

**COURSE**

Higher Diploma in Science in Computing (Web Development)

**MODULE**

DATABASE DESIGN AND DEVELOPMENT

(B8IT113\_2324\_TME3)

**MODULE LEADER**

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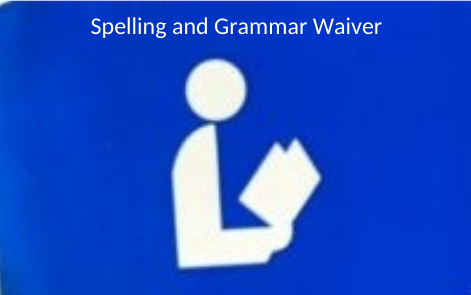
**TOPIC**

CA – Technical Document

**SUBMITTED BY**

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# Project Overview/Scope

This database is for a new start-up food delivery service based in Dublin called “Healthy Meals.” They aim to deliver meals focusing on dietary needs or people wanting to lose weight. they also strive to create more awareness of what we eat. The database holds customer information, orders, inventory, and promo codes.

The Objective of this database is the following

* To store customer information, e.g., Personal Information, diet preferences, and contact details
* To track orders from Payment to delivery
* Manage up-to-date inventory, ingredients, and supplies
* Manage promo codes
* keep up-to-date records of suppliers

# List of Business Rules

|  |  |
| --- | --- |
| **Id** | **Description** |
| R1 | Promo codes can only be used on the date within the promotion’s validity period. |
| R2 | The database will contain the customer addresses; GDPR must be upheld. |
| R3 | All customer feedback must be reviewed within 48 hours, and any necessary actions (e.g., refunds, replacements) must be taken within 72 hours. |
| R4 | All customers must have a unique and must not overlap with other emails on the system. |
| R5 | All customers' orders must be ordered before 5 PM for the next day's orders |
| R6 | All Customers must select any dietary preferences when signing on for the first time. |
| R7 | All ingredients and supplies must be certified suppliers. |

# Business Rules Implemented in the Database

|  |  |
| --- | --- |
| **Id** | **Proposed Implementation** |
| R1 | We can use a unique constraint on the customer table; if the promo code is outdated, it will not be placed on the order. |
| R2 | If customer accounts are inactive within 6 months, they will be removed from the database. Add the Last activity date to the Customer table and create a Trigger that deletes all data from data from Columns older than 6 months. |
| R3 | You can use a check that will automatically invalidate reviews within 48 hours of posting |
| R4 | Can use a unique constraint to check if all customers have a unique email and customer ID, |

# Referential Integrity

**Customer Table**

On the Customer Table, the CustID is the Primary key

And the Foreign Keys are OrderID, ItemID, PromotionID

The OrderID relationship is to ensure that each order is linked to a customer, and every order must have been bought by a customer.

The ItemID relationship is to ensure that each Item is linked to a customer

**Feedback Table**

On the Feedback Table, the FeedbackID is the Primary key

And the Foreign Keys are OrderID, CustID.

The relationship of OrderID is to ensure that each order is linked to Feedback.

The ItemID relationship is to ensure that each Item is linked to a customer, because all Items must have been brought by one or more Customer

**MenuItem Table**

On the MenuItem Table, the ItemID is the Primary key

And the Foreign Keys is SupplierID and the CustID

The relationship of the SupplierID a many to one and only one relationship because there can be only one SupplierID but there are many items on table, and it help with non-existent suppliers

**Suppliers Table**

On the Suppliers Table, the SupplierID is the Primary key

And the Foreign Keys is IngredientID,

The relationship is IngredientID many to many and the SupplierID is one of many, because there can be many suppliers but there can only be one of many Ingredients.

Promotion Table

On the Promotion Table the PromoID is the Primary key, and is linked to the Customer Table

With the relationship between them both is One or many, with is an error because it should be one and only one relationship where it links to the Customer Table

# Views

|  |  |
| --- | --- |
| **Name** | **Justification** |
| reviews | The social media team want to access to some of our great feedback for testimonial for our great customers |
| MenuOverview | The business would like an overview of the Menu and Suppliers |
| OrderOverview | Get an overview of all order made from total amount, order date, Delivery date and Payment status, for money coming in |

