**Digital Menu Database Schema**

**1. Shop Table**

**Stores information about restaurants or cafes using the digital menu system.**

CREATE TABLE Shop (

Shop\_ID NUMBER,

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,

PRIMARY KEY(Shop\_ID)

);

INSERT INTO Shop (Shop\_ID, Shop\_Name, GPS\_Latitude, GPS\_Longitude)

VALUES (1, 'Ran Steak 3 Cha', 13.60287394, 100.8467744);

INSERT INTO Shop (Shop\_ID, Shop\_Name, GPS\_Latitude, GPS\_Longitude)

VALUES (2, 'Jippy House Abac Restaurant', 13.61273899, 100.8333293);

INSERT INTO Shop (Shop\_ID, Shop\_Name, GPS\_Latitude, GPS\_Longitude)

VALUES (3, 'Chinuenim Korea Chicken', 13.60828741, 100.8501964);

INSERT INTO Shop (Shop\_ID, Shop\_Name, GPS\_Latitude, GPS\_Longitude)

VALUES (4, 'Oppa Jun Korean Shop', 13.61169943, 100.8379085);

INSERT INTO Shop (Shop\_ID, Shop\_Name, GPS\_Latitude, GPS\_Longitude)

VALUES (5, 'Fresh Me Abac', 13.61182025, 100.8375986);

**2. Menu Table**

**Represents different menus associated with shops.**

CREATE TABLE Menu (

Menu\_ID NUMBER,

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,

PRIMARY KEY(Menu\_ID),

CONSTRAINT fk\_shop FOREIGN KEY (Shop\_ID) REFERENCES Shop(Shop\_ID) ON DELETE CASCADE

);

|  |
| --- |
| INSERT INTO Menu (Menu\_ID, Shop\_ID, Menu\_Name) VALUES(1,1,'Main Menu'); |
| INSERT INTO Menu (Menu\_ID, Shop\_ID, Menu\_Name) VALUES(2,2,'Main Menu'); |
| INSERT INTO Menu (Menu\_ID, Shop\_ID, Menu\_Name) VALUES(3,3,'Main Menu'); |
| INSERT INTO Menu (Menu\_ID, Shop\_ID, Menu\_Name) VALUES(4,4,'Main Menu'); |
| INSERT INTO Menu (Menu\_ID, Shop\_ID, Menu\_Name) VALUES(5,5,'Main Menu'); |

**3. Menu\_Item Table**

**Contains individual menu items with Thai names and pricing.**

CREATE TABLE Menu\_Item (

Item\_ID NUMBER,

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,

PRIMARY KEY(Item\_ID),

CONSTRAINT fk\_menu FOREIGN KEY (Menu\_ID) REFERENCES Menu(Menu\_ID) ON DELETE CASCADE

);

|  |
| --- |
| INSERT INTO Menu\_Item (Item\_ID, Menu\_ID, Thai\_Name, Price) VALUES(101,1,'Steak Sam Cha',140); |
| INSERT INTO Menu\_Item (Item\_ID, Menu\_ID, Thai\_Name, Price) VALUES(102,1,'Steak (Moo,Gai)/(Neua,Pla)',70); |
| INSERT INTO Menu\_Item (Item\_ID, Menu\_ID, Thai\_Name, Price) VALUES(103,1,'Steak Prikthai Dam (Moo,Gai)/(Neua,Pla)',70); |
| INSERT INTO Menu\_Item (Item\_ID, Menu\_ID, Thai\_Name, Price) VALUES(104,1,'Burger (Moo,Gai)/(Neua,Pla)',50); |
| INSERT INTO Menu\_Item (Item\_ID, Menu\_ID, Thai\_Name, Price) VALUES(105,1,'Salad Phak',50); |

