

DIGITAL FOOD MENU

✓ Presented by Group 6

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INTRODCUTION

- ✓ • Objective:
 - Create a digital menu system displaying English translations of Thai menus with photos
 - Tailored recommendations based on user's GPS location
- Actors:
 - Customer: View menu (English version), choose items
 - Shop Owner: Add menu items, update translations, manage photos



SCENERIO

- 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

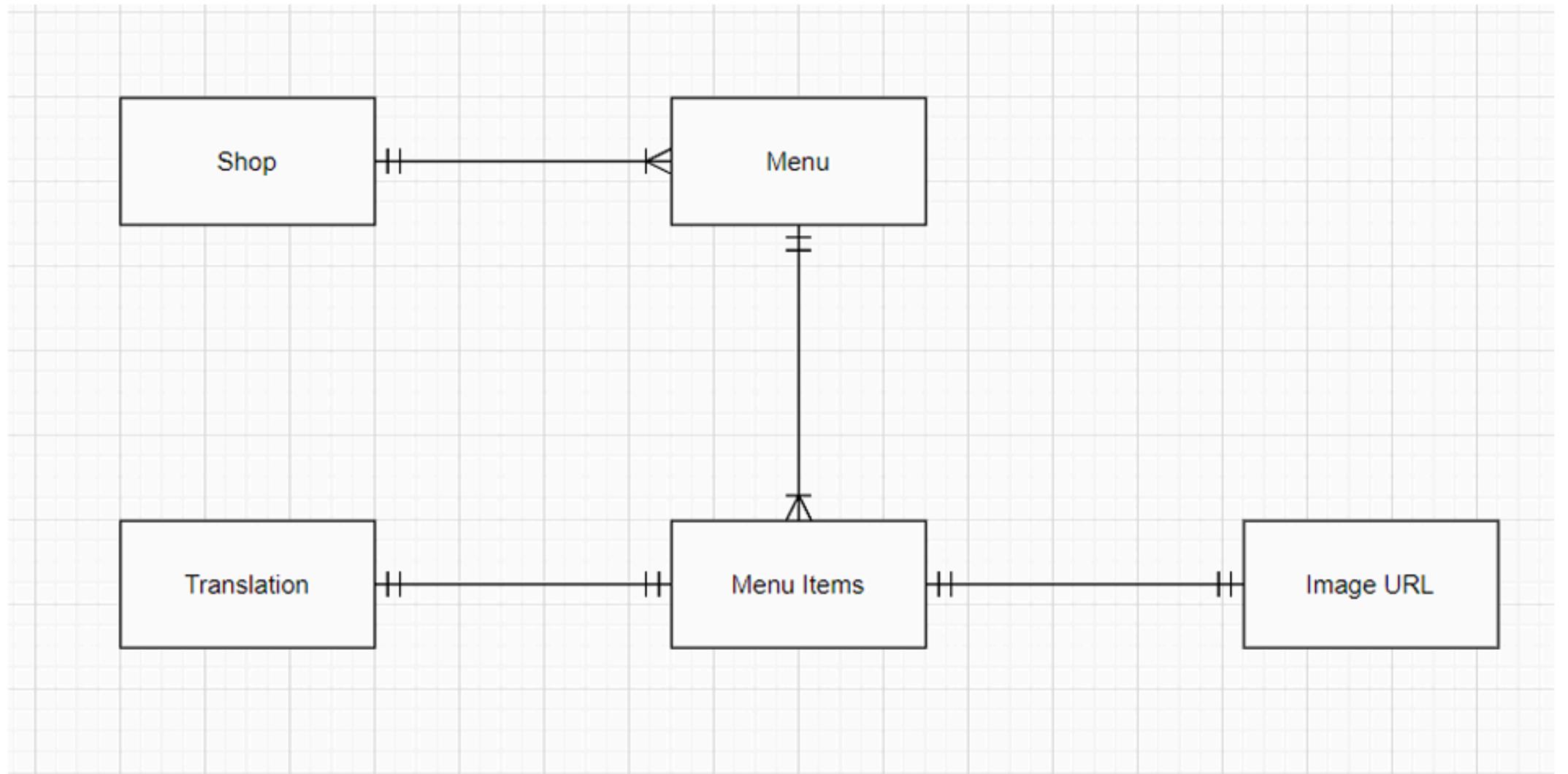




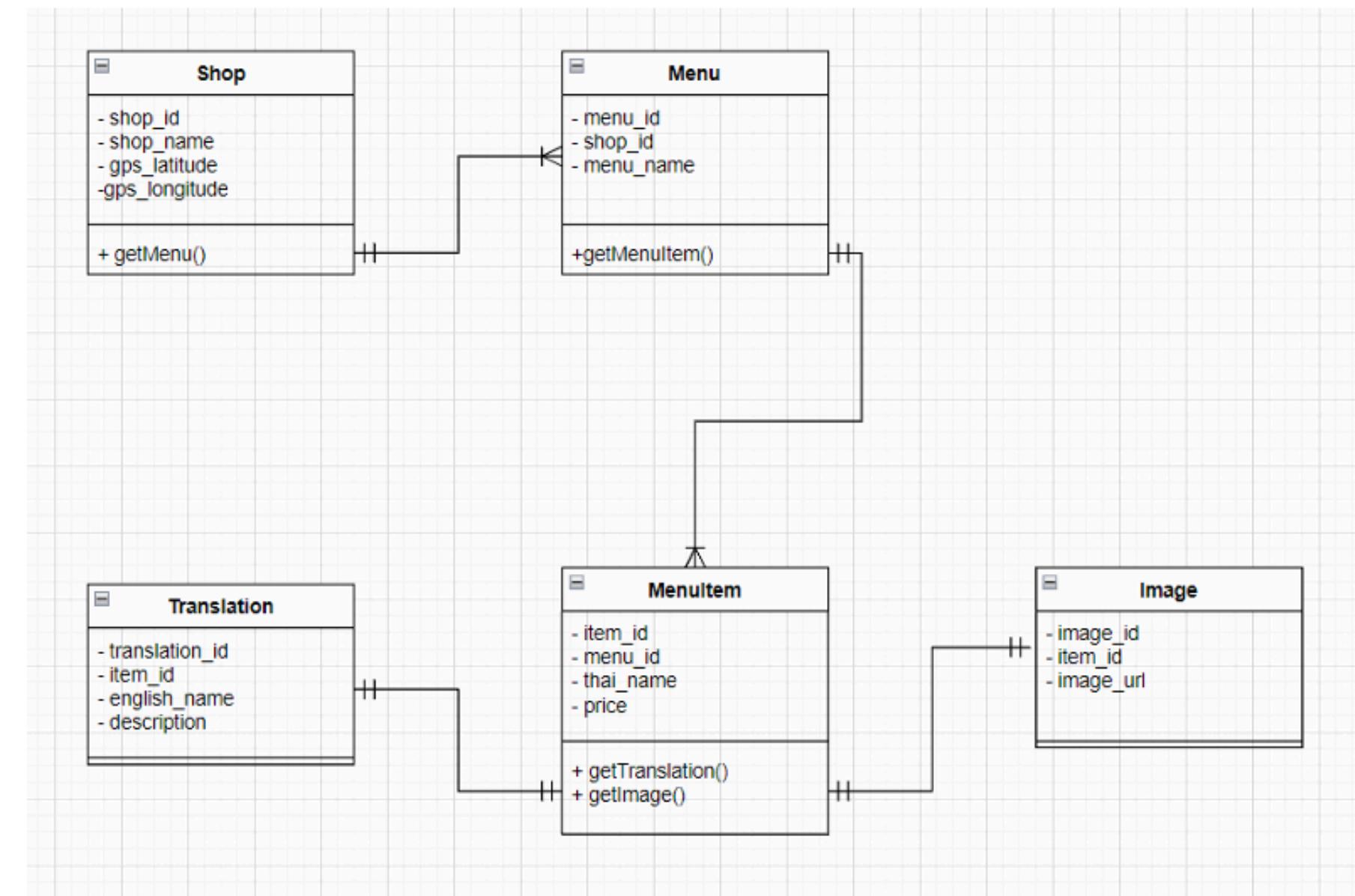
BUSINESS OPERATIONS

- ✓ • Add: Insert a new menu item (translation and image included)
- 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