# Entity Relationship Diagram

A screenshot of a computer

Description automatically generated

# Data Dictionary

Customer

|  |  |  |  |
| --- | --- | --- | --- |
| **Attribute** | **Datatype** | **Required** | **Description** |
| CustID (PK) | Int 10 | Y | Customer ID |
| Name | Char(100) | Y | First & Last Name of Customer |
| Email | Char(100) | Y | Customer’s Emails |
| Phone Number | FLOAT(15) | Y | Customer’s phone number |
| Address | Char(255) | Y | Customer’s address |
| Dietary Preferences | Char(100) | N | Customer’s Dietary Preferences |
| Registration Date | Int (10) | N | When Customers Signed up |
| PromotionID (FK) | VARCHAR(50) | N | Used Promo code |
| ItemID (FK) | Int(15) | N | Menu item |
| OrderID (FK) | Int(15) | N | We use the order ID to track the item. |

Menu Item

|  |  |  |  |
| --- | --- | --- | --- |
| **Attribute** | **Datatype** | **Required** | **Description** |
| ItemID (PK) | Int(10) | Y | Item ID |
| Name | CHAR(100) | N | Name of dish |
| Description | VARCHAR(255) | N | What the dish is |
| Nutritional | VARCHAR(255) | N | Lists Protein, Carbs ect |
| Information | VARCHAR(255) | N | Shows Carbs and fats in dish |
| Price | DECIMAL(10,2) | N | How must is the Item |
| SupplierID (FK) | Int(10) | Y | ID for Suppliers |
| CustID (FK) | Int(10) | T | Customer ID |

Suppliers

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute | Datatype | Required | Description |
| Supplier ID (PK) | Int(10) | Y | ID for Suppliers |
| Supplier Name | Char(100) | N | Supplier’s Name |
| Contact Information | Char(255) | N | Contant Info for Suppliers |
| Ingredient ID (FK) | Int(10) | Y | ID for ingredient |

Inventory

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute | Datatype | Required | Description |
| IngedientID (PK) | INT | Y | ID for ingredient |
| IngredientName | CHAR(100) | N | Name of ID ingredient |
| Quantity | CHAR(50) | N | Quantity EG Protein in grams |
| ExpirationDate | Date | N | Expiration date for ingredients |
| SuppliersID (FK) | INT | Y | ID for Suppliers |

Promotion

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute | Datatype | Required | Description |
| PromoID (PK) | CHAR(50) | Y | ID for Promos |
| PromoName | CHAR(100) | N | Name for Promo that customers use |
| DiscountPercentage | Decimal(5,2) | N | Money off order from customer |
| ValidFrom | Date | N | Valid date for Promo code |
| ValidTo | Date | N | Date that the Promo code will not work |

Orders

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute | Datatype | Required | Description |
| OrderID | INT | Y | We use this to track the item. |
| CustID | INT | Y | Customer ID |
| OrderDate | Date | N | Date when the order was made |
| DeliveryStatus | Date | N | Date when the Delivery was completed |
| TotalAmount | INT | N | Total amount of Order that Customer paid |
| PaymentStatus | CHAR(1) | N | Did the payment go Through |
|  |  |  |  |

Feedback

|  |  |  |  |
| --- | --- | --- | --- |
| Attribute | Datatype | Required | Description |
| FeedbackID | INT | Y | For feedback |
| CustID | INT | Y | Customer ID |
| OrderID | INT | Y | Date when the order was made |
| Rating | INT | N | 1 out of 5 rating score for the food overall |
| Comments | Text | N | User Comments |
| Date | Date Time | N | The date that the comment was posted |
|  |  |  |  |

# Technology Used

Somee Login   
  
Username: Bendoescode

Password: Salesians2025

# DDL & DML Running Order

A list of all SQL files to be run and in what order should be placed here. This should include the SQL to:

1. Create Tables

* Raw tables

1. Insert Data

* HM data

1. Create Views

* CREATE VIEW reviews
* CREATE VIEW OrderOverview
* CREATE VIEW MenuOverview

1. Create Procs.

* CREATE PROCEDURE UpdateSuppliersName (unfinished not in Database)
* CREATE PROCEDURE SelectAllCustomers
* CREATE PROCEDURE CustomerOrderOverview

# References

<https://www.w3schools.com/sql/>

<https://www.youtube.com/watch?v=wciubfRhvtM>

<https://www.youtube.com/watch?v=NrBJmtD0kEw>

<https://www.youtube.com/watch?v=oagHZwY9JJY>