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CS 306 Phase 1

This database management system is designed for a review site where users can review and plan visits to restaurants. It can also be thought of as a tourist app. Users can read reviews written by others who have previously visited the restaurants or who have knowledge about them , explore different types of restaurants, and check their ratings. This will help them make informed decisions about where to go. The project will include 4 entities, 4 relationships, and a variety of attributes.

Entities and Attributes

1) Users: UserID (Primary Key) , Age, Reputation(Use to demonstrate if the user is experienced), nationality(multivalued attribute), email, joinDate.
2) Reviews: reviewID (Primary Key), rating , comment, reviewDate,
3) Restaurants (Super entity): RestaurantID (Primary key), name, location (3 other attribute are bounded to location: country, city and street), AverageRating (it is derived attribute. It will be evaluated from reviews entity set's rating attribute.) and capacity
   - Cafes: Wifi and best_selling
   - Patisseries: best_selling and glutten_free_option
   - Traditional: cuisine, Vegetarian_option, Alcohol_option
4) Menu: itemNo (Partial Key. Also 3 attributes belong to item attribute: price, description and name).

Relations

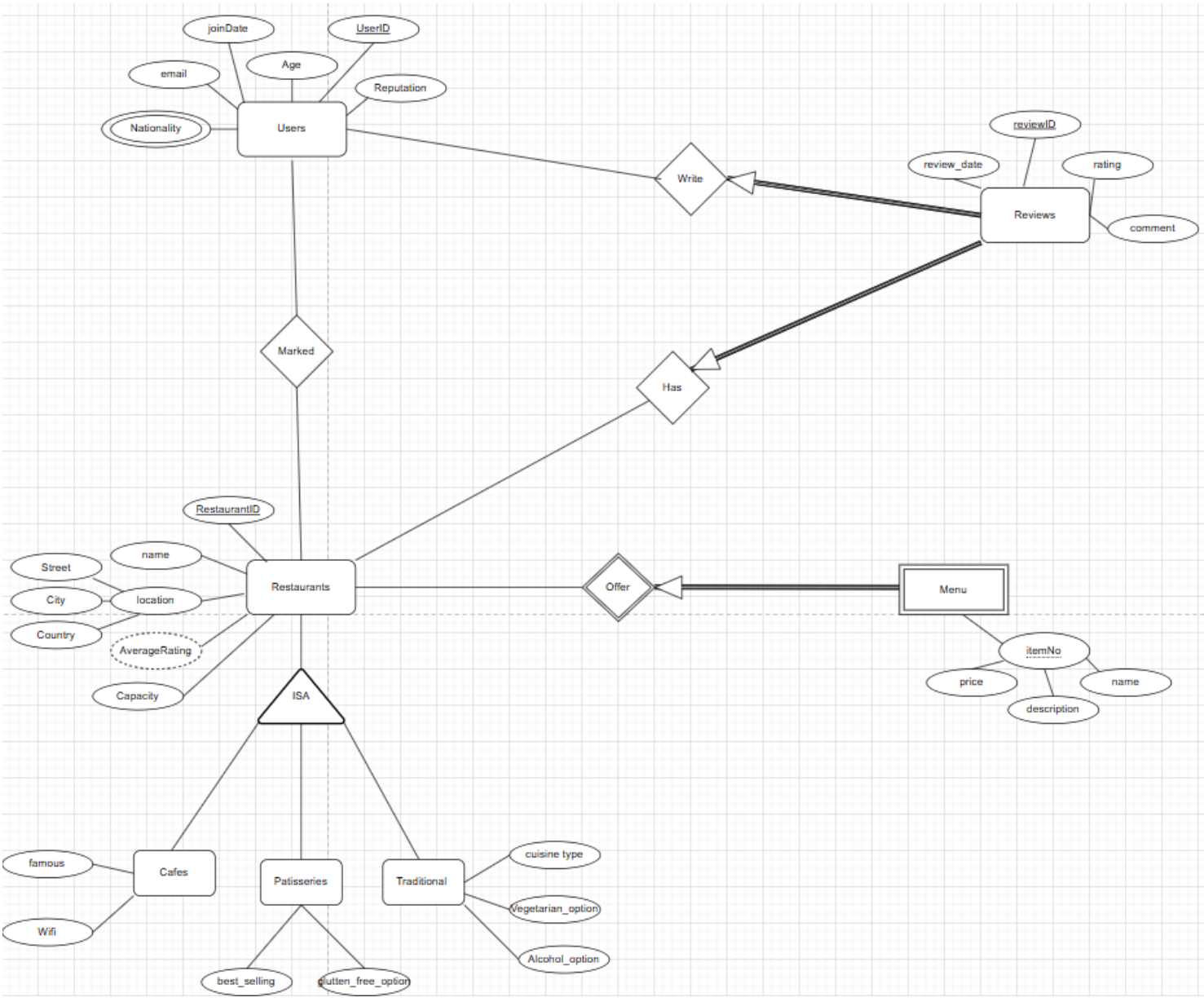
1) Write: One to many relations between Users and Reviews entity sets. Reviews has total participation in this relation set. Writing a review is not compulsory for users. However, each review must be written by a user and it can be written only once. As a result there is total participation and key constrain for each entity in Review entity set.

