCREENSHOT OF DATABASE SCHEMA: EER Diagram
Yellow Key: PK
Pink Diamond: FK



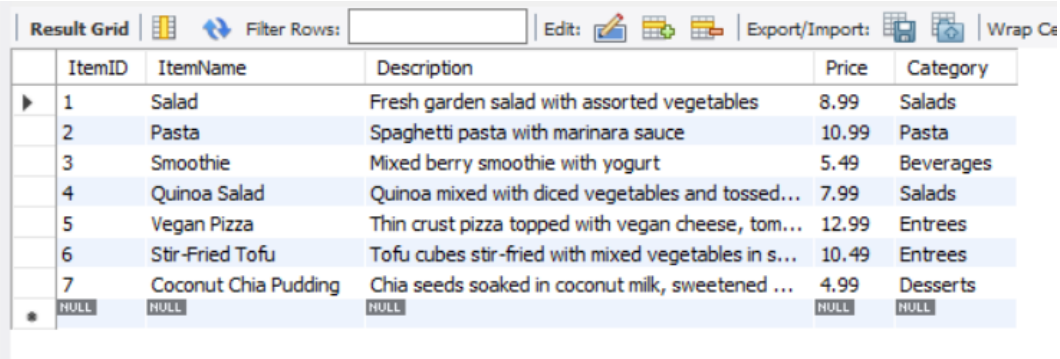
SCREENSHOTS OF THE TABLES WITH MOCK-UP DATA:

1) **SALES_INVOICE**

Result Grid | Filter Rows: | Edit:

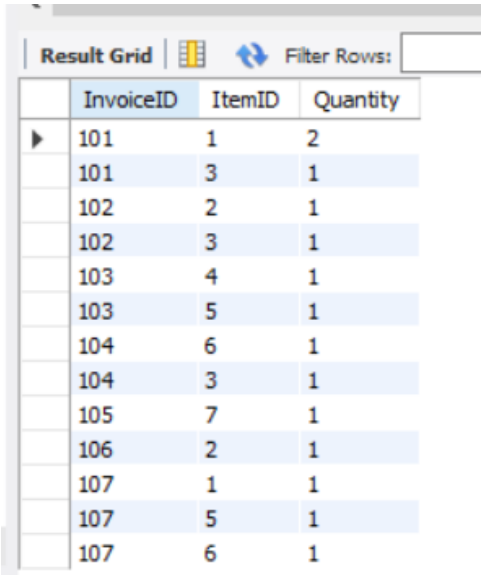
InvoiceID	TotalAmount	PaymentType	InvoiceDate
101	25.47	Cash	2024-04-25
102	16.47	Credit Card	2024-04-25
103	24.96	Cash	2024-04-26
104	19.48	Credit Card	2024-04-26
105	14.98	Cash	2024-04-27
106	32.47	Credit Card	2024-04-27
107	22.45	Cash	2024-04-28
NULL	NULL	NULL	NULL

2) MENU_ITEM



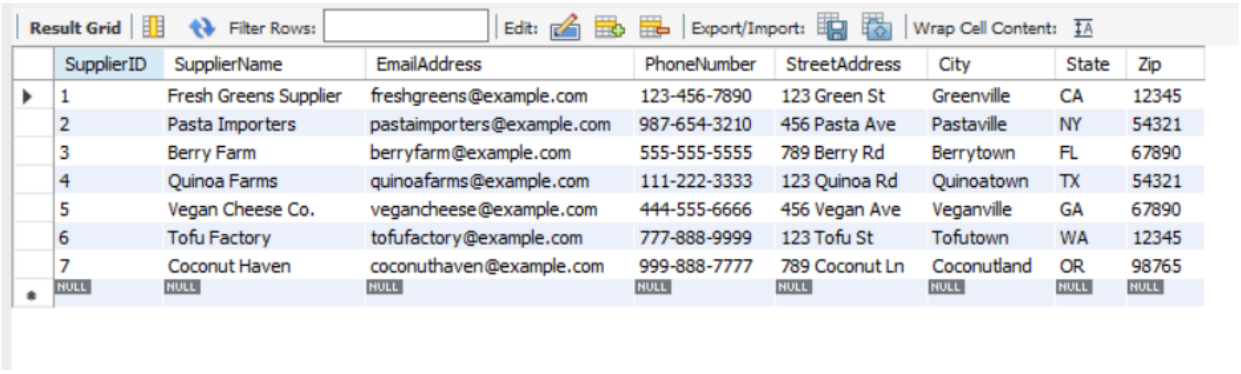
ItemID	ItemName	Description	Price	Category
1	Salad	Fresh garden salad with assorted vegetables	8.99	Salads
2	Pasta	Spaghetti pasta with marinara sauce	10.99	Pasta
3	Smoothie	Mixed berry smoothie with yogurt	5.49	Beverages
4	Quinoa Salad	Quinoa mixed with diced vegetables and tossed...	7.99	Salads
5	Vegan Pizza	Thin crust pizza topped with vegan cheese, tom...	12.99	Entrees
6	Stir-Fried Tofu	Tofu cubes stir-fried with mixed vegetables in s...	10.49	Entrees
7	Coconut Chia Pudding	Chia seeds soaked in coconut milk, sweetened ...	4.99	Desserts
NULL	NULL	NULL	NULL	NULL