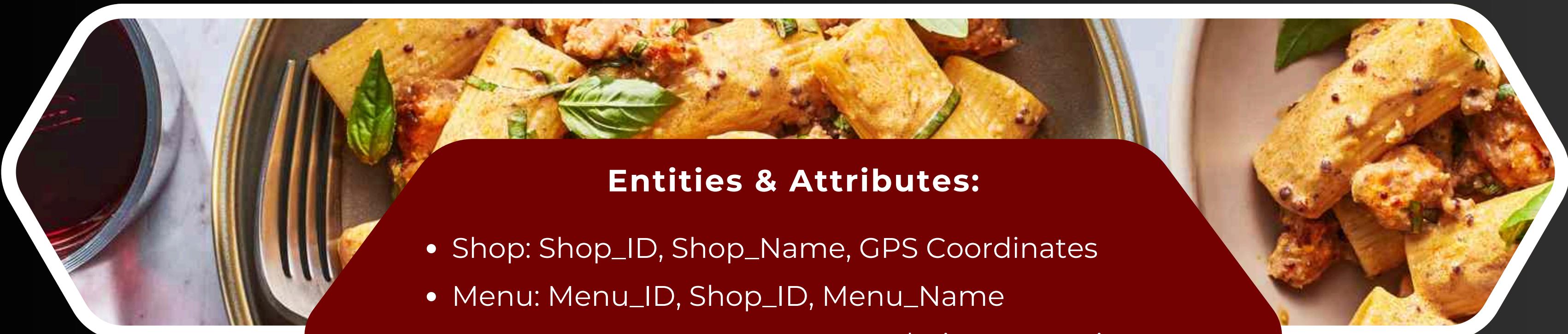
Relationship Design



Class diagram



DATA SCHEMA



Entities & Attributes:

- Shop: Shop_ID, Shop_Name, GPS Coordinates
- 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

DATABASE SCHEMA DESIGN

```
CREATE TABLE Shop (
    Shop_ID NUMBER PRIMARY KEY,
    Shop_Name VARCHAR2(255) NOT NULL,
    GPS_Latitude NUMBER(10,8) NOT NULL,
    GPS_Longitude NUMBER(11,8) NOT NULL,
    Created_Time TIMESTAMP DEFAULT CURRENT_TIMESTAMP NOT NULL,
    Updated_Time TIMESTAMP DEFAULT CURRENT_TIMESTAMP NOT NULL
);
```

- Stores restaurant/café details
- Includes GPS coordinates for location-based services



MENU TABLE DESIGN

```
CREATE TABLE Menu (
    Menu_ID NUMBER PRIMARY KEY,
    Shop_ID NUMBER NOT NULL,
    Menu_Name VARCHAR2(255) NOT NULL,
    Created_Time TIMESTAMP DEFAULT CURRENT_TIMESTAMP NOT NULL,
    Updated_Time TIMESTAMP DEFAULT CURRENT_TIMESTAMP NOT NULL,
    CONSTRAINT fk_shop FOREIGN KEY (Shop_ID) REFERENCES Shop(Shop_ID) ON DELETE CASCADE
);
```

- Each shop has a menu
- Relationship with Shop table



MENU ITEM TABLE DESIGN

```
CREATE TABLE Menu_Item (
    Item_ID NUMBER PRIMARY KEY,
    Menu_ID NUMBER NOT NULL,
    Thai_Name VARCHAR2(255) NOT NULL,
    Price NUMBER(6,2) NOT NULL,
    Created_Time TIMESTAMP DEFAULT CURRENT_TIMESTAMP NOT NULL,
    Updated_Time TIMESTAMP DEFAULT CURRENT_TIMESTAMP NOT NULL,
    CONSTRAINT fk_menu FOREIGN KEY (Menu_ID) REFERENCES Menu(Menu_ID) ON DELETE CASCADE
);
```

- Stores dish names and pricing



TRANSLATION TABLE DESIGN

```
CREATE TABLE Translation (
    Translation_ID NUMBER PRIMARY KEY,
    Item_ID NUMBER NOT NULL,
    English_Name VARCHAR2(255) NOT NULL,
    Description VARCHAR2(500),
    Created_Time TIMESTAMP DEFAULT CURRENT_TIMESTAMP NOT NULL,
    Updated_Time TIMESTAMP DEFAULT CURRENT_TIMESTAMP NOT NULL,
    CONSTRAINT fk_item_translation FOREIGN KEY (Item_ID) REFERENCES Menu_Item(Item_ID) ON DELETE CASCADE
);|
```

- Provides English translations
- Links to menu items

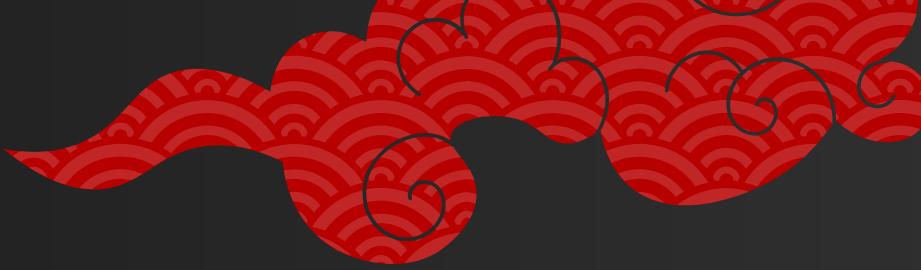


IMAGE TABLE DESIGN

```
CREATE TABLE Image (
    Image_ID NUMBER PRIMARY KEY,
    Item_ID NUMBER NOT NULL,
    Image_URL VARCHAR2(512) NOT NULL,
    Created_Time TIMESTAMP DEFAULT CURRENT_TIMESTAMP NOT NULL,
    Updated_Time TIMESTAMP DEFAULT CURRENT_TIMESTAMP NOT NULL,
    CONSTRAINT fk_item_image FOREIGN KEY (Item_ID) REFERENCES Menu_Item(Item_ID) ON DELETE CASCADE
);
```

