CS 353 Database Systems

Design Report

Group - 20

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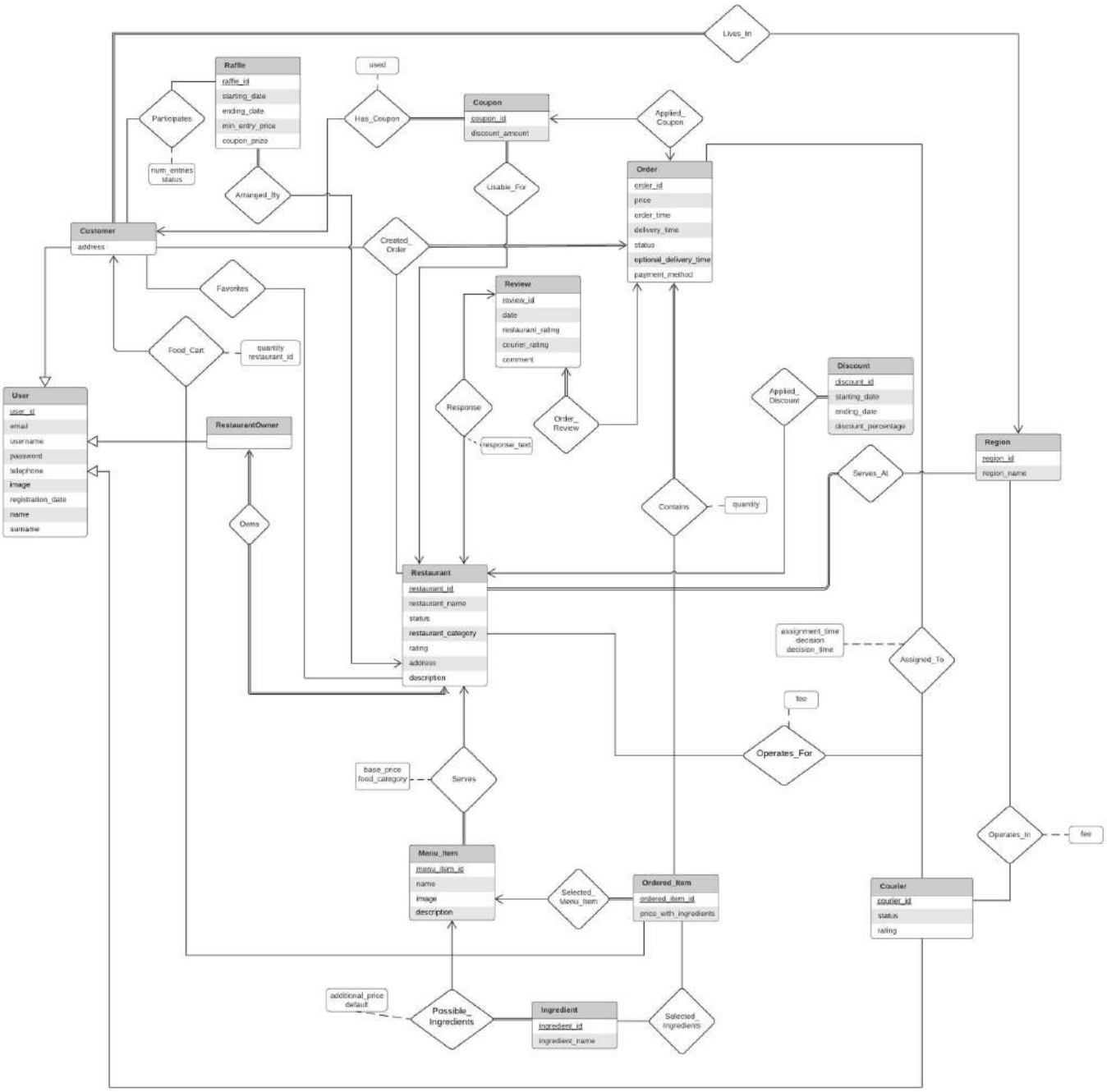


2. Relational Schemas

2.1. User Table

Relational Model

User(user_id, name, surname, email, username, password, telephone, registration_date, image)

Functional Dependencies

user_id → name, surname, email, username, password, telephone, registration_date, image
username → user_id, name, surname, email, password, telephone, registration_date, image
email → user_id, name, surname, username, password, telephone, registration_date, image
telephone → user_id, name, surname, email, username, password, registration_date, image

Candidate Keys

{(user_id), (username), (email), (telephone)}

Normal Form

BCNF

Table Definition

```
CREATE TABLE User(
    user_id INT AUTO_INCREMENT,
    name VARCHAR(32) NOT NULL,
    surname VARCHAR(32),
    email VARCHAR(64) NOT NULL UNIQUE,
    username VARCHAR(32) NOT NULL UNIQUE,
```

```sql
    password VARCHAR(32) NOT NULL,
    telephone CHAR(10) NOT NULL UNIQUE,
    registration_date DATE NOT NULL,
    image VARCHAR(64), --stored as link

    PRIMARY KEY(user_id),
);
```

2.2. Customer Table

Relational Model

Customer(<u>customer_id</u>, address)
    FK: customer_id references User

Functional Dependencies

customer_id → address

Candidate Keys

{(customer_id)}

Normal Form

BCNF

Table Definition

```sql
CREATE TABLE Customer(
    customer_id INT,
    address VARCHAR(128),

    PRIMARY KEY(customer_id),
    FOREIGN KEY(customer_id) REFERENCES User
);
```

2.3. Restaurant Table

Relational Model

Restaurant(<u>restaurant_id</u>, owner_id, restaurant_name, rating, address, description, restaurant_category, status)

FK: owner_id references User

Functional Dependencies

restaurant_id → owner_id, restaurant_name, rating, address, description, restaurant_category, status

owner_id → restaurant_id, restaurant_name, rating, address, description, restaurant_category, status

Candidate Keys

{(restaurant_id), (owner_id)}

Normal Form

BCNF

Table Definition

```sql
CREATE TABLE Restaurant(
    restaurant_id INT AUTO_INCREMENT,
    owner_id INT NOT NULL,
    restaurant_name VARCHAR(32) NOT NULL,
    rating DOUBLE,
    address VARCHAR(128),
    description VARCHAR(128),
    restaurant_category VARCHAR(32),
    status VARCHAR(16),

    PRIMARY KEY(restaurant_id),
    FOREIGN KEY(owner_id) REFERENCES User,
    CONSTRAINT `valid_rating` CHECK (rating BETWEEN 0 AND 5)
);
```

2.4. Courier Table

Relational Model

Courier(courier_id, status, rating)
FK: courier_id references User

Functional Dependencies

courier_id → status, rating

Candidate Keys

{(courier_id)}

Normal Form

BCNF

Table Definition

```
CREATE TABLE Courier(
    courier_id INT,
    status VARCHAR(16),
    rating DOUBLE,

    PRIMARY KEY(customer_id),
    FOREIGN KEY(courier_id) REFERENCES User,
    CONSTRAINT 'valid_status'
        CHECK (status in ('available', 'not_available'))
);
```

2.5. Region Table

Relational Model

Region(region_id, region_name)

Functional Dependencies

region_id → region_name

Candidate Keys

{(region_id)}

Note: Assuming that there could be two regions with the same name in different locations.

Normal Form

BCNF

Table Definition

```
CREATE TABLE Region(
    region_id INT AUTO_INCREMENT,
    region_name VARCHAR(32) NOT NULL,

    PRIMARY KEY(region_id)
);
```

2.6. Order Table

Relational Model

Order(order_id, restaurant_id, customer_id, price, order_time, delivery_time, status, optional_delivery_time)

FK: restaurant_id references Restaurant

FK: customer_id references Customer

Functional Dependencies

order_id → restaurant_id, customer_id, price, order_time, delivery_time, status, optional_delivery_time

restaurant_id, customer_id, order_time → order_id, price, delivery_time, status, optional_delivery_time

Candidate Keys

{(order_id), (restaurant_id, customer_id, order_datetime)}

Normal Form

BCNF

Table Definition

```
CREATE TABLE Order(
    order_id INT AUTO_INCREMENT,
    restaurant_id INT,
    customer_id INT,
    price DOUBLE,
    order_time DATETIME DEFAULT CURRENT_TIMESTAMP,
    delivery_time DATETIME,
    status VARCHAR(32),
    optional_delivery_time DATETIME,

    PRIMARY KEY(order_id),
    FOREIGN KEY(restaurant_id) REFERENCES Restaurant
    FOREIGN KEY(customer_id) REFERENCES Customer
);
```

2.7. Ordered_Item Table

Relational Model

Ordered_Item(ordered_item_id, price_with_ingredients, menu_item_id)
FK: menu_item_id references Menu_Item

Functional Dependencies

ordered_item_id → price_with_ingredients, menu_item_id

Candidate Keys

{(ordered_item_id)}

Normal Form

BCNF

Table Definition

```
CREATE TABLE Ordered_Item(
    ordered_item_id INT AUTO_INCREMENT,
    price_with_ingredients DOUBLE,
    menu_item_id INT,

    PRIMARY KEY(order_id),
    FOREIGN KEY(menu_item_id) REFERENCES Menu_Item
);
```

2.8. Menu_Item Table

Relational Model

Menu_Item(menu_item_id, name, image, description, base_price, food_category, restaurant_id)

FK: restaurant_id references Restaurant

Functional Dependencies

menu_item_id → name, image, description, base_price, food_category, restaurant_id

Candidate Keys

{(menu_item_id)}

Normal Form

BCNF

Table Definition

```
CREATE TABLE Menu_Item(
    menu_item_id INT AUTO_INCREMENT,
    name VARCHAR(16),
    image VARCHAR(64), --stored as link
    description VARCHAR(128),
    base_price DOUBLE NOT NULL,
    food_category VARCHAR(16) NOT NULL,

    PRIMARY KEY(menu_item_id),
    FOREIGN KEY (restaurant_id) REFERENCES Restaurant
);
```

