



CAPSTONE PROJECT 2
CMU-SE 451/CMU-IS 451

DATABASE DESIGN DOCUMENT

Recommendation In Restaurant

Version 1.0

Date: 27/02/2024

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Database Design Document

Document Title	Database Design		
Reporting Period	February 2024		
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Date	27/02/2024	Filename	Database_Design_v1.0
URL			
Access	Project and CMU Program		

Document History			
Version	Date	Description of Changes	Author
v1.0	27/02/2024	Draft for comment	All members

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1. Project Overview

Table 1. *Project Overview*

Project acronym	RIR		
Project Title	Recommendation In Restaurant		
Start Date	15/02/2024	End Date	15/05/2024
Lead Institution	International School, Duy Tan University		
Project Mentor	Trinh Tran Thi Thuy, PhD.		
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2. Introduction

2.1 Purpose

Place information system's database design document describes the structure of the database and file structure of the system. Database Design document will introduce all attributes of the System that will help developer and tester base on this design to implement and test.

2.2 Goal

To create database tables most accurate.

2.3 Scope

This Database Design Document provides the basis for "RIR" Database design. It describes both logical and physical definition, non-functional issues, and the database interfaces; storage aspects are defined in the physical database design sections.

The tables performance considerations requirements. The following topics are covered in this document:

- Assumptions and decisions on database design.
- Entity-mapping.
- Table column definitions.
- Primary, unique and foreign key definitions.
- Column and row level validation rules (check constraints).
- Rule for populating specific columns (sequences, derivations, demoralized (column)).
- Interfaces and dependencies with other components.
- Data access description.

The database design is composed of definitions for database objects derived by mapping entities to tables attributes to columns, unique identifiers to unique keys and relationships to foreign keys.

During design, these initial definitions are enhanced to support the functionality described in the functional specification/ user stories and defined in the primary and supporting modules of the application high level design.

2.4 Data Storage Platforms

- Data of the website is stored in MySQL database.

- In MySQL, data structure is stored as tables that the database objects that behave as containers for the data, in which the data will be logically organized in rows and columns format.