- Stores menu images
- Links to menu items





DIGITAL MENU DATA

✓ Shop Data

Shop_ID	Shop_Name	GPS_Latitude	GPS_Longitude
1	ร้านสเต็ก 3 ชา	13.60287394	100.8467744
2	Jippy House Abac Restaurant	13.61273899	100.8333293
3	Chinuenim Korea Chicken	13.60828741	100.8501964
4	Oppa Jun Korean Shop	13.61169943	100.8379085
5	Fresh Me Abac	13.61182025	100.8375986

✓ Menu Data

Menu_ID	Shop_ID	Menu_Name
1	1	Main Menu
2	2	Main Menu
3	3	Main Menu
4	4	Main Menu
5	5	Main Menu



DIGITAL MENU DATA

✓ Menu Items

Item_ID	Menu_ID	Thai_Name	Price
101	1	Steak Sam Cha	140
102	1	Steak (Moo,Gai)/(Neua,Pla)	70
103	1	Steak Prikthai Dam (Moo,Gai)/(Neua,Pla)	70
104	1	Burger (Moo,Gai)/(Neua,Pla)	50
105	1	Salad Phak	50
106	1	Salad (Moo,Gai)/(Neua,Pla)	70
107	1	Salad Kung Krob	70
108	1	Salad Tuna	70
109	1	Moo Kenta, Gai Kenta, Neua Kenta, Pla Kenta	40

✓ Translation Data

Translation_ID	Item_ID	Thai_Name	English_Name	Description
201	101	Steak Sam Cha	3Cha Steak	Choose 3 pieces of steak - Pork, Chicken, Fish, Beef
202	102	Steak (Moo,Gai)/(Neua,Pla)	Steak (Pork, Chicken) / (Beef, Fish)	Grilled steak served with side salad and sauce
203	103	Steak Prikthai Dam (Moo,Gai)/(Neua,Pla)	Black Pepper Steak (Pork, Chicken) / (Beef, Fish)	Steak seasoned with black pepper sauce
204	104	Burger (Moo,Gai)/(Neua,Pla)	Burger (Pork, Chicken) / (Beef, Fish)	Juicy burger served with fries
205	105	Salad Phak	Vegetable Salad	Fresh mixed vegetable salad with dressing
206	106	Salad (Moo,Gai)/(Neua,Pla)	Vegetable Salad (Pork, Chicken) / (Beef, Fish)	Salad topped with grilled meat
207	107	Salad Kung Krob	Vegetable Salad with Crispy Prawn	Crispy prawns on fresh salad
208	108	Salad Tuna	Vegetable Salad with Tuna	Salad with fresh tuna and dressing



DIGITAL MENU DATA

✓ Image Data

Image_ID	Item_ID	Image_URL
301	101	https://littlesunnykitchen.com/wp-content/uploads/2022/10/Steak-Salad-1-600x900.jpg
302	102	https://littlesunnykitchen.com/wp-content/uploads/2022/10/Steak-Salad-1-600x900.jpg
303	103	https://noobcook.com/wp-content/uploads/2012/02/blackpeppersteak2.jpg
304	104	https://i.ytimg.com/vi/CJj84y5P3_g/maxresdefault.jpg
305	105	https://www.archanaskitchen.com/images/archanaskitchen/1-Author/sneha-archanaskitchen.com
306	106	https://recipesforyoutwo.com/wp-content/uploads/2019/01/meat-salad-dinner-recipe-10.jpg
307	107	https://flawlessfood.co.uk/wp-content/uploads/2021/07/King-Prawn-Salad-305-Flawless.jpg
308	108	https://img.taste.com.au/xg3XMRpy/taste/2016/11/mediterranean-tuna-salad-31059-1.jpeg



GUI



- **Key Features:**

- **Built with Python & Tkinter.**
- **Displays menu items, descriptions, and images.**
- **Side-by-side layout for text and images.**
- **Live updates when selecting a menu item.**
- **Handles missing images gracefully.**