2.9. Review Table

Relational Model

Review(<u>review_id</u>, date, restaurant_rating, courier_rating, comment, order_id)
FK: order_id references Order

Functional Dependencies

review_id → date, restaurant_rating, courier_rating, comment, order_id
order_id → review_id, restaurant_rating, courier_rating, comment

Candidate Keys

{(review_id), (order_id)}

Normal Form

BCNF

Table Definition

```sql
CREATE TABLE Review(
    review_id INT AUTO_INCREMENT,
    date DATE NOT NULL,
    restaurant_rating INT NOT NULL,
    courier_rating INT NOT NULL,
    comment VARCHAR(128),
    order_id INT,

    PRIMARY KEY(review_id),
    FOREIGN KEY(order_id) REFERENCES Order
);
```

2.10. Ingredient Table

Relational Model

Ingredient(ingredient_id, ingredient_name, menu_item_id, additional_price, default)

FK: menu_item_id references Menu_Item

Functional Dependencies

ingredient_id → ingredient_name, menu_item_id, additional_price, default

Candidate Keys

{(ingredient_id)}

Normal Form

BCNF

Table Definition

```
CREATE TABLE Ingredient(
      ingredient_id INT AUTO_INCREMENT,
      ingredient_name VARCHAR(128) NOT NULL,
      menu_item_id INT NOT NULL,
      additional_price DOUBLE NOT NULL,
      default BIT(1) NOT NULL,

      PRIMARY KEY(ingredient_id),
      FOREIGN KEY (menu_item_id) REFERENCES Menu_Item
);
```

2.11. Response Table

Relational Model

Response(<u>restaurant_id</u>, <u>review_id</u>, response_text)
FK: restaurant_id references Restaurant
FK: review_id references Review

Functional Dependencies

restaurant_id, review_id → response_text

Candidate Keys

{(restaurant_id, review_id)}

Normal Form

BCNF

Table Definition

```sql
CREATE TABLE Response(
    restaurant_id INT NOT NULL,
    review_id INT NOT NULL,
    response_text VARCHAR(128),

    PRIMARY KEY(restaurant_id, review_id),
    FOREIGN KEY(restaurant_id) REFERENCES Restaurant,
    FOREIGN KEY(review_id) REFERENCES Review
);
```

2.12. Discount Table

Relational Model

Discount(discount_id, starting_date, ending_date, discount_percentage, restaurant_id)

FK: restaurant_id references Restaurant

Functional Dependencies

discount_id → starting_date, ending_date, discount_percentage,restaurant_id

Candidate Keys

{(discount_id)}

Normal Form

BCNF

Table Definition

```
CREATE TABLE Discount(
    discount_id INT NOT NULL AUTO_INCREMENT,
    starting_date DATE NOT NULL,
    ending_date DATE NOT NULL,
    discount_percentage DOUBLE NOT NULL,
    restaurant_id INT NOT NULL,

    PRIMARY KEY(discount_id)
);
```

2.13. Favorites Table

Relational Model

Favorites(customer_id, restaurant_id)
FK: customer_id references Customer
FK: restaurant_id references Restaurant

Functional Dependencies

None

Candidate Keys

{(customer_id, restaurant_id)}

Normal Form

BCNF

Table Definition

```
CREATE TABLE Favorites(
    customer_id INT NOT NULL,
    restaurant_id INT NOT NULL,

    PRIMARY KEY(customer_id, restaurant_id),
    FOREIGN KEY(customer_id) REFERENCES Customer,
    FOREIGN KEY(restaurant_id) REFERENCES Restaurant
);
```

2.14. Serves_At Table

Relational Model

Serves_At(restaurant_id, region_id)
FK: restaurant_id references Restaurant
FK: region_id references Region

Functional Dependencies

None

Candidate Keys

{(restaurant_id, region_id)}

Normal Form

BCNF

Table Definition

```
CREATE TABLE Serves_At(
    restaurant_id INT NOT NULL,
    region_id INT NOT NULL,

    PRIMARY KEY(restaurant_id, region_id),
    FOREIGN KEY(restaurant_id) REFERENCES Restaurant,
    FOREIGN KEY(region_id) REFERENCES Region
);
```

2.15. Operates_In Table

Relational Model

Operates_In(courier_id, region_id, fee)
FK: courier_id references Courier
FK: region_id references Region

Functional Dependencies

courier_id, region_id → fee

Candidate Keys

{(courier_id,region_id)}

Normal Form

BCNF

Table Definition

```
CREATE TABLE Operates_In(
      courier_id INT NOT NULL,
      region_id INT NOT NULL,
      fee DOUBLE NOT NULL,
      PRIMARY KEY (courier_id, region_id),
      FOREIGN KEY (courier_id) REFERENCES Courier,
      FOREIGN KEY (region_id) REFERENCES Region
);
```

2.16. Assigned_To Table

Relational Model

Assigned_To (order_id, courier_id, assignment_time, decision, decision_time)
FK: order_id references Order
FK: courier_id references Courier

Functional Dependencies

order_id, courier_id → assignment_time, decision, decision_time

Candidate Keys

{(order_id, courier_id)}

Normal Form

BCNF

Table Definition

```
CREATE TABLE Assigned_To(
      order_id INT NOT NULL,
      courier_id INT NOT NULL,
      assignment_time TIME NOT NULL,
      decision VARCHAR(20) NOT NULL,
      decision_time TIME NOT_NULL,
      PRIMARY KEY (order_id, courier_id),
      FOREIGN KEY (order_id) REFERENCES Order,
      FOREIGN KEY (courier_id) REFERENCES Courier
);
```

2.17. Contains Table

Relational Model

Contains (order_id, ordered_item_id, quantity)
FK: order_id references Order
FK: ordered_item_id references Order_Item

Functional Dependencies

order_id, ordered_item_id → quantity

Candidate Keys

{(order_id, ordered_item_id)}

Normal Form

BCNF

Table Definition

```
CREATE TABLE Contains(
      order_id INT NOT NULL,
      ordered_item_id INT NOT NULL,
      quantity INT NOT NULL,
      PRIMARY KEY (order_id, ordered_item_id),
      FOREIGN KEY (order_id) REFERENCES Order,
      FOREIGN KEY (order_item_id) REFERENCES Ordered_Item
);
```

2.18. Selected_Ingredients Table

Relational Model

Selected_Ingredients (order_item_id, ingredient_id)
FK: order_id references Order
FK: ingredient_id references Ingredient

Functional Dependencies

None

Candidate Keys

{(order_item_id, ingredient_id)}

Normal Form

BCNF

Table Definition

```
CREATE TABLE Selected_Ingredients(
      ordered_item_id INT NOT NULL,
      ingredient_id INT NOT NULL,
      PRIMARY KEY (ordered_item_id, ingredient_id),
      FOREIGN KEY (ordered_item_id) REFERENCES Order_Item,
      FOREIGN KEY (ingredient_id) REFERENCES Ingredient
);
```

2.19. Possible_Ingredients Table

Relational Model

Possible_Ingredients (ingredient_id, menu_item_id, additional_price, default)
FK: ingredient_id references Ingredient
FK: menu_item_id references Menu_Item

Functional Dependencies

ingredient_id, menu_item_id → additional_price, default

Candidate Keys

{(ingredient_id, menu_item_id)}

Normal Form

BCNF

Table Definition

```
CREATE TABLE Possible_Ingredients(
      ingredient_id INT NOT NULL,
      menu_item_id INT NOT NULL,
      additional_price DOUBLE NOT NULL,
      default BIT(1) NOT NULL,

      PRIMARY KEY (ingredient_item_id, menu_item_id),
      FOREIGN KEY (ingredient_item_id) REFERENCES Ingredient,
      FOREIGN KEY (menu_item_id) REFERENCES Menu_Item
);
```

2.20. Operates_For Table

Relational Model

Operates_For (restaurant_id, courier_id, fee)
FK: restaurant_id references Restaurant
FK: courier_id references Courier

Functional Dependencies

restaurant_id, courier_id → fee

Candidate Keys

{(restaurant_id, courier_id)}

Normal Form

BCNF

Table Definition

```
CREATE TABLE Operates_For(
      restaurant_id INT NOT NULL,
      courier_id INT NOT NULL,
      fee DOUBLE NOT NULL,

      PRIMARY KEY(restaurant_id, courier_id),
      FOREIGN KEY(restaurant_id) REFERENCES Restaurant,
      FOREIGN KEY(courier_id) REFERENCES Courier
);
```

2.21. Raffle Table

Relational Model

Raffle(raffle_id, starting_date, ending_date, min_entry_price, coupon_prize, restaurant_id)

Functional Dependencies

raffle_id → starting_date, ending_date, min_entry_price, coupon_prize, restaurant_id
restaurant_id, starting_date → raffle_id,ending_date, min_entry_price, coupon_prize
restaurant_id, ending_date → raffle_id,starting_date, min_entry_price, coupon_prize

Note: Assuming that a restaurant arranges only one raffle at a time.