3. Database Design & ERD

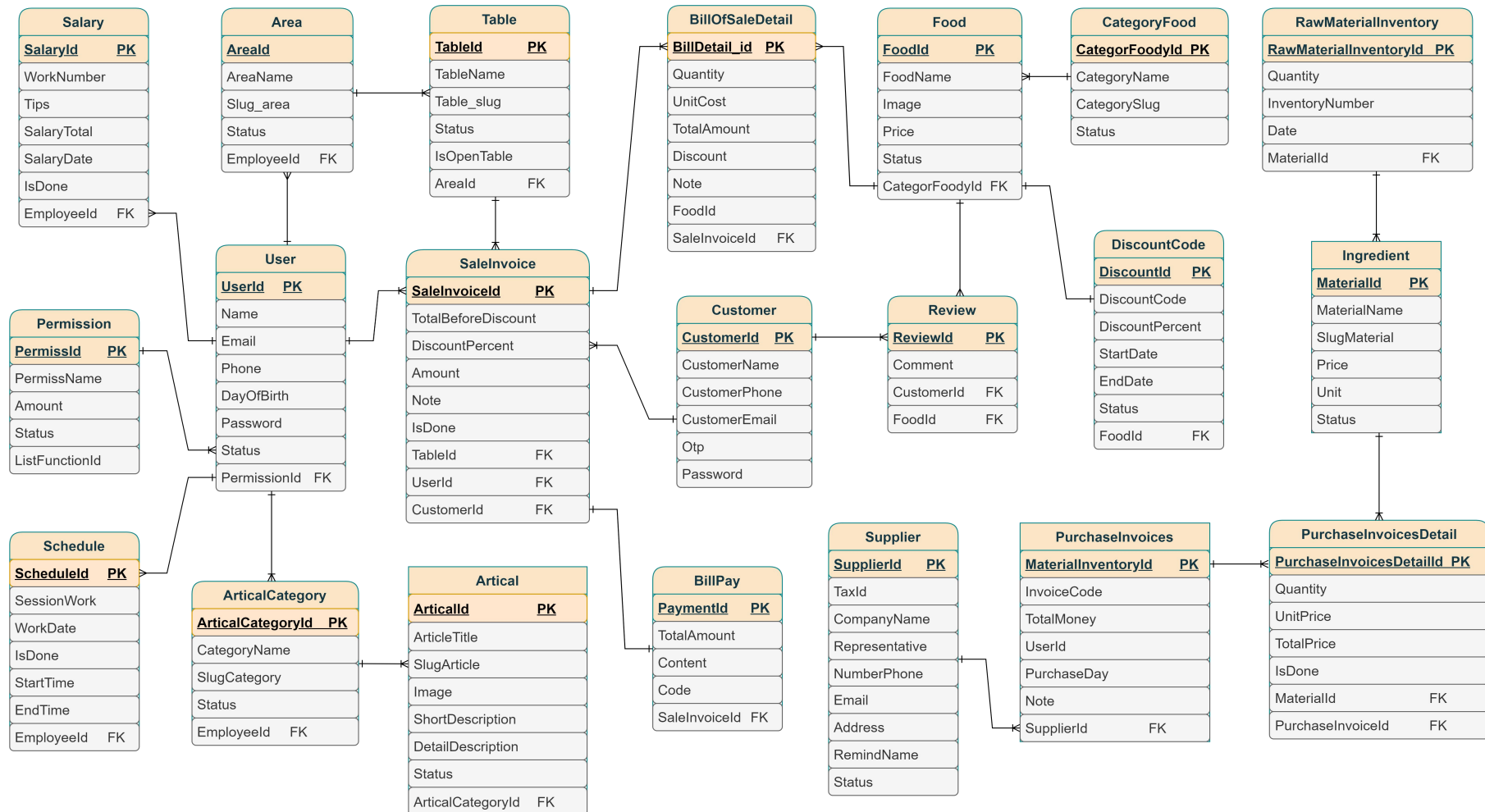


Figure 0. *Entity Relationship Diagram*

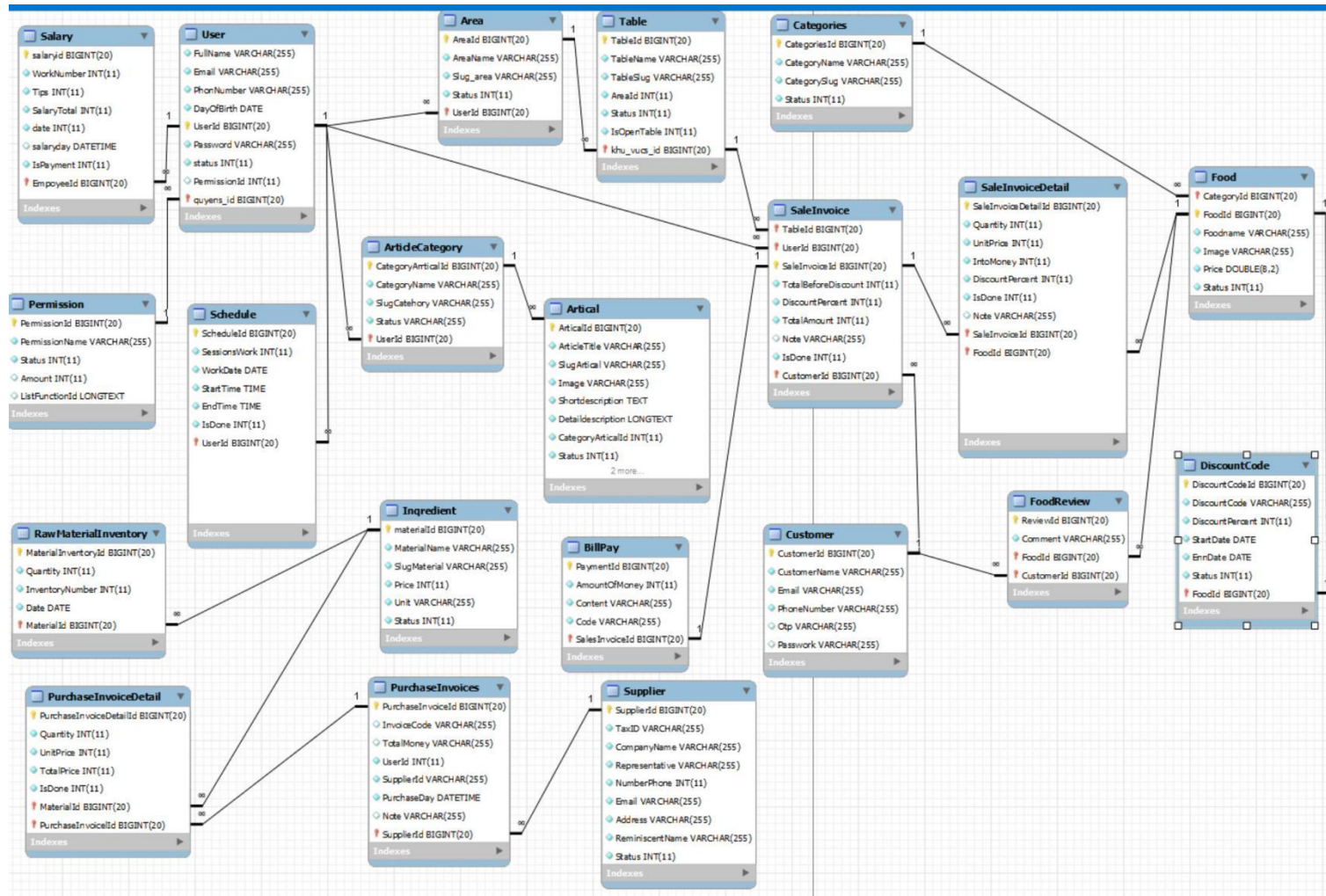


Figure 1. Database Relationship

3.1 Table Overview

Table 2. *Table Overview*

No.	Collection	Short Description
1	Customer	This table shows all information of customer.
2	FoodReview	This table shows all customer review information for food items.
3	Area	This table shows all information of area.
4	Table	This table shows all information of table.
5	SalesInvoices	This table shows all information of the sale invoice.
6	SaleInvoiceDetails	This table shows all the details about the sales invoice.
7	ArticalCategory	This table categorizes articles or blog posts related to the restaurant or food items.
8	Salary	This table contains salary information for employees.
9	Schedule	This table maintains the work schedules of employees.
10	User	This table holds information about the users of the system, such as employees or administrators.
11	Artical	This table shows all information of artical.
12	Food	This table shows all information of food.
13	DiscountCode	This table manages discount codes that can be applied to sales.
14	Permission	This table defines the permissions or access levels for different users.
15	PurchaseInvoices	This table shows all purchases the facility makes from suppliers.

16	PurchaseInvoiceDetail	This table provides detailed information about each item included in a purchase invoice.
17	Categories	This table categorizes food items.
18	Supplier	This table shows all information of supplier.
19	Ingredient	This table shows all information of ingredient.
20	RawMaterialInventory	This table shows all the inventory of raw materials.
21	BillPay	This table shows all information of bill payment.

3.2 Table Details

3.2.1 Customer

Attributes	Data Type	Null	Key	Default	Extra
CustomerId	Int identity (1,1)	Not Null	PK		Primary key.
CustomerName	Nvarchar (255)	Not Null			The name of the customer.
Email	Nvarchar (255)	Not Null			The email address of the customer.
PhoneNumber	Nvarchar (255)	Not Null			The phone number of the customer.
Otp	Nvarchar (255)				The otp code for sign in.
Password	Nvarchar (255)				The customer password.