Digital Menu System		
Menu ID	Menu Name	Shop Name
1	Main Menu	Ran Steak 3 Cha
2	Main Menu	Jippy House Abac Restaurant
3	Main Menu	Chinuenim Korea Chicken
4	Main Menu	Oppa Jun Korean Shop
5	Main Menu	Fresh Me Abac

Translations - Ran Steak 3 Cha					
Item ID	Thai Name	English Name	Description	Image URL	
101	Steak Sam Cha	3Cha Steak	Choose 3 pieces of steak - Pork, Chic	https://littlesunnykitchen.com/wp-c	
102	Steak (Moo,Gai)/(Neua,Pla)	Steak (Pork, Chicken) / (Beef, Fish)	Grilled steak served with side salad ai	https://littlesunnykitchen.com/wp-c	
103	Steak Prikhai Dam (Moo,Gai)/(Neua	Black Pepper Steak (Pork, Chicken) /	Steak seasoned with black pepper sa	https://noobcook.com/wp-content/	
104	Burger (Moo,Gai)/(Neua,Pla)	Burger (Pork, Chicken) / (Beef, Fish)	Juicy burger served with fries	https://i.ytimg.com/vi/Cj84y5P3.g	
105	Salad Phak	Vegetable Salad	Fresh mixed vegetable salad with dre	https://www.archanaskitchen.com/i	
106	Salad (Moo,Gai)/(Neua,Pla)	Vegetable Salad (Pork, Chicken) / (Be	Salad topped with grilled meat	https://recipesforyoutwo.com/wp-c	
107	Salad Kung Krob	Vegetable Salad with Crispy Prawn	Crispy prawns on fresh salad	https://flawlessfood.co.uk/wp-conte	
108	Salad Tuna	Vegetable Salad with Tuna	Salad with fresh tuna and dressing	https://img.taste.com.au/xg3XMRpy	
109	Moo Kenta, Gai Kenta, Neua Kenta, F	Kenta Pork, Chicken, Beef, Fish	Special fried meat selection	https://irp-cdn.multiscreensite.com/	
110	Khao Pad Dontri (Moo,Gai)/(Neua,Pl	Musical Fried Rice (Pork, Chicken) /	Special house-style fried rice	https://i.ytimg.com/vi/G6B8izlbAEM	
111	Khao Pad Na Steak (Moo,Gai)/(Neua	Fried Rice with Steak (Pork, Chicken)	Fried rice topped with steak	https://thumbs.dreamstime.com/b/	
112	Khao Pad P Boy	Fried Rice with PBoy	Signature fried rice dish	https://www.healthygfamily.com/w	

Item Description:

Juicy burger served with fries



CODE IMPLEMENTATION

✓ 1. db_connection.py (Database connection)

- Establishes a connection with the Oracle database.
- Uses cx_Oracle for executing queries.
- Ensures safe handling of database connections.

✓ 2. fetch_menus.py (Fetching menus, translations, and images)

- Connects to the database and retrieves menu information.
- Queries menu items and their translations.
- Fetches image URLs for menu items.

✓ 3. app.py (GUI Implementation)

- Uses Tkinter to build the graphical user interface.
- Displays restaurant menus, translations, and images.
- Fetches data dynamically and updates UI components.
- Clicking on a menu item displays the description and image side by side.
- If an image is missing, shows a default text instead.

CODE IMPLEMENTATION

```
import cx_Oracle

conn = cx_Oracle.connect('DBMS128')
print(conn.version)
```

```
def fetch_menus():
    cursor = conn.cursor()
    query = """
SELECT m.Menu_ID, m.Menu_Name, s.Shop_Name
FROM Menu m
JOIN Shop s ON m.Shop_ID = s.Shop_ID
ORDER BY m.Menu_ID
"""

    cursor.execute(query)
    menus = cursor.fetchall()
    cursor.close()
    return menus
```

```
root = tk.Tk()
root.title("Digital Menu System")
root.geometry("700x400")

columns = ("Menu ID", "Menu Name", "Shop Name")
tree = ttk.Treeview(root, columns=columns, show="headings")

for col in columns:
    tree.heading(col, text=col)
    tree.column(col, width=220, anchor=tk.CENTER)

tree.pack(pady=20, expand=True, fill='both')
tree.bind('<<TreeviewSelect>>', on_menu_select)

load_btn = ttk.Button(root, text="Load Menus", command=load_data)
load_btn.pack(pady=10)

root.mainloop()
```

CONCLUSION

- The Digital Menu System enhances the dining experience for both customers and restaurant owners. By integrating translations, images, and GPS-based menus, it solves language barriers and improves menu accessibility.
- This project provides real business value by making restaurant operations smoother and enhancing the overall customer experience.



THANK YOU

- ✓ Digital food menu

QUESTIONS?