2) Marked: Many to many relationships between Users and Restaurants entity sets. Users mark the restaurants they are planning to visit beforehand like saving the reels in social medias. Marking is not compulsory for both users and restaurants entity sets so there is no total participation. Also restaurants can have multiple reviews yet each reviews is written for one restaurants so there is a key constrain and total participation for Review entity set.

3) Has: One to many relationship between Restaurants and Reviews. Each reviews must be written for a restaurant and just to one restaurant which means there is both participation and key constrains. On the other hand restaurants can have more than one or zero review (They might be new to the sector).

4) Offer: One to many relationship between Restaurants and Menu entity sets. It is weak relationship set since Restaurant entity owns every entity in Menu entity set. Also Each menu entity must belong to a restaurant and just to one restaurant so there is both key and participation constrain which satisfies both key and participation constraints for an entity to be called weak entity set.

Er Model



Relation models Data examples

```
CREATE TABLE Marked (
        UserID integer,
        RestaurantID integer,
        Primary key (UserID,RestaurantID)
        Foreign Key (UserID) Reference Users,
        Foreign key (RestaurantID) Reference Restaurants,
);
INSERT INTO Marked (UserID, RestaurantID) VALUES
('U001', 1),
('U002', 2),
('U003', 3),
('U004', 4),
('U005', 5),
('U006', 6),
('U007', 7),
('U008', 8),
('U009', 9),
('U010', 10);
```

```
CREATE TABLE Users(
    UserID char (10),
    Email char (20),
    Age integer,
    Reputation integer,
    Nationality char (25),
    JoinDate char (10),
    Primary Key (UserID),
    )
INSERT INTO Users (UserID, email, Age, Reputation, Nationality, JoinDate) VALUES
('U001', 'alice@example.com', 25, 120, 'Turkish', '2024-01-01'),
('U002', 'bob@example.com', 30, 250, 'Italian', '2024-02-15'),
```

('U003', 'carol@example.com', 28, 180, 'Japanese', '2024-03-10'),

('U004', 'dave@example.com', 22, 90, 'American', '2024-04-20'),

('U005', 'eve@example.com', 35, 300, 'French', '2024-05-05'),

('U006', 'frank@example.com', 27, 150, 'German', '2024-06-18'),

('U007', 'grace@example.com', 31, 270, 'Spanish', '2024-07-07'),

('U008', 'hank@example.com', 29, 210, 'Korean', '2024-08-12'),

('U009', 'ivy@example.com', 24, 130, 'Greek', '2024-09-22'),

('U010', 'jack@example.com', 26, 160, 'Chinese', '2024-10-30');

```
CREATE TABLE Menu_Offer (
        Name char (25),
        Description char (100),
        Price REAL,
        ItemNo integer,
        RestaurantID integer NOT NULL,
        Primary Key (ItemNo, RestaurantID),
        Foreign key (RestaurantID) References Restaurants
                On DELETE CASCADE

)
```

INSERT INTO Menu_Offer (Name, Description, Price, ItemNo, RestaurantID) VALUES

('Latte', 'Creamy milk with a shot of espresso', 4.50, 1, 1),

('Flat White', 'Velvety steamed milk with rich espresso', 4.80, 2, 2),

('Cold Brew', 'Slow-brewed coffee over ice', 5.00, 3, 3),

('Iced Matcha Latte', 'Green tea latte served cold', 5.50, 4, 4),

('Maple Latte', 'Espresso with Canadian maple syrup', 4.70, 5, 5),

('Turkish Coffee', 'Traditional Turkish coffee', 3.50, 6, 6),

('Matcha Tea', 'Traditional Japanese green tea', 4.20, 7, 7),

('Churros con Chocolate', 'Fried dough with hot chocolate', 5.00, 8, 8),

('Apfelstrudel', 'Apple strudel with vanilla sauce', 6.50, 9, 9),

('Croissant', 'Buttery French croissant', 4.00, 10, 10);