3.3.2 FoodReview

Attributes	Datatype	Null	Key	Default	Extra
ReviewId	Int identity (1,1)	Not null	PK		Unique key for the menu item in the database.
FoodReviewId	Int	Not null	FK		Foreign key for the review in the database, linking to a specific review.
CustomerId	Int	Not null	FK		Foreign key for the customer who provided the review.
Comment	Int	Not null			The comment or feedback provided by the customer.

3.3.3 Area

Attributes	Datatype	Null	Key	Default	Extra
AreaId	Int identity (1,1)	Not null	PK		Unique key for each record in the table.
AreaName	Nvarchar (255)	Not null			The name or title of the region or area.
Status	Bit	Not null		1	The status or condition of the region.
UserId	Int	Not null	FK		Foreign key link to user table
Slug	Nvarchar (255)	Not null			The slug of the region.

3.3.4 Table

Attributes	Datatype	Null	Key	Default	Extra
TableId	Int identity (1,1)	Not null	PK		Unique key for each record in the table.
TableName	Nvarchar (255)	Not null			The name or label of the table.
AreaId	Int	Not null	FK		Foreign key referencing the region or area to which the table belongs.
Status	Bit	Not null		1	The status or condition of the table (e.g available, occupied, reserved).
TableSlug	Nvarchar (255)				Table's slug
IsOpenTable	Bit	Not null		0	The set of things make sure table is open or not.

3.3.5 SaleInvoice

Attributes	Datatype	Null	Key	Default	Extra
SaleInvoiceId	Int identity (1,1)	Not null	PK		Unique key for each record in the table.
CustomerId	Int		FK		Foreign key referencing the customer associated with the transaction.

TotalBeforeDiscount	Decimal (18,2)	Not null			The total amount before any discounts is applied.
TableId	Int	Not null	FK		Foreign key referencing the table where the transaction occurred.
UserId	Int	Not null	FK		Foreign key referencing the employee who processed the transaction.
DiscountPercent	Decimal (5,2)	Not null			The percentage of discount applied to the total amount.
TotalAmount	Decimal (18,2)	Not null			The actual amount received in payment.
Note	Nvarchar (max)				Any additional notes or comments related to the payment method.
IsDone	int	Not null			Check whether the sales invoice has been completed or not.

3.3.6 SaleInvoiceDetail

Attributes	Datatype	Null	Key	Default	Extra
SaleInvoiceDetailId	Int identity (1,1)	Not null	PK		Unique key for each record in the table.
SaleInvoiceId	Int	Not null	FK		Foreign key referencing the sales invoice associated with the transaction.
FoodId	Int	Not null	FK		Unique key referencing the menu item sold in the transaction.
Quantity	Int	Not null			The quantity of the menu item sold.
Unit	Decimal (18,2)	Not null			The selling price per unit of the menu item.
DiscountPercent	Decimal (5,2)				The discount amount applied to the menu item.
TotalAmount	Decimal (18,2)	Not null			The total amount for the menu item after any discounts is applied.
Note	Nvarchar (max)				Any additional notes or comments related to the menu item.
IsDone	Bit	Not null		0	Status makes sure this bill is paid.

3.3.7 ArticleCategory

Attributes	Datatype	Null	Key	Default	Extra
CategoryArticleId	Int identity (1,1)	Not null	FK		Unique key for each record in the table.
UserId	Int	Not null	FK		Foreign key of the Customers table
CategoryName	Nvarchar (255)				The name or title of the category.
SlugCategory	Nvarchar (255)				A unique, URL-friendly identifier for the category.
Status	Bit	Not null		1	The status or condition of the category.

3.3.8 Salary

Attributes	Datatype	Null	Key	Default	Extra
SalaryId	Int identity (1,1)		PK		Unique key for each record in the table.
UserId	Int	Not null	FK		Foreign key referencing the employee associated with the record.
NumberOfWork	Int	Not null			The number of working shifts or sessions completed by the employee.
Tips	int				Any commission or bonus earned by the employee.
salaryday	Decimal (18,2)	Not Null			The date on which the

					employee received his salary.
TotalSalary	Decimal (18,2)	Not Null			The total salary or earnings received by the employee.
Date	Date	Not Null			Statistics on the employee's salary date
IsPayment	Bit	Not null		0	Unique key for each record in the table.

