Digital Menu Database Design

Enterprise Database Schema Design

- Objective
- Business Operations
- Schema Design

Business Objectives

The purpose of this project is to create a digital menu system that displays English translations of Thai menus along with photos of dishes, tailored to users based on their GPS location.

Actors:

- Customer: View menu (English version), choose items
- Shop Owner: Add menu items, update translations, manage photos

Operations

Add: Insert a new menu item, including translation and image

Delete: Remove an existing menu item

Query: Retrieve menu items based on shop location (GPS)

Summary Reports:

- Menu items by shop
- Translation status
- Photo availability

Master Data

- Shop: (Shop_ID, Shop_Name, GPS_Latitude, GPS_Longitude)
- Menu: (Menu_ID, Shop_ID, Menu_Name)
- Menu_Item: (Item_ID, Menu_ID, Thai_Name, Price)
- Translation: (Translation_ID, Item_ID, English_Name, Description)
- Image: (Image_ID, Item_ID, Image_URL)

Assume that all initialization processes has been made.
CRUD

Transactions

Add a Menu Item

- Insert into Menu_Item with Thai_Name and Price
- Add translation to Translation with English_Name and Description
- Link image via Image_URL in the Image table

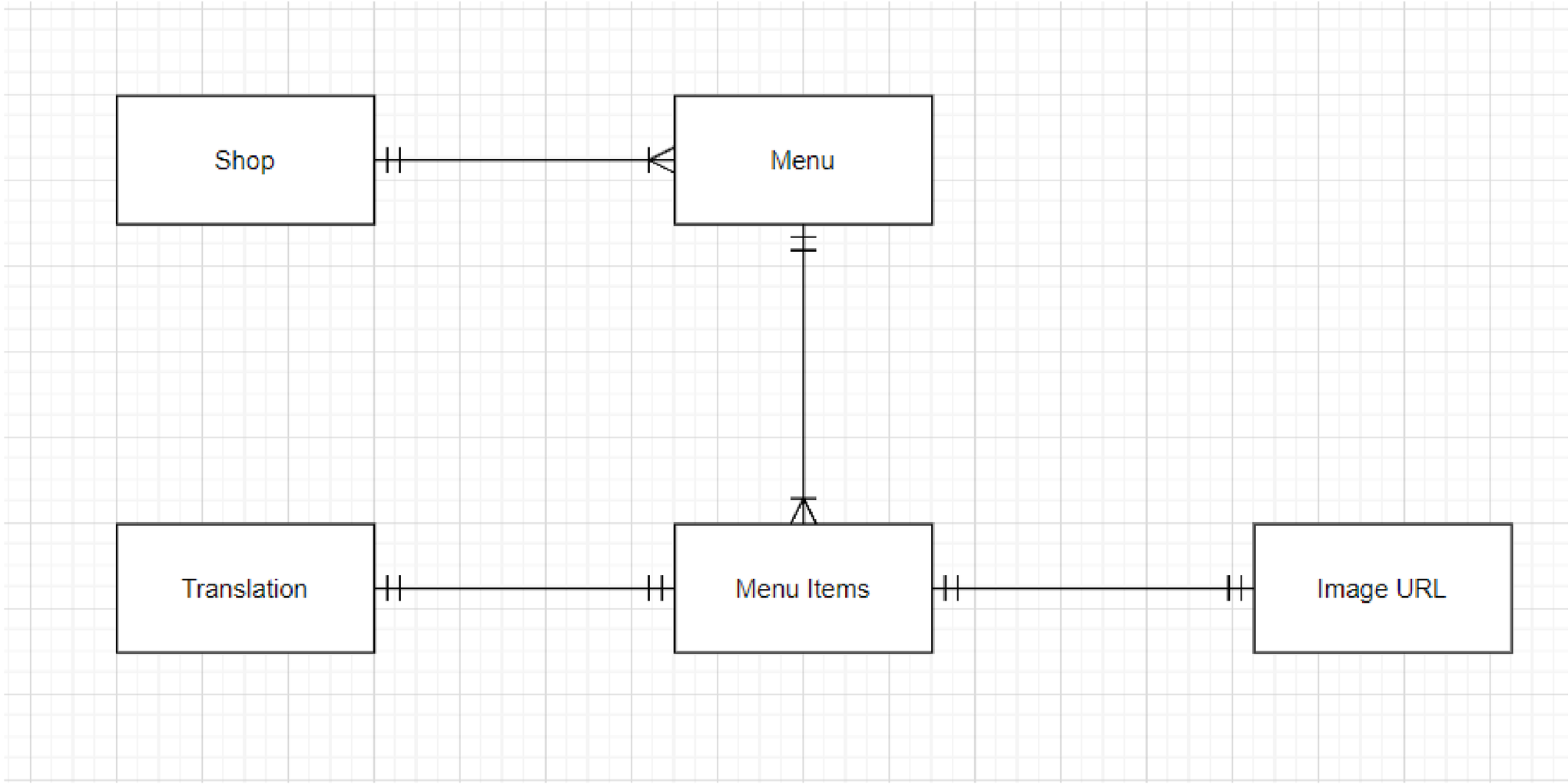
Delete a Menu Item

- Remove from Menu_Item and cascade delete related rows in Translation and Image

Query Menu Items by Location

- Use GPS_Latitude and GPS_Longitude to find the nearest shop and fetch its menu details

Relationship Design



Scenario: Displaying Menu Based on Location

- User opens the digital menu app.
- The app detects the user’s GPS location.
- The system finds the closest shop using GPS_Latitude and GPS_Longitude.
- Menu items are retrieved, including translations and images.
- User views the translated menu with images on their device.

Class diagram