('Macarons', 'Colorful French almond meringue cookies', 3.00, 1, 11),

('Victoria Sponge', 'Classic British layered cake', 4.50, 2, 12),

('Éclair', 'Choux pastry filled with chocolate cream', 4.20, 3, 13),

('Lamingtons', 'Sponge cake dipped in chocolate and coconut', 3.80, 4, 14),

('Nanaimo Bar', 'No-bake layered dessert', 4.00, 5, 15),

('Baklava', 'Layered pastry with nuts and syrup', 3.50, 6, 16),

('Dorayaki', 'Japanese pancakes with sweet red bean filling', 3.20, 7, 17),

('Tarta de Santiago', 'Almond cake with powdered sugar cross', 4.00, 8, 18),

('Berliner', 'Jam-filled doughnut', 3.50, 9, 19),

('Pain au Chocolat', 'Chocolate-filled pastry', 4.20, 10, 20);

('Iskender Kebab', 'Sliced lamb with tomato sauce and yogurt', 15.00, 1, 21),

('Margherita Pizza', 'Classic Italian pizza with basil and mozzarella', 12.00, 2, 22),

('Sashimi Platter', 'Assorted raw fish slices', 20.00, 3, 23),

('Tacos al Pastor', 'Tacos with marinated pork and pineapple', 10.00, 4, 24,

('Butter Chicken', 'Creamy tomato-based chicken curry', 14.00, 5, 25),

('Moussaka', 'Layered eggplant and minced meat', 13.50, 6, 26),

('Coq au Vin', 'Chicken braised with wine, mushrooms, and bacon', 18.00, 7, 27),

('Shawarma', 'Grilled meat in pita bread', 11.00, 8, 28),

('BBQ Ribs', 'Slow-cooked pork ribs with barbecue sauce', 19.50, 9, 29),

('Peking Duck', 'Roast duck served with pancakes and sauce', 22.00, 10, 30);

```
CREATE TABLE Cafes (
    RestID integer,
    name char(125)
    street char(20),
    city char(20),
    country(20),
    AverageRating REAL,
    capacity integer,
    famous char()
    wifi BOOLEAN
    Primary Key(RestaurantID)
);
```

INSERT INTO Cafes (RestID, name, street, city, country, AverageRating, capacity, famous, wifi) VALUES

(1, 'Cafe Mocha', 'Main St', 'New York', 'USA', 4.5, 50, 'Latte', TRUE),

(2, 'Espresso House', 'High St', 'London', 'UK', 4.2, 40, 'Espresso', TRUE),

(3, 'Brewed Awakening', 'Park Ave', 'Los Angeles', 'USA', 4.7, 60, 'Cold Brew', TRUE),

(4, 'The Coffee Spot', 'Mall Plaza', 'Sydney', 'Australia', 4.4, 55, 'Cappuccino', TRUE),

(5, 'Java Jive', 'Downtown', 'Toronto', 'Canada', 4.3, 45, 'Flat White', TRUE),

(6, 'Morning Mug', 'Old Town', 'Istanbul', 'Turkey', 4.6, 35, 'Mocha', TRUE),

(7, 'Urban Grind', 'Business District', 'Tokyo', 'Japan', 4.8, 70, 'Macchiato', TRUE),

(8, 'Cafe Aroma', 'Seaside', 'Barcelona', 'Spain', 4.1, 30, 'Americano', TRUE),

(9, 'Bean There', 'University Area', 'Berlin', 'Germany', 4.0, 65, 'Iced Latte', TRUE),

(10, 'Cafe Bliss', 'Suburb', 'Paris', 'France', 4.9, 80, 'Affogato', TRUE);

```
CREATE TABLE Patisseries (
   RestID integer,
   name char(125)
   street char(20),
   city char(20),
   country(20),
   AverageRating REAL,
   capacity integer,
   best_selling char(25)
   gluten_free_option BOOLEAN
);
```

INSERT INTO Patisseries (RestID, name, street, city, country, AverageRating, capacity, best_selling, gluten_free_option) VALUES