**4. Translation Table**

**Stores English translations for Thai menu items.**

CREATE TABLE Translation (

Translation\_ID NUMBER GENERATED BY DEFAULT AS IDENTITY PRIMARY KEY,

Item\_ID NUMBER NOT NULL,

Thai\_Name VARCHAR2(255) 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

);

|  |
| --- |
| INSERT INTO Translation (Translation\_ID, Item\_ID, English\_Name, Description) VALUES(201,101,'Steak Sam Cha','3Cha Steak','Choose 3 pieces of steak - Pork, Chicken, Fish, Beef'); |
| INSERT INTO Translation (Translation\_ID, Item\_ID, English\_Name, Description) VALUES(202,102,'Steak (Moo,Gai)/(Neua,Pla)','Steak (Pork, Chicken) / (Beef, Fish)','Grilled steak served with side salad and sauce'); |
| INSERT INTO Translation (Translation\_ID, Item\_ID, English\_Name, Description) VALUES(203,103,'Steak Prikthai Dam (Moo,Gai)/(Neua,Pla)','Black Pepper Steak (Pork, Chicken) / (Beef, Fish)','Steak seasoned with black pepper sauce'); |
| INSERT INTO Translation (Translation\_ID, Item\_ID, English\_Name, Description) VALUES(204,104,'Burger (Moo,Gai)/(Neua,Pla)','Burger (Pork, Chicken) / (Beef, Fish)','Juicy burger served with fries'); |

**5. Image Table**

**Contains image URLs for menu items.**

CREATE TABLE Image (

Image\_ID NUMBER,

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,

PRIMARY KEY(Image\_ID),

CONSTRAINT fk\_item\_image FOREIGN KEY (Item\_ID) REFERENCES Menu\_Item(Item\_ID) ON DELETE CASCADE

);

INSERT INTO Image (image\_ID, Item\_ID, Image\_URL) VALUES

(1, 'https://example.com/padthai.jpg'),

(2, 'https://example.com/tomyum.jpg'),

(3, 'https://example.com/somtum.jpg'),

(4, 'https://example.com/khaomangai.jpg'),

(5, 'https://example.com/friedtofu.jpg'),

(6, 'https://example.com/greencurry.jpg'),

(7, 'https://example.com/roastduck.jpg');

**6. Improved Queries for Summary & Analytics**

**1. Retrieve Menus Based on Shop Location (GPS)**

SELECT m.Menu\_ID, m.Menu\_Name, s.Shop\_Name, s.GPS\_Latitude, s.GPS\_Longitude

FROM Menu m

JOIN Shop s ON m.Shop\_ID = s.Shop\_ID

WHERE s.GPS\_Latitude BETWEEN 13.70 AND 13.80

AND s.GPS\_Longitude BETWEEN 100.48 AND 100.55;

**2. Count of Menu Items Per Shop**

SELECT s.Shop\_Name, COUNT(mi.Item\_ID) AS Total\_Menu\_Items

FROM Shop s

JOIN Menu m ON s.Shop\_ID = m.Shop\_ID

JOIN Menu\_Item mi ON m.Menu\_ID = mi.Menu\_ID

GROUP BY s.Shop\_Name

ORDER BY Total\_Menu\_Items DESC;

**3. Most Expensive and Cheapest Items in Each Menu**

SELECT m.Menu\_Name, MAX(mi.Price) AS Most\_Expensive, MIN(mi.Price) AS Cheapest

FROM Menu m

JOIN Menu\_Item mi ON m.Menu\_ID = mi.Menu\_ID

GROUP BY m.Menu\_Name;

**4. Retrieve English Translations for All Menu Items**

SELECT mi.Thai\_Name, t.English\_Name, t.Description

FROM Menu\_Item mi

JOIN Translation t ON mi.Item\_ID = t.Item\_ID

ORDER BY mi.Thai\_Name;

**5. Retrieve Image Links for Menu Items**

SELECT mi.Thai\_Name, i.Image\_URL

FROM Menu\_Item mi

JOIN Image i ON mi.Item\_ID = i.Item\_ID

ORDER BY mi.Thai\_Name;