3) SALES_MENU



InvoiceID	ItemID	Quantity
101	1	2
101	3	1
102	2	1
102	3	1
103	4	1
103	5	1
104	6	1
104	3	1
105	7	1
106	2	1
107	1	1
107	5	1
107	6	1

4) SUPPLIER



SupplierID	SupplierName	EmailAddress	PhoneNumber	StreetAddress	City	State	Zip
1	Fresh Greens Supplier	freshgreens@example.com	123-456-7890	123 Green St	Greenville	CA	12345
2	Pasta Importers	pastaimporters@example.com	987-654-3210	456 Pasta Ave	Pastaville	NY	54321
3	Berry Farm	berryfarm@example.com	555-555-5555	789 Berry Rd	Berrytown	FL	67890
4	Quinoa Farms	quinoafarms@example.com	111-222-3333	123 Quinoa Rd	Quinoatown	TX	54321
5	Vegan Cheese Co.	vegancheese@example.com	444-555-6666	456 Vegan Ave	Veganville	GA	67890
6	Tofu Factory	tofufactory@example.com	777-888-9999	123 Tofu St	Tofutown	WA	12345
7	Coconut Haven	coconuthaven@example.com	999-888-7777	789 Coconut Ln	Coconutland	OR	98765
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

5) INGREDIENT

Result Grid | Filter Rows:

IngredientID	IngredientName
1	Lettuce
2	Tomato
3	Cucumber
4	Spaghetti
5	Marinara Sauce
6	Mixed Berries
7	Yogurt
8	Quinoa
9	Lemon
10	Vegan Cheese
11	Tofu
12	Mixed Vegetables
13	Soy Sauce
14	Rice
15	Coconut Milk
16	Agave Nectar
NULL	NULL

6) SUPPLIER_INGREDIENT

Result Grid | Filter Rows: | Exp

IngredientID	SupplierID	Quantity	Price
1	1	100	5.00
2	1	100	3.00
3	1	50	2.50
4	2	200	10.00
5	2	150	8.00
6	3	100	4.00
7	3	100	3.50
8	4	100	4.50
9	4	50	3.00
10	5	100	6.00
11	6	200	5.00
12	6	150	4.00
13	6	100	2.50
14	7	200	3.00
15	7	100	3.50
16	7	100	2.00

7) INGREDIENT_MENU

Result Grid | Filter Rows:

ItemID	IngredientID	ExpiryDate	Quantity
1	1	2024-05-01	1
1	2	2024-05-01	1
1	3	2024-05-01	1
2	4	2024-06-01	1
2	5	2024-06-01	1
3	6	2024-05-15	1
3	7	2024-05-15	1
4	8	2024-05-10	1
4	9	2024-05-10	1
4	12	2024-05-10	1
5	10	2024-06-01	1
5	12	2024-06-01	1
5	14	2024-06-01	1
6	11	2024-05-15	1
6	12	2024-05-15	1
6	13	2024-05-15	1
6	14	2024-05-15	1
7	15	2024-05-01	1
7	16	2024-05-01	1

Citations

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