(11, 'Sweet Treats', 'Market St', 'New York', 'USA', 4.7, 30, 'Macarons', FALSE),

(12, 'Pastry Paradise', 'City Center', 'London', 'UK', 4.6, 40, 'Eclairs', TRUE),

(13, 'The Dessert Den', 'Old Town', 'Paris', 'France', 4.8, 25, 'Cheesecake', FALSE),

(14, 'Sugar Rush', 'Mall Plaza', 'Sydney', 'Australia', 4.4, 35, 'Cupcakes', TRUE),

(15, 'Bakehouse Bliss', 'Main St', 'Toronto', 'Canada', 4.5, 45, 'Croissants', TRUE),

(16, 'Choco Delight', 'Park Ave', 'Los Angeles', 'USA', 4.3, 50, 'Chocolate Cake', FALSE),

(17, 'Patisserie Chic', 'Business District', 'Tokyo', 'Japan', 4.9, 20, 'Tarts', TRUE),

(18, 'Creamy Creations', 'University Area', 'Berlin', 'Germany', 4.2, 55, 'Mille-Feuille', TRUE),

(19, 'Sweet Symphony', 'Seaside', 'Barcelona', 'Spain', 4.1, 60, 'Pavlova', FALSE),

(20, 'Delightful Bites', 'Suburb', 'Istanbul', 'Turkey', 4.0, 65, 'Doughnuts', TRUE);

```
CREATE TABLE Traditional (
   RestID integer,
```

```
    name char(125)
    street char(20),
    city char(20),
    country(20),
    AverageRating  REAL,
    capacity integer,
    cuisine_type char(50),
    vegetarian_available BOOLEAN,
    alcohol_available BOOLEAN
);
```

```
INSERT INTO Traditional (RestID, name, street, city, country, average_rating, capacity, cuisine_type, vegetarian_available, alcohol_available) VALUES

(21, 'Anatolian Delights', 'Old Town', 'Istanbul', 'Turkey', 4.8, 80, 'Turkish', TRUE, TRUE),

(22, 'La Trattoria', 'City Center', 'Rome', 'Italy', 4.6, 70, 'Italian', TRUE, FALSE),

(23, 'Sushi House', 'Downtown', 'Tokyo', 'Japan', 4.9, 90, 'Japanese', FALSE, TRUE),

(24, 'Taco Fiesta', 'Suburb', 'Mexico City', 'Mexico', 4.3, 60, 'Mexican', TRUE, TRUE),

(25, 'Curry Palace', 'Main St', 'New Delhi', 'India', 4.7, 85, 'Indian', TRUE, FALSE),

(26, 'Greek Taverna', 'Seaside', 'Athens', 'Greece', 4.5, 75, 'Greek', TRUE, TRUE),

(27, 'French Bistro', 'Business District', 'Paris', 'France', 4.4, 65, 'French', TRUE, TRUE),

(28, 'Kebab House', 'Mall Plaza', 'Dubai', 'UAE', 4.2, 50, 'Middle Eastern', FALSE, TRUE),

(29, 'Burger Shack', 'Park Ave', 'New York', 'USA', 4.1, 95, 'American', TRUE, TRUE),

(30, 'Dim Sum Corner', 'University Area', 'Beijing', 'China', 4.0, 55, 'Chinese', FALSE, FALSE);
```

```
CREATE TABLE Has_View_Reviews (
        UserID integer NOT NULL,
        RestaurantID integer NOT NULL,
        reviewID integer,
        view_date char(10),
        PRIMARY KEY (UserID, reviewID,RestaurantID),
        FOREIGN KEY (UserID) REFERENCES Users
                ON DELETE CASCADE,
        FOREIGN KEY (reviewID) REFERENCES Reviews
                ON DELETE CASCADE

        FOREIGN KEY (RestaurantID) REFERENCES Restaurant

                ON DELETE CASCADE

);
```

```
INSERT INTO View_Reviews (UserID, reviewID, RestaurantID, view_date) VALUES
('U001', 1,22, '2025-01-01'),
('U002', 2,8, '2025-01-02'),
('U003', 3,8, '2025-01-03'),
('U004', 4,8, '2025-01-04'),
('U005', 5,7, '2025-01-05'),
('U006', 6,16, '2025-01-06'),
('U007', 7,1, '2025-01-07'),
('U008', 8,29, '2025-01-08'),
('U009', 9,23, '2025-01-09'),
('U010', 10,17, '2025-01-10');
```