Candidate Keys

{(raffle_id), (restaurant_id, starting_date), (restaurant_id, ending_date)}

Normal Form

BCNF

Table Definition

```
CREATE TABLE Raffle(
      raffle_id INT NOT NULL AUTO_INCREMENT,
      starting_date DATETIME NOT NULL,
      ending_date DATETIME NOT NULL,
      min_entry_prize DOUBLE,
      coupon_prize DOUBLE NOT NULL,
      restaurant_id INT NOT NULL,

      PRIMARY KEY(raffle_id),
      FOREIGN KEY(restaurant_id) REFERENCES Restaurant
);
```

2.22. Coupon Table

Relational Model

Coupon (coupon_id, discount_amount, customer_id, used, restaurant_id)
FK: customer_id references Customer
FK: restaurant_id references Restaurant

Functional Dependencies

coupon_id → discount_amount, customer_id, used, restaurant_id

Candidate Keys

{(coupon_id)}

Normal Form

BCNF

Table Definition

```
CREATE TABLE Coupon(
    coupon_id INT NOT NULL AUTO_INCREMENT,
    discount_amount DOUBLE NOT NULL,
    customer_id INT NOT NULL,
    used BIT(1),
    restaurant_id INT NOT NULL,

    PRIMARY KEY(coupon_id),
    FOREIGN KEY(customer_id) REFERENCES Customer
    FOREIGN KEY(restaurant_id) REFERENCES Restaurant
);
```

2.23. Participates Table

Relational Model

Participates (<u>user_id</u>, <u>raffle_id</u>, num_entries, status)
FK: user_id references Customer
FK: raffle_id references Raffle

Functional Dependencies

user_id, raffle_id→ num_entries, status

Candidate Keys

{(user_id, raffle_id)}

Normal Form

BCNF

Table Definition

```
CREATE TABLE Participates(
      user_id INT NOT NULL,
      raffle_id INT NOT NULL,
      num_entries INT NOT NULL,
      status VARCHAR(16),

      PRIMARY KEY(user_id, raffle_id),
      FOREIGN KEY(user_id) REFERENCES Customer,
      FOREIGN KEY(raffle_id) REFERENCES Raffle
```

2.24. Applied_Coupon Table

Relational Model

Applied_Coupon(order_id, coupon_id)
FK: order_id references Order
FK: coupon_id references Coupon

Functional Dependencies

order_id → coupon_id
coupon_id → order_id

Candidate Keys

{(order_id), (coupon_id)}

Normal Form

BCNF

Table Definition

```
CREATE TABLE Applied_Coupon(
      order_id INT NOT NULL,
      coupon_id INT NOT NULL,

      PRIMARY KEY(order_id),
      FOREIGN KEY(order_id) REFERENCES Order,
      FOREIGN KEY(coupon_id) REFERENCES Coupon
);
```

2.25. Food_Cart Table

Relational Model

Food_Cart (user_id, ordered_item_id, restaurant_id)
FK: user_id references Customer
FK: ordered_item_id references Ordered_Item
FK: restaurant_id references Restaurant

Functional Dependencies

None

Candidate Keys

{(user_id, ordered_item_id, restaurant_id)}

Normal Form

BCNF

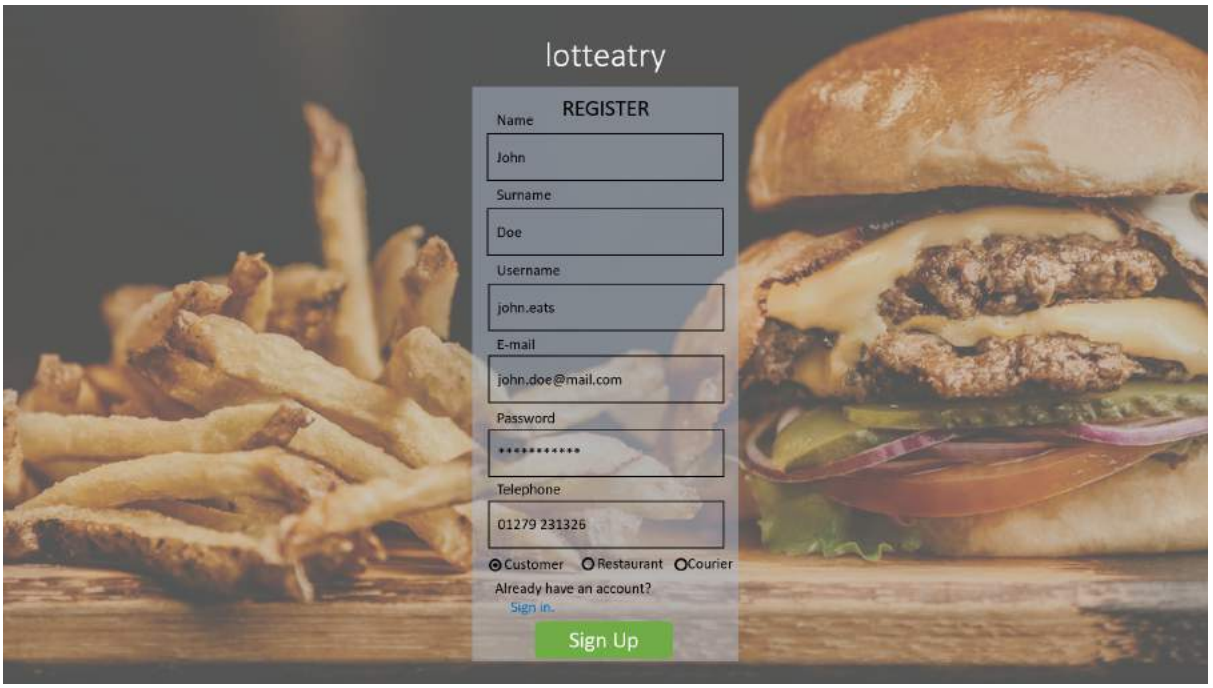
Table Definition

```
CREATE TABLE Food_Cart(
      user_id INT NOT NULL,
      ordered_item_id INT NOT NULL,
      restaurant_id INT NOT NULL,

      PRIMARY KEY(user_id, ordered_item_id,restaurant_id),
      FOREIGN KEY(user_id) REFERENCES Customer,
      FOREIGN KEY(ordered_item_id) REFERENCES Ordered_Item
      FOREIGN KEY(restaurant_id) REFERENCES Restaurant
);
```

3. User Interface Design and Corresponding SQL Statements

3.1. Login and Signup Functionalities

3.1.1. Sign-Up Page



Customer Sign-up

```
INSERT INTO User (name, surname, email, username, password, telephone, registration_date)
VALUES (@name, @surname, @email, @username, @password, @telephone, CURDATE())

--@user_id is the auto-incremented id of newly created User above
INSERT INTO Customer VALUES (@user_id)
```

Restaurant Sign-up

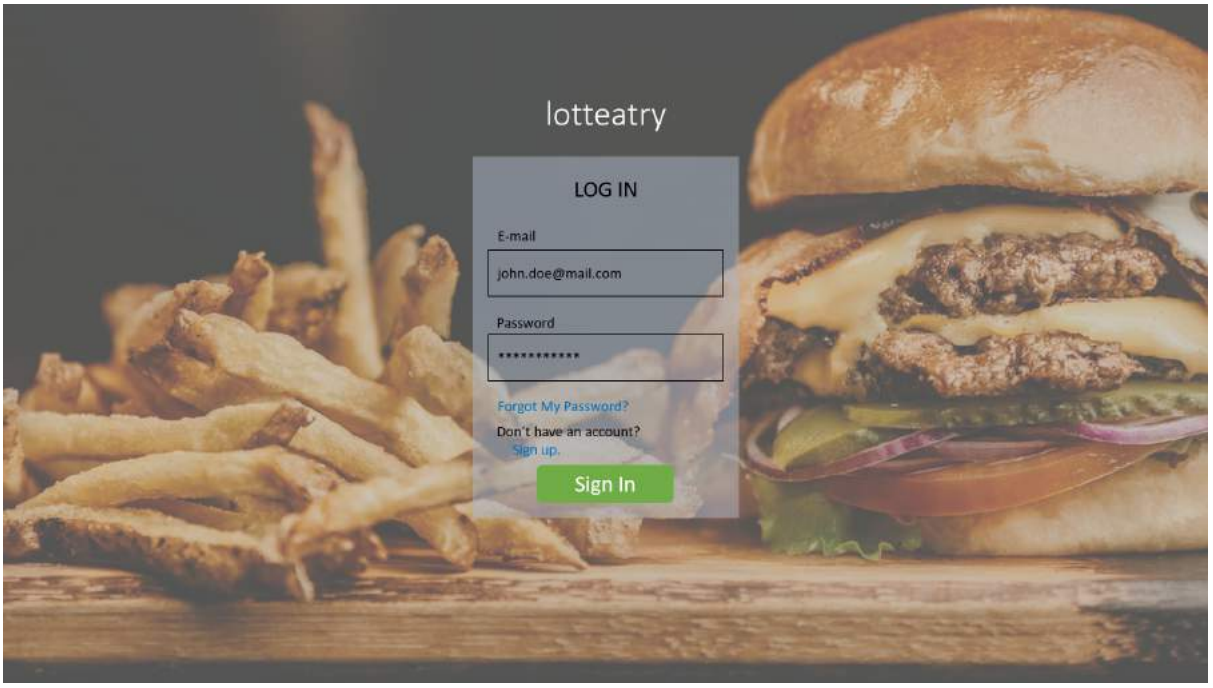
```
INSERT INTO User (name, surname, email, username, password, telephone, registration_date)
VALUES (@name, @surname, @email, @username, @password, @telephone, CURDATE())
```

```
--@user_id is the auto-incremented id of newly created User above
INSERT INTO Restaurant (owner_id, restaurant_name) VALUES (@user_id,
@restaurant_name)
```

Courier Sign-up

```
INSERT INTO User (name, surname, email, username, password, telephone,
registration_date)
  VALUES (@name, @surname, @email, @username, @password, @telephone,
CURDATE())

--@user_id is the auto-incremented id of newly created User above
INSERT INTO Courier (courier_id) VALUES (@user_id)
```