3.3.9 Schedule

Attributes	Datatype	Null	Key	Default	Extra
ScheduleId	Int identity (1,1)	Not Null	PK		Unique key for each record in the table.
UserId	Int	Not null	FK		Foreign key referencing the employee associated with the record.
WorkDate	Date	Not null			The date on which the employee worked.
StartTime	Time	Not Null			The start time of the employee's shift.
EndTime	Time	Not Null			The end time of the employee's shift.
IsDone	Bit	Not null			Status makes sure this schedule is done.

3.3.10 Users

Attributes	Datatype	Null	Key	Default	Extra
UserId	Int identity (1,1)	Not Null	PK		Unique key for each record in the table.
FullName	Nvarchar (255)	Not null			The full name of the user.
Email	Nvarchar (255)	Not null			The email address of the user.
PhonNumber	Nvarchar (255)	Not null			The phone number of the user.
DayOfBirth	Date				The date of birth of the user.
Password	Nvarchar (255)	Not null			The password associated with the user account.
PermissionId	Int	Not null	FK		Foreign key referencing the user's role or permissions in the system.
Status	Bit	Not null		1	The status or condition of the admin.

3.3.11 Artical

Attributes	Datatype	Null	Key	Default	Extra
Articalid	Int identity (1,1)	Not Null	PK		Unique key for each record in the table.
CategoryArticlid	Int	Not null	FK		Foreign key referencing the category of the article.
Eventname	Nvarchar (255)	Not null			The title or name of the event.
Image	Nvarchar (255)	Not null			The image associated with the event.
Shortdescription	Nvarchar (max)	Not Null			A brief description or summary of the event.
Detaildescription	Nvarchar (max)	Not Null			A detailed description of the event.
Status	Bit	Not null		1	Foreign key referencing the responsible for managing the event.

3.3.12 Food

Attributes	Datatype	Null	Key	Default	Extra
FoodId	Int identity (1,1)	Not null	PK		Unique key for each record in the table.
FoodName	Nvarchar (255)	Not null			The name or title of the food item.
Price	Decimal (10,2)	Not null			The selling price of the food item.
Image	Nvarchar (255)	Not null			The image associated with the food item.
CategoryId	Int	Not null	FK		Foreign key referencing the category or classification of the food item.
Status	Bit	Not null		1	The status or condition of the foods.
TotalInput	Int				The amount of input
TotalOutput	Int				The amount of output

3.3.13 DiscountCode

Attributes	Datatype	Null	Key	Default	Extra
DiscountCodeId	Int identity (1,1)	Not null	PK		Unique key for each record in the table.
DiscountCode	Nvarchar (255)	Not null			The discount code or coupon code.
FoodId	Decimal (10,2)	Not null			The percentage of discount applied.
DiscountPercent	Int	Not null	FK		Foreign key referencing the menu item to which the discount applies.
StartDate	Date	Not null			The expiry date or validity period of the discount code.
EndDate	Bit	Not null		1	The status or condition of the discount code (e.g., active, expired, used).
Status	Date	Not null			The expiry date or validity period of the discount code.

3.3.14 Permission

Attributes	Datatype	Null	Key	Default	Extra
PermissionId	Int identity (1,1)	Not null	PK		Unique key for each record in the table.
PermissionName	Nvarchar (255)	Not null			The name or title of the permission.
ListFunctionId	Nvarchar (max)	Not null			The functionality or feature associated with the permission.
Status	Bit	Not null		1	The status or condition of the permission
Amount	Int			0	The quantity of the permission.