3.1.2. Login Page

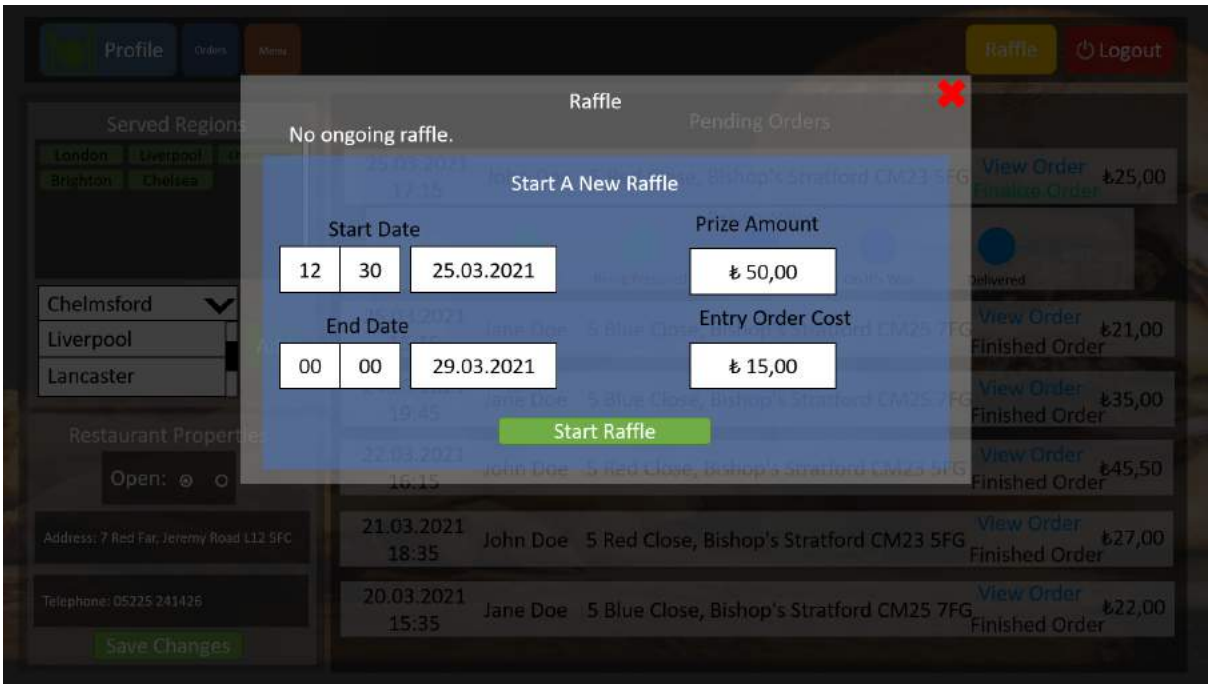


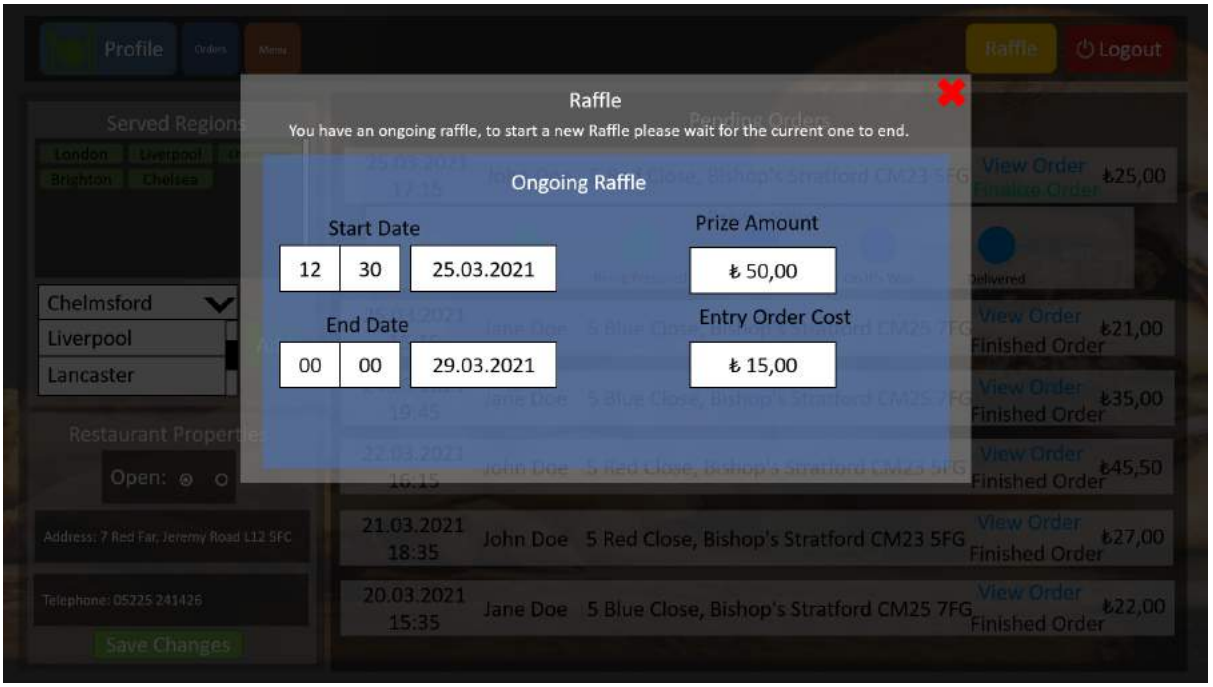
General Login For all User Types

```
select *
      FROM User
      WHERE email = @login_email
      AND password = @login_password
```

3.2. Additional requirement - Raffles

3.2.1. Restaurant Starting a Raffle





Starting a new Raffle

```
INSERT INTO Raffle (starting_date, ending_date, min_entry_price, coupon_prize, restaurant_id)
VALUES (@starting_date, @ending_date, @min_entry_price, @coupon_prize, @restaurant_id)
```

Getting The Current Raffle Info

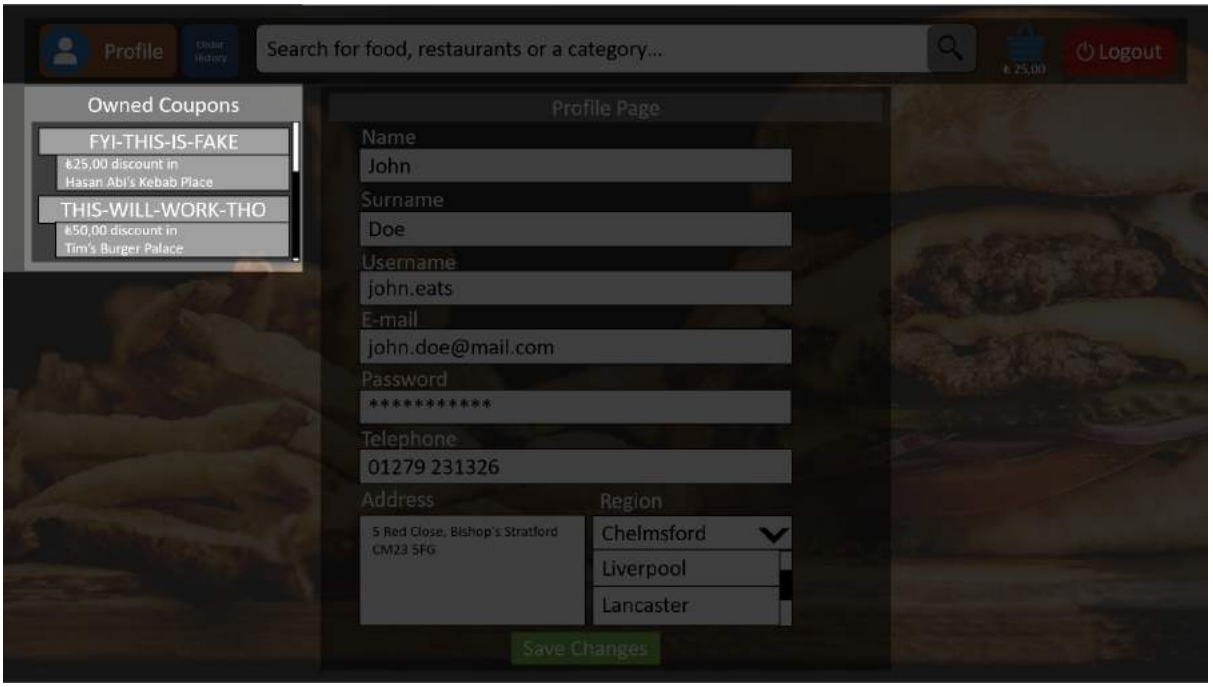
```
SELECT * FROM Raffle
WHERE restaurant_id = @restaurant_id AND (NOW() BETWEEN starting_date AND ending_date)
```

Giving the Coupon To Winner

ID of the winner "@winner_user_id" is determined in the back-end when the raffle time ends and their coupon is given as:

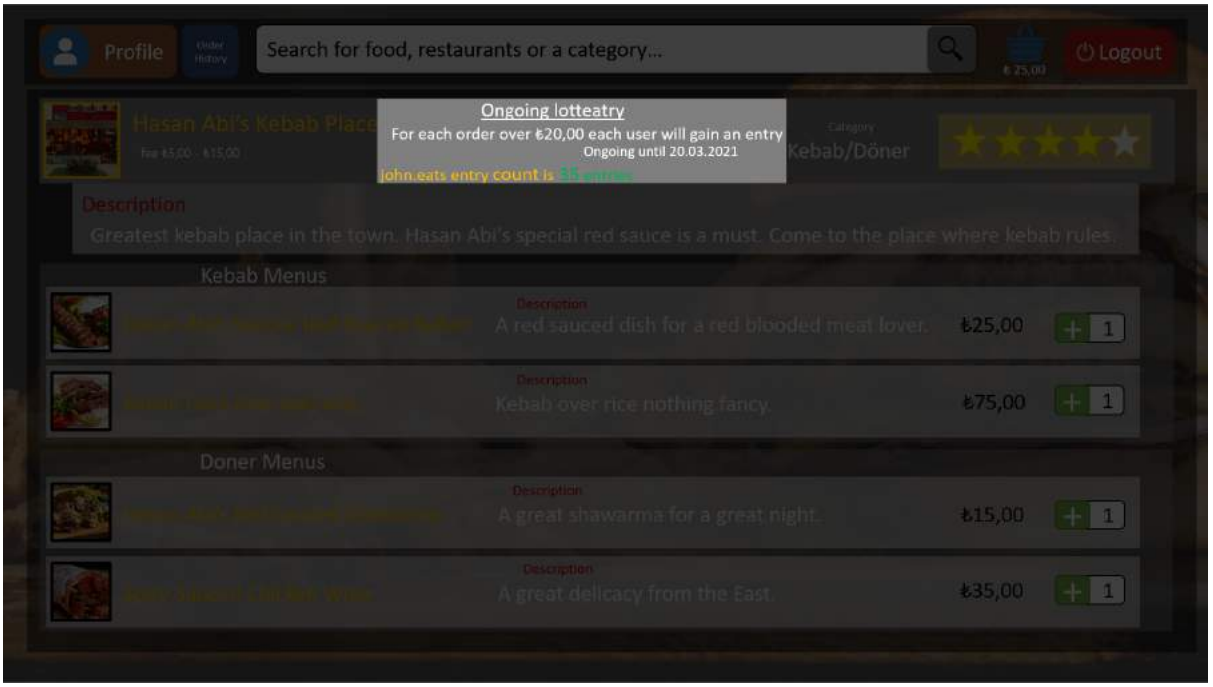
```
INSERT INTO Coupon (discount_amount, customer_id, used, restaurant_id)
VALUES (@discount_amount, @winner_user_id, 0, @restaurant_id)

UPDATE Participates
SET status = 'Won'
WHERE user_id = @winner_user_id

UPDATE Participates
SET status = 'Lost'
WHERE user_id <> @winner_user_id
```

3.2.2. Customer Seeing Their Coupons In Their Profile



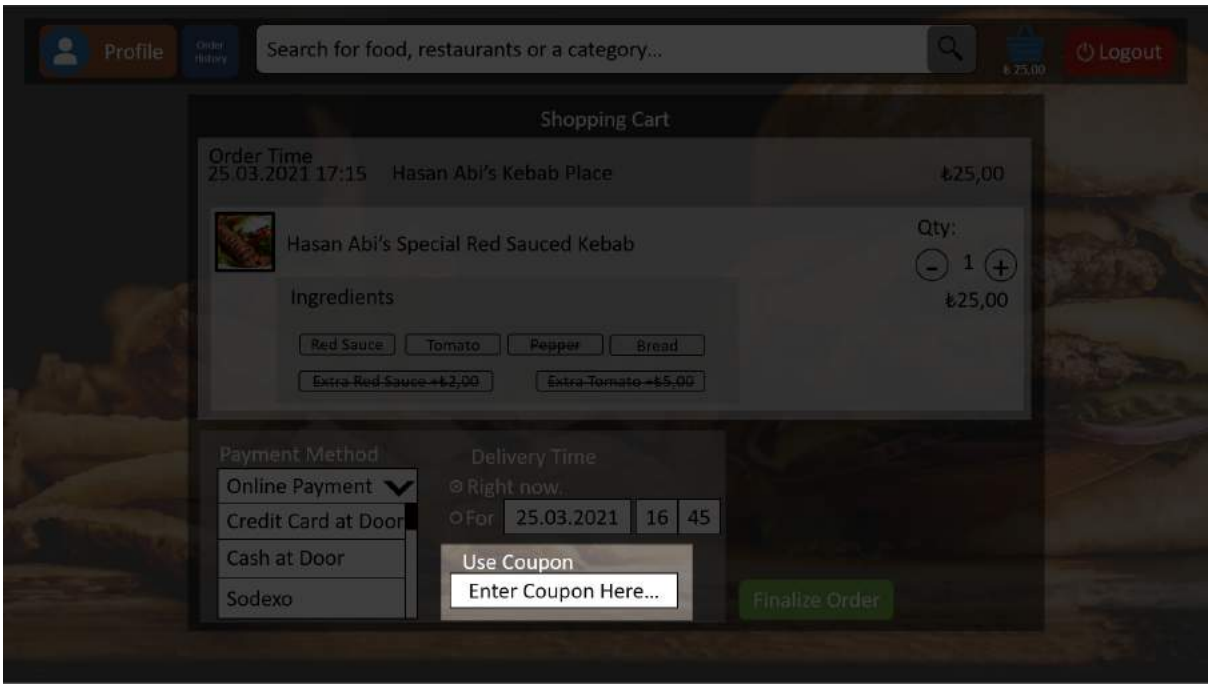

```
SELECT coupon_id, discount_amount, restaurant_name
FROM Coupon
INNER JOIN Restaurant ON Coupon.restaurant_id = Restaurant.restaurant_id
WHERE customer_id = @customer_id AND used <> 1
```

3.2.3. Current Raffle Details of a Restaurant




```
SELECT starting_date, ending_date, min_entry_prize, coupon_prize,
num_entries
FROM Raffle
INNER JOIN Restaurant ON Raffle.restaurant_id = Restaurant.restaurant_id
INNER JOIN Participates ON Raffle.raffle_id = Participates.raffle_id
WHERE restaurant_id = @restaurant_id AND @customer_id = customer_id
AND (NOW() BETWEEN starting_date AND ending_date)
```

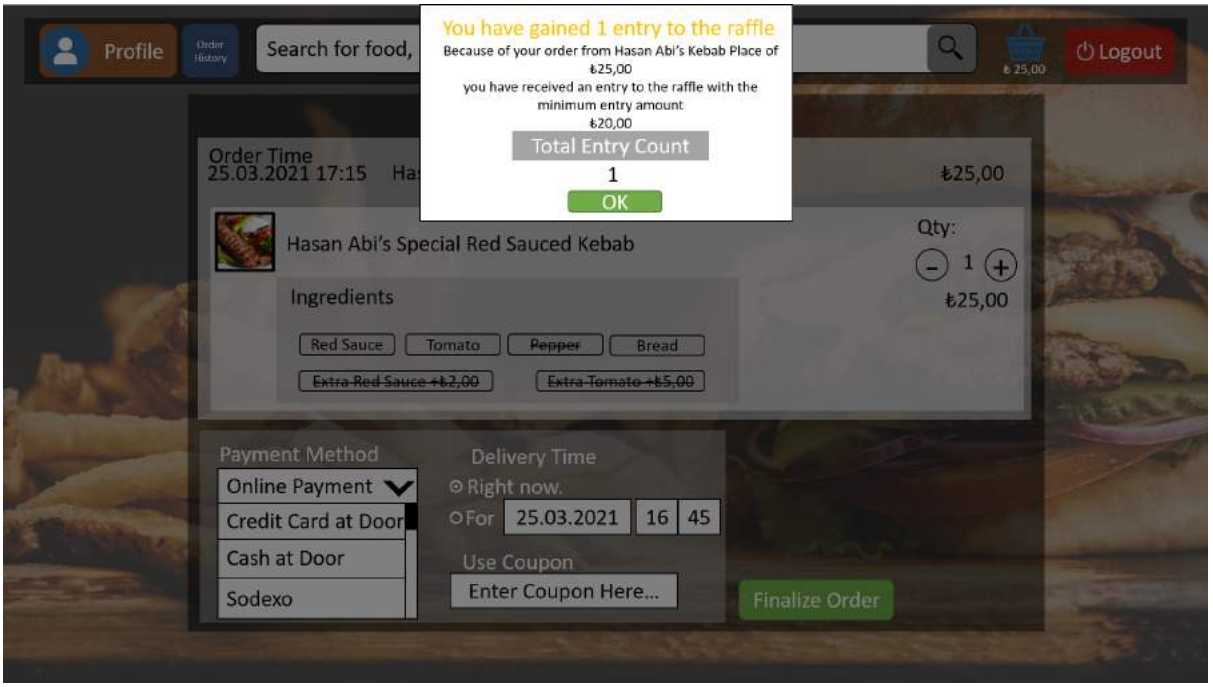
3.2.4. Customer Applying a Coupon When Finalizing an Order



After The Order is Created:

```
INSERT INTO Applied_Coupon
VALUES (@coupon_id, @order_id)

UPDATE Coupon
SET used = 1
WHERE coupon_id = @coupon_id
```

3.2.5. Customer Gaining New Entry to a Raffle



To see whether the customer already has entries in the raffle, use

```
SELECT EXISTS(SELECT *
    FROM Participates WHERE user_id = @user_id)
```

If customer already have entries

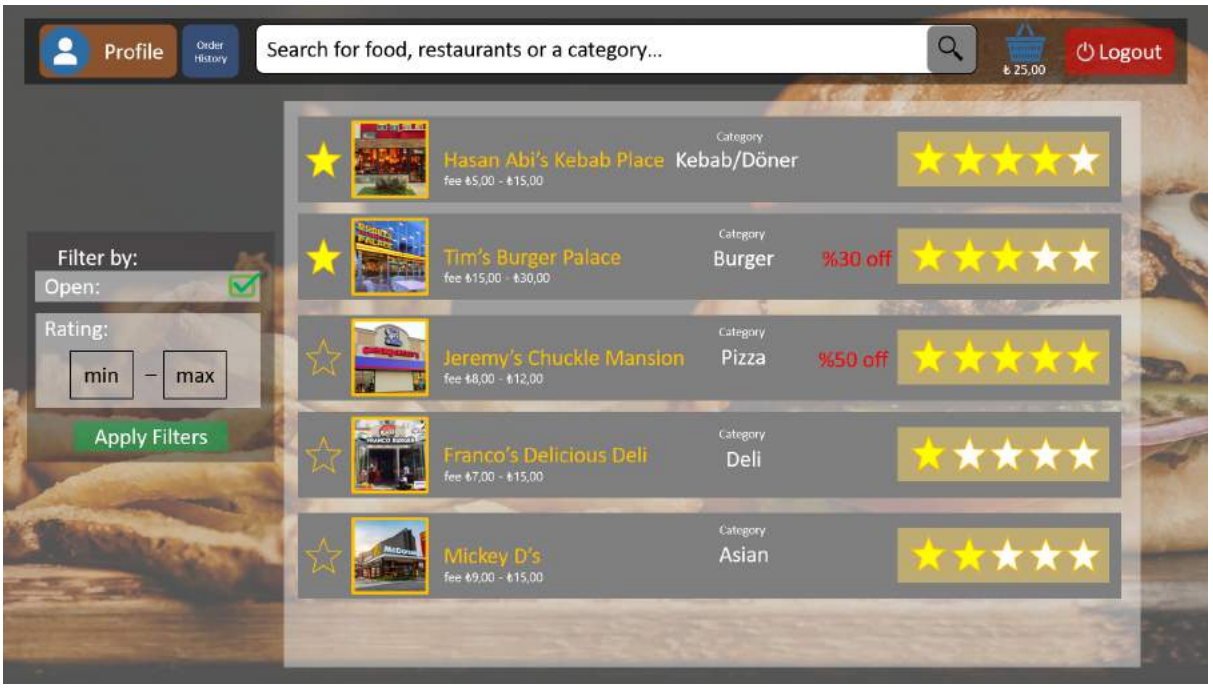
```
UPDATE Participates
SET num_entries = num_entries + @new_entries
WHERE user_id = @user_id
```