3.3.15 PurchaseInvoices

Attributes	Datatype	Null	Key	Default	Extra
PurchaseInvoiceId	Int identity (1,1)		PK		Unique key for each record in the table.
UserId	Int	Not null	FK		Foreign key referencing the employee associated with the transaction.
TotalAmount	Decimal (18,2)				The total amount spent on the purchase transaction.
PurchaseDay	Date	Not null			The date of the purchase transaction.
SupplierId	Int	Not null	FK		Foreign key referencing the supplier or vendor from whom the items were purchased.
InvoiceCode	Nvarchar (255)				Invoice code
Note	Nvarchar (max)				Any additional notes or comments related to the bill.

3.3.16 PurchaseInvoiceDetail

Attributes	Datatype	Null	Key	Default	Extra
PurchaseInvoiceDetailId	Int identity (1,1)	Not null	PK		Unique key for each record in the table.
MaterialId	Int	Not null	FK		Foreign key referencing the raw material associated with the transaction.
PurchaseInvoiceId	Int	Not null	FK		Foreign key referencing the purchase invoice associated with the transaction.
Quantity	Int	Not null			The quantity of the raw material purchased.
UnitPrice	Decimal (18,2)	Not null			The unit price or cost of the raw material.
TotalPrice	Decimal (18,2)	Not null			The total cost for the quantity of raw material purchased.
IsDone	Bit	Not null		0	The status or condition of the transaction.

3.3.17 Categories

Attributes	Datatype	Null	Key	Default	Extra
CategoriesId	Int identity (1,1)	Not null	PK		Unique key for each record in the table.
CategoryName	Nvarchar (255)	Not null			The name or title of the category.
CategorySlug	Nvarchar (255)	Not null			A unique, URL-friendly identifier for the category.
Status	Bit	Not null		1	The status or condition of the category.
UserId	Int		FK		Id's user.

3.3.18 Supplier

Attributes	Datatype	Null	Key	Default	Extra
SupplierId	Int identity (1,1)		PK		Unique key for each record in the table.
SupplierCode	Nvarchar (255)	Not null			The tax identification number of the company.
CompanyName	Nvarchar (255)	Not null			The name of the company.
Representative Name	Nvarchar (255)	Not null			The name of the representative of the company.
Email	Nvarchar (255)	Not null			The email address of the company or representative.
NumberPhone	Nvarchar (255)	Not null			The phone number of the user.

Address	Nvarchar (255)	Not null			The address of the company.
ReminiscentName	Nvarchar (255)	Not null			A nickname or alias for the company, if applicable.
Status	Bit	Not null		1	The status or condition of the company or record.

3.3.19 Ingredient

Attributes	Datatype	Null	Key	Default	Extra
MaterialId	Int identity (1,1)	Not null	PK		Unique key for each record in the table.
MaterialName	Nvarchar (255)	Not null			The name or title of the raw material.
SlugMaterial	Nvarchar (255)	Not null			A unique, URL-friendly identifier for the raw material.
Status	Bit	Not null			The status or condition of the raw material.
Price	Decimal (18,2)	Not null			The selling price per unit of the item.
Unit	Nvarchar (255)	Not null			Material's unit.

3.3.20 RawMaterialInventory

Attributes	Datatype	Null	Key	Default	Extra
MaterialInventory Id	Int identity (1,1)	Not null	PK		Unique key for each record in the table.
MaterialId	Int	Not null	FK		Foreign key
Quantity	Int	Not null			A unique, URL-friendly identifier for the raw material.
InventoryNumber	Int	Not null			The status or condition of the raw material.
Date	Date	Not null			The selling price per unit of the item.

3.3.21 BiillPay

Attributes	Datatype	Null	Key	Default	Extra
PaymentId	Int identity (1,1)	Not null	PK		Unique key for each record in the table.
SoAmountOfMoney	Decimal (18,2)	Not null			The selling price per unit of the item.
Content	Nvarchar (max)	Not null			Description for the bill
Code	Nvarchar (255)	Not null			Code of tax
SalesInvoiceId	Int	Not null	FK		Foreign key

4. Reference

Table 3. *Reference*

No.	References	Document Information
1	Document	https://www.oracle.com/mysql/what-is-mysql/
		https://www.javatpoint.com/xampp