If customer does not have any entries

```
INSERT INTO Participates
VALUES(@user_id, @raffle_id , @new_entries, 'WAITING')
```

3.3. Customer User Interface

3.3.1. Restaurant List Page



Listing Restaurants

Two separate select statements get the favorited and non-favorited restaurants from the database. The result of these queries are then merged and listed to the customer, displaying the "favorited" restaurants first.

```
SELECT restaurant_name, rating, restaurant_category,
MIN(Operates_In.fee),    MAX(Operates_In.fee),    Restaurant.status,    FROM
Restaurant
INNER JOIN Serves_At ON Serves_At.restaurant_id = Restaurant.restaurant_id
INNER JOIN Region ON Region.region_id = Serves_At.region_id
INNER JOIN Lives_In ON Lives_In.region_id = Region.region_id
INNER JOIN Customer ON Customer.user_id = Lives_In.user_id
INNER JOIN Operates_In ON Operates_in.region_id = Region.region_id
INNER JOIN Courier ON Courier.courier_id = Operates_In.courier_id
WHERE restaurant_id IN
(SELECT DISTINCT restaurant_id FROM RESTAURANT
INNER JOIN Serves_At ON Serves_At.restaurant_id = Restaurant.restaurant_id
INNER JOIN Region ON Region.region_id = Serves_At.region_id
INNER JOIN Lives_In ON Lives_In.region_id = Region.region_id
INNER JOIN Customer ON Customer.user_id = Lives_In.user_id
INNER JOIN Operates_In ON Operates_in.region_id = Region.region_id
INNER JOIN Courier ON Courier.courier_id = Operates_In.courier_id
```

```
WHERE (Customer.user_id = @user_id)
AND (Courier.status = 'available')
AND (Restaurant.status = @status)
AND rating BETWEEN @rating_min AND @rating_max
AND restaurant_id IN
(SELECT restaurant_id FROM Restaurant
INNER JOIN Favorites ON Favorites.restaurant_id = Restaurant.restaurant_id
WHERE Favorites.user_id = session_user_id)
)
```

```
SELECT restaurant_name, rating, restaurant_category,
MIN(Operates_In.fee),    MAX(Operates_In.fee),    Restaurant.status,    FROM
Restaurant
INNER JOIN Serves_At ON Serves_At.restaurant_id = Restaurant.restaurant_id
INNER JOIN Region ON Region.region_id = Serves_At.region_id
INNER JOIN Lives_In ON Lives_In.region_id = Region.region_id
INNER JOIN Customer ON Customer.user_id = Lives_In.user_id
INNER JOIN Operates_In ON Operates_in.region_id = Region.region_id
INNER JOIN Courier ON Courier.courier_id = Operates_In.courier_id
WHERE restaurant_id IN
(SELECT DISTINCT restaurant_id FROM Restaurant
INNER JOIN Serves_At ON Serves_At.restaurant_id = Restaurant.restaurant_id
INNER JOIN Region ON Region.region_id = Serves_At.region_id
INNER JOIN Lives_In ON Lives_In.region_id = Region.region_id
INNER JOIN Customer ON Customer.user_id = Lives_In.user_id
INNER JOIN Operates_In ON Operates_in.region_id = Region.region_id
INNER JOIN Courier ON Courier.courier_id = Operates_In.courier_id
WHERE (Customer.user_id = @user_id)
AND (Courier.status = 'available')
AND (Restaurant.status = @status)
AND rating BETWEEN @rating_min AND @rating_max
AND restaurant_id NOT IN
(SELECT restaurant_id FROM Restaurant
INNER JOIN Favorites ON Favorites.restaurant_id = Restaurant.restaurant_id
WHERE Favorites.user_id = session_user_id)
)
```

Displaying Ongoing Discounts

```
SELECT discount_percentage, restaurant_id FROM Discount
WHERE (NOW() BETWEEN starting_date AND ending_date)
```

Searching From The Searchbar at the Top

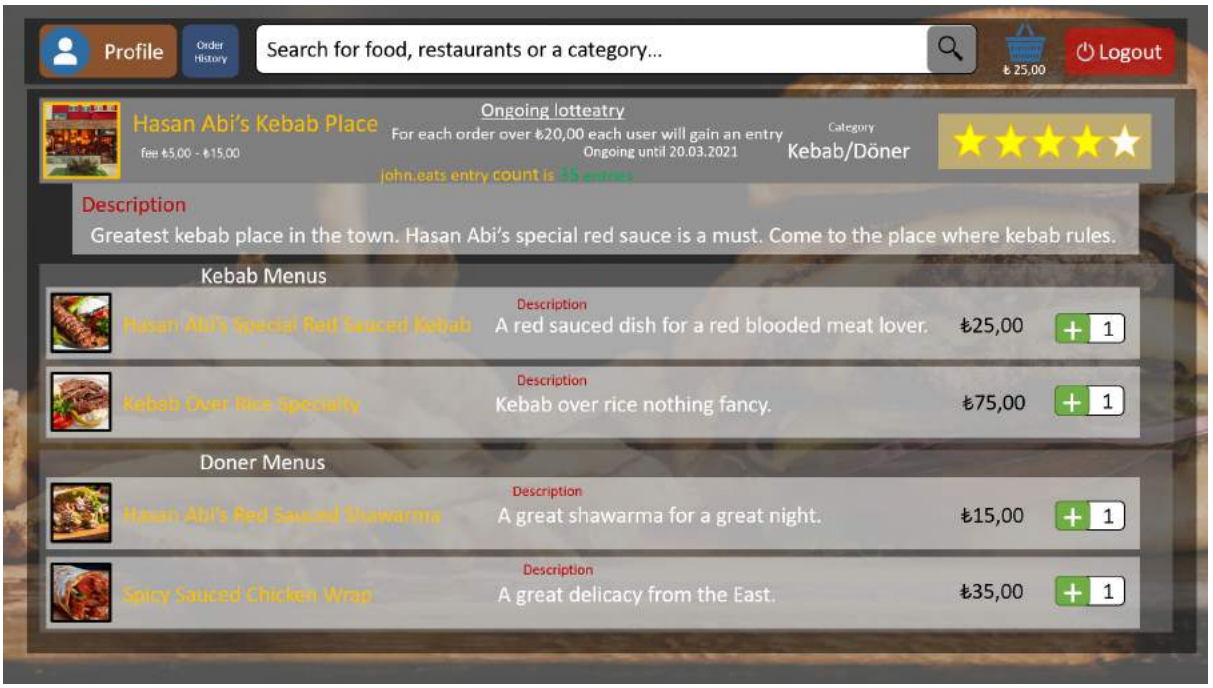
```
SELECT restaurant_name, rating, restaurant_category,
MIN(Operates_In.fee),        MAX(Operates_In.fee),        Restaurant.status,
discount_percentage FROM Restaurant
INNER JOIN Discount ON Discount.restaurant_id = Restaurant.restaurant_id
INNER JOIN Serves_At ON Serves_At.restaurant_id = Restaurant.restaurant_id
```

```
INNER JOIN Region ON Region.region_id = Serves_At.region_id
INNER JOIN Lives_In ON Lives_In.region_id = Region.region_id
INNER JOIN Customer ON Customer.user_id = Lives_In.user_id
INNER JOIN Operates_In ON Operates_in.region_id = Region.region_id
WHERE restaurant_id IN
(SELECT DISTINCT restaurant_id FROM Restaurant
INNER JOIN Serves_At ON Serves_At.restaurant_id = Restaurant.restaurant_id
INNER JOIN Region ON Region.region_id = Serves_At.region_id
INNER JOIN Lives_In ON Lives_In.region_id = Region.region_id
INNER JOIN Customer ON Customer.user_id = Lives_In.user_id
INNER JOIN Operates_In ON Operates_in.region_id = Region.region_id
INNER JOIN Menu_Item ON Menu_Item.restaurant_id = Restaurant.restaurant_id
WHERE restaurant_name LIKE '%@search_input%'
OR restaurant_category LIKE '%@search_input%'
OR Menu_Item.name LIKE '%@search_input%'
)
```

Adding a new Favorite Restaurant

```
INSERT INTO Favorites VALUES (@customer_id, @restaurant_id)
```

3.3.2. Restaurant Menu Page



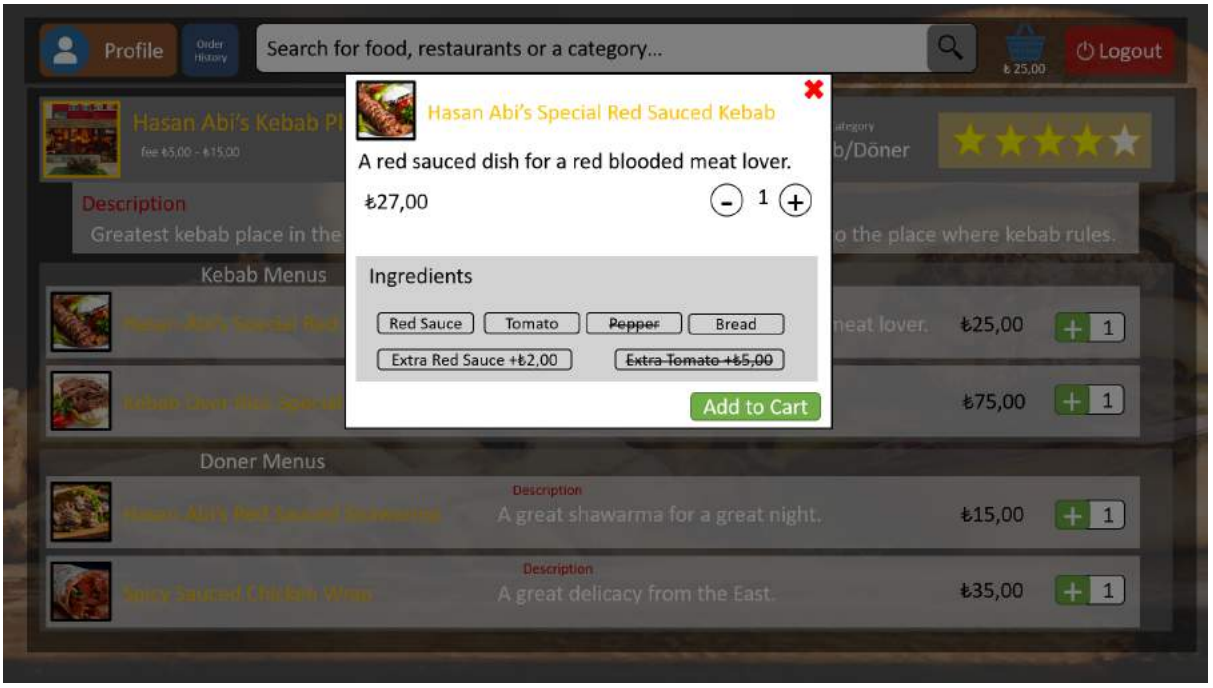
Restaurant Information

```
SELECT name, image, restaurant_category, rating, description
FROM Restaurant
WHERE restaurant_id = @restaurant_id
```

Menu Items

```
SELECT name, image, base_price, food_category, description
FROM Menu_Item INNER JOIN Restaurant ON Restaurant.restaurant_id =
Menu_Item.restaurant_id
WHERE restaurant_id = @restaurant_id
ORDER BY food_category
```

3.3.3. Adding Item To Cart



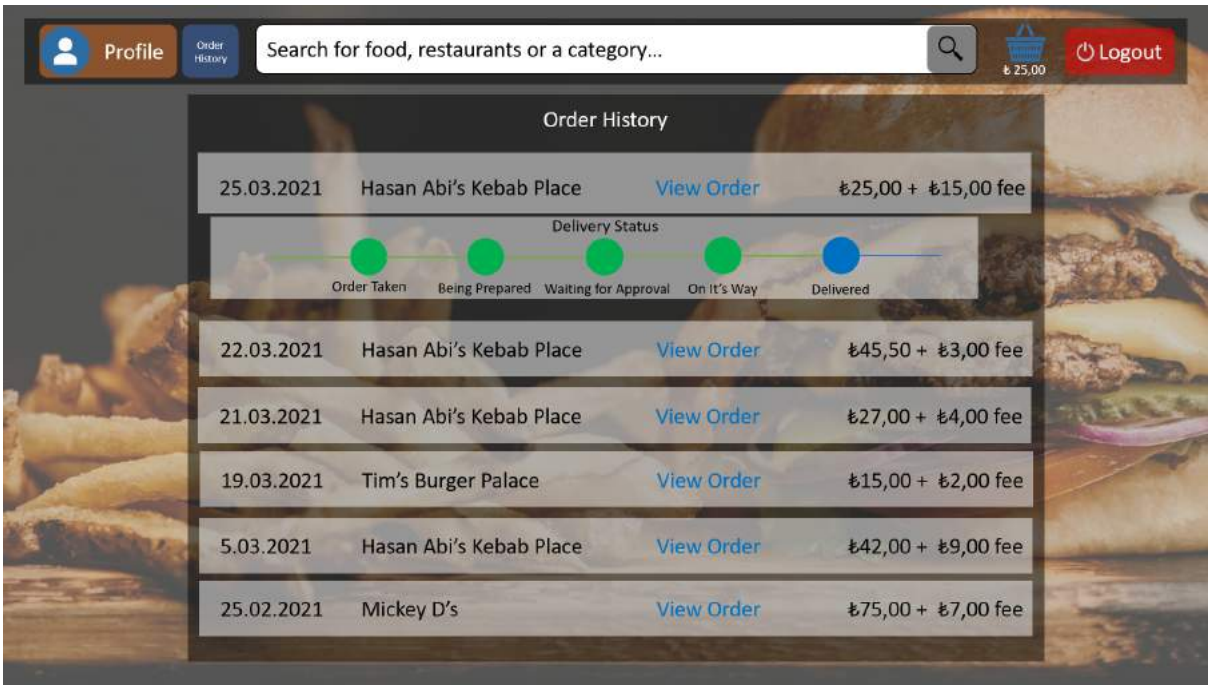
Food and Ingredients Information

```
SELECT * FROM Menu_Item
WHERE menu_item_id = @menu_item_id

SELECT * FROM Ingredients
WHERE menu_item_id = @menu_item_id
```

Adding to the Cart

```
INSERT INTO Ordered_Item (price_with_ingredients)
VALUES (@price_with_ingredients)
--@ordered_item_id is the auto-incremented id of newly created Ordered_Item
above
Then, for each ingredient selected on the screen: @ingredient_id
    INSERT INTO Selected_Ingredients VALUES (@ordered_item_id,
@ingredient_id)

INSERT INTO Food_Cart (user_id, ordered_item_id, restaurant_id)
VALUES (@user_id, @ordered_item_id, @restaurant_id)
```

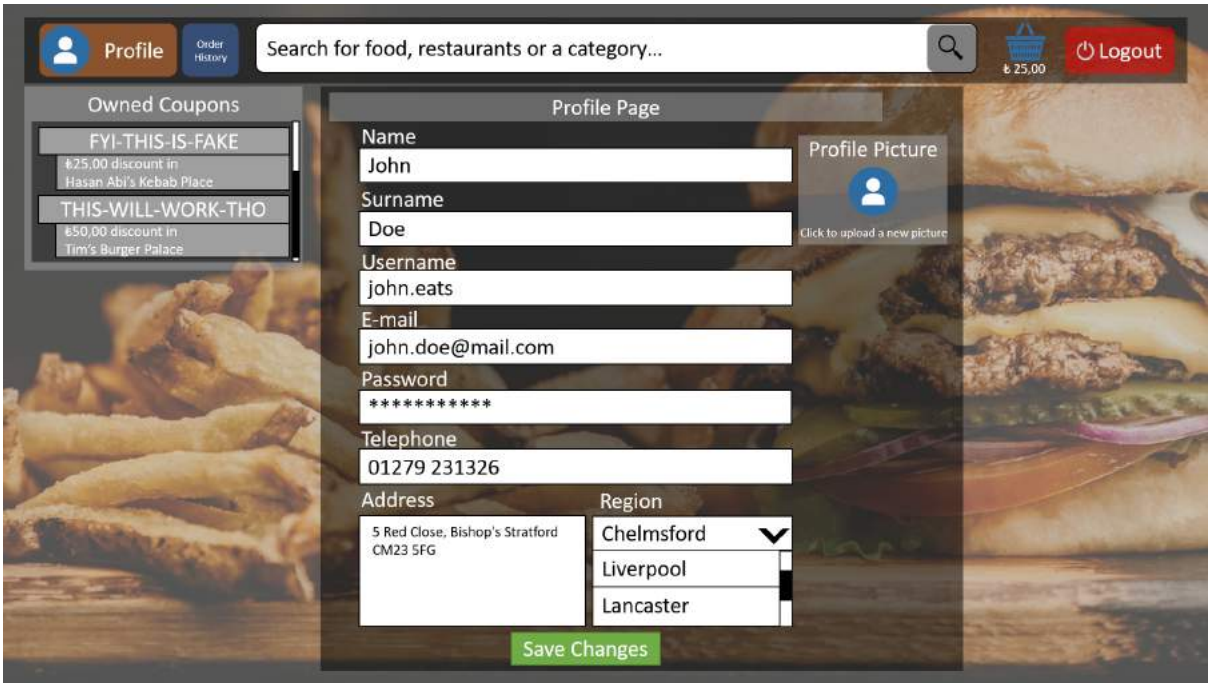
3.3.4. Order History Page



Getting the Order History

```
SELECT order_id, price, order_time, delivery_time, status, courier_tip,
restaurant_tip, payment_method,
restaurant_name, restaurant_id FROM Order
INNER JOIN Restaurant ON Restaurant.restaurant_id = Order.restaurant_id
WHERE user_id = @user_id
ORDER BY order_time DESC
```

3.3.5. Profile Page



Getting the Customer Information

```
SELECT *
from User INNER JOIN Customer ON User.user_id = Customer.customer_id
WHERE user_id = @user_id
```

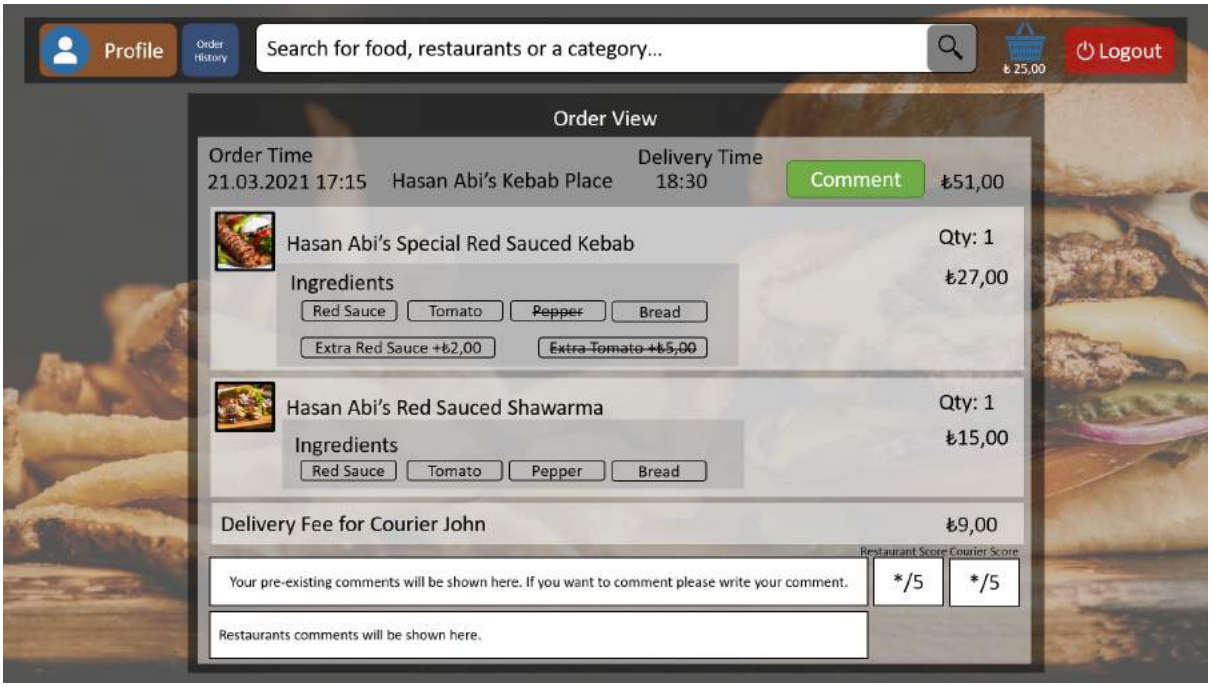
Getting The Region List

```
SELECT name FROM Region
```

Updating The Customer Information

```
UPDATE User
SET email = @new_email,
    username = @new_username,
    password = @new_password,
    telephone = @new_telephone,
    name = @new_name,
    surname = @new_surname,
    region_id = @new_region_id,
    image = @new_image_link,
WHERE user_id = @user_id

UPDATE Customer
SET address = @new_address
WHERE customer_id = @user_id
```

3.3.6. Order Details and Review Page



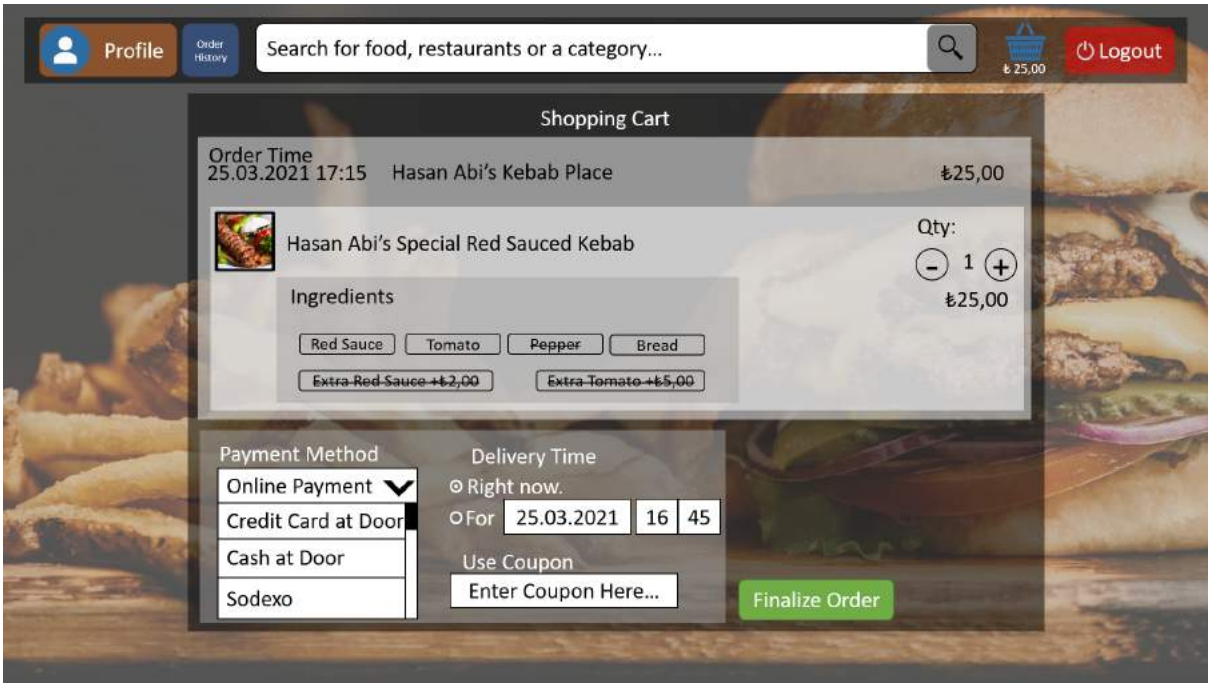
Order Details

```
SELECT order_id, restaurant_id, restaurant_name, order_time, delivery_time,
status, courier_ tip, restaurant_tip
FROM Order
INNER JOIN Restaurant ON Restaurant.restaurant_id = Order.restaurant_id
WHERE Order.order_id = @order_id

SELECT order_id, ordered_item_id, quantity, price_with_ingredients,
menu_item_id, ingredient_id, ingredient_name
FROM Order
INNER JOIN Contains ON Contains.order_id = Order.order_id
INNER JOIN Ordered_Item ON Ordered_Item.ordered_item_id =
Contains.ordered_item_id
INNER JOIN Selected_Ingredients ON Selected_Ingredients.ordered_item_id =
Ordered_Item.ordered_item_id
WHERE Order.order_id = @order_id
```

Adding a Review

```
INSERT INTO Review (date, restaurant_rating, courier_rating, comment,
order_id)
VALUES (@date, @restaurant_rating, @courier_rating, @comment, @order_id)
```

3.3.7. Customer Finalize Order Page



Customers can view the selected items in their cart and click the finalize order button to create the order.

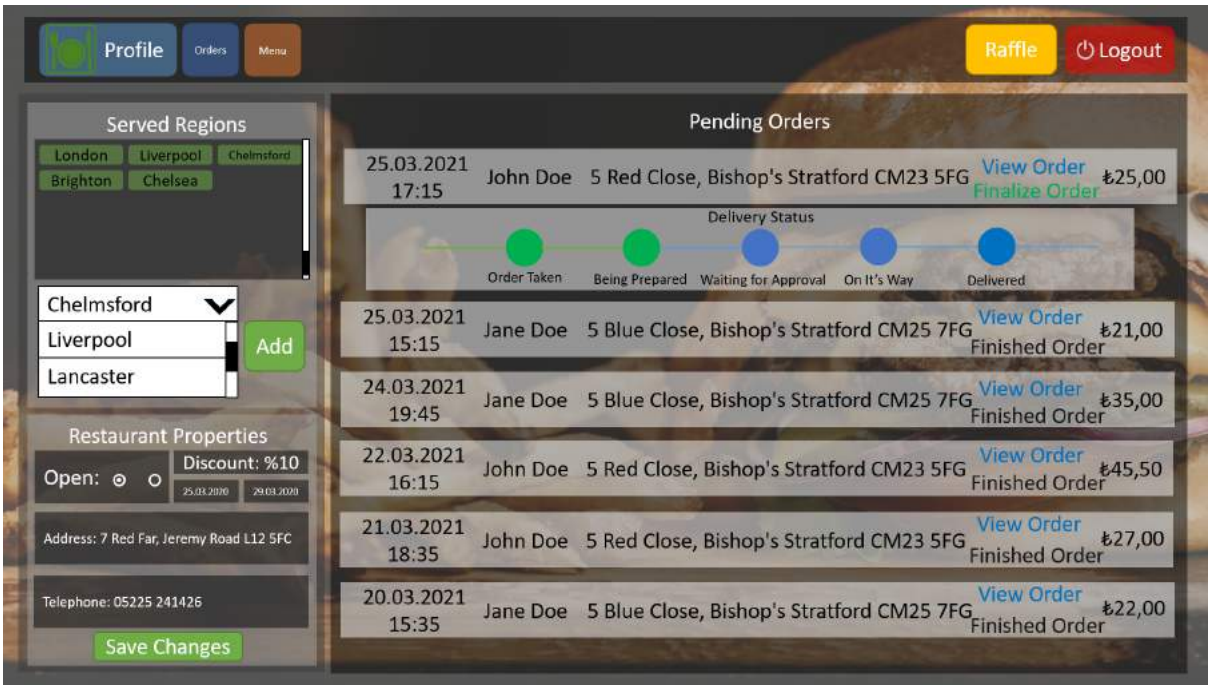
Creating New Order in Database

```
INSERT INTO Order(restaurant_id, customer_id, price, order_time,
payment_method, status, optional_delivery_time)
VALUES (@restaurant_id, @user_id, @total_price, CURRENT_TIMESTAMP,
@payment_method, @status, @opt_time)

INSERT INTO Contains (order_id, ordered_item_id, quantity)
SELECT @order_id AS order_id, ordered_item_id, quantity
FROM Food_Cart

--Empty the food cart
DELETE FROM Food_Cart
```

3.4. Restaurant User Interface

For the time being we also did the mockups for the restaurant administrative and menu pages.

3.4.1. Restaurant Administrative Page



3.4.2. Restaurant Modify Menu Page