Nama: Titik Wihayanti
Link codespace: https://miniature-zebra-v6wx5jw6wv642w5j7.github.dev/

Password untuk connect ke RestaurantDB: ABjEKEMzG9eEHN2QWRatWBUX

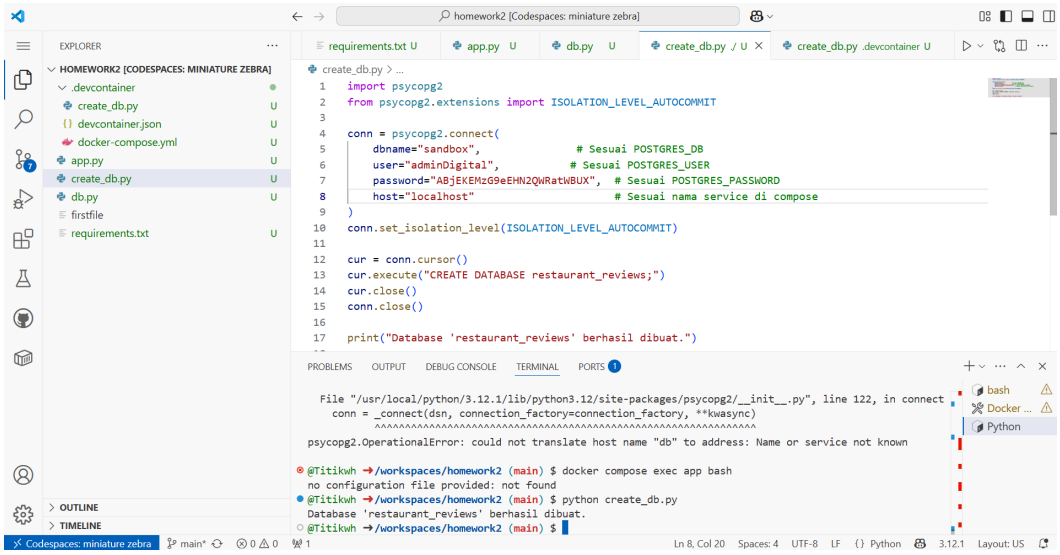
A. Database Setup

1. Create a new database restaurant_reviews

Script:

```python
import psycopg2
from psycopg2.extensions import ISOLATION_LEVEL_AUTOCOMMIT

conn = psycopg2.connect(
    dbname="sandbox",                # Sesuai POSTGRES_DB
    user="adminDigital",            # Sesuai POSTGRES_USER
    password="ABjEKEMzG9eEHN2QWRatWBUX",  # Sesuai POSTGRES_PASSWORD
    host="db"                       # Sesuai nama service di compose
)
conn.set_isolation_level(ISOLATION_LEVEL_AUTOCOMMIT)
cur = conn.cursor()
cur.execute("CREATE DATABASE restaurant_reviews;")
cur.close()
conn.close()
print("Database 'restaurant_reviews' berhasil dibuat.")
```

Result:

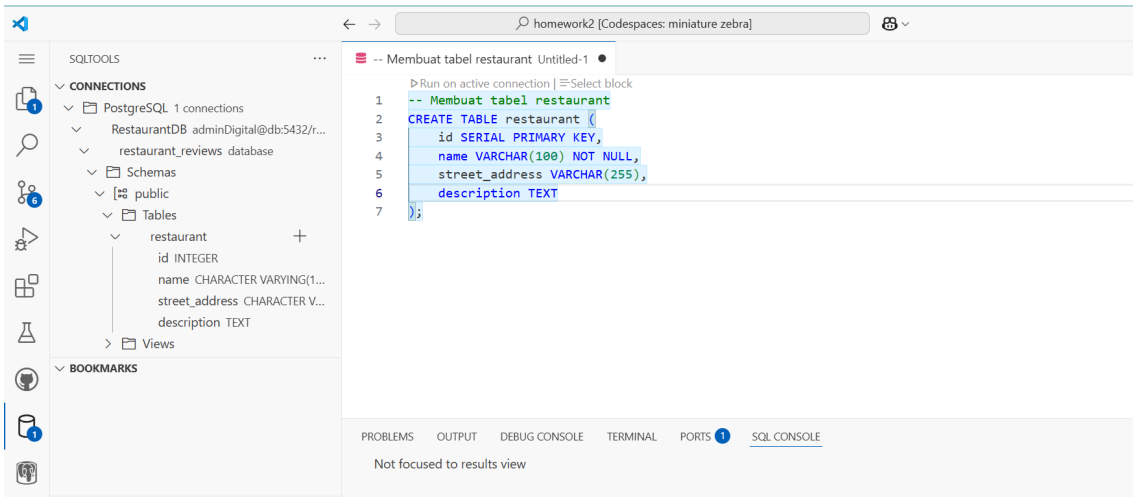


2. Create Restaurant table, Column: id, name, street_address, description

Script:

```
-- Membuat tabel restaurant
CREATE TABLE restaurant (
    id SERIAL PRIMARY KEY,
    name VARCHAR(100) NOT NULL,
    street_address VARCHAR(255),
    description TEXT );
```

Result:

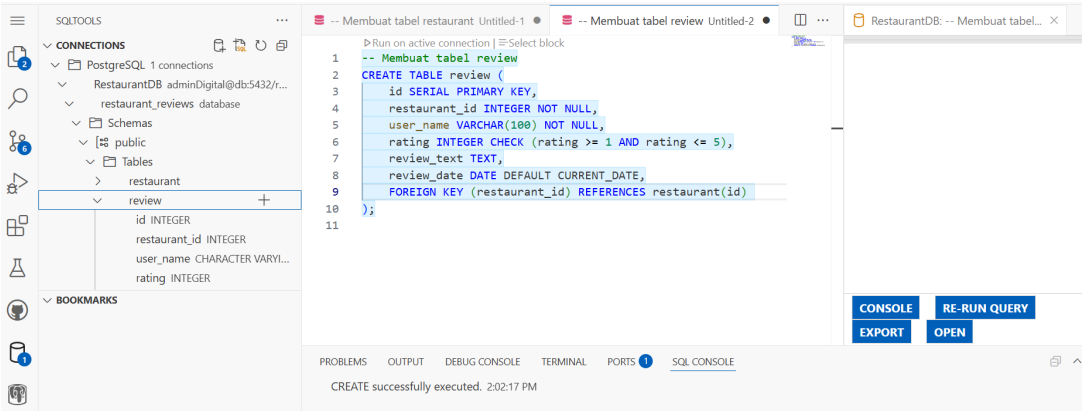


3. Create Review table with relation to restaurant_id

Script:

```
-- Membuat tabel review
CREATE TABLE review (
    id SERIAL PRIMARY KEY,
    restaurant_id INTEGER NOT NULL,
    user_name VARCHAR(100) NOT NULL,
    rating INTEGER CHECK (rating >= 1 AND rating <= 5),
    review_text TEXT,
    review_date DATE DEFAULT CURRENT_DATE,
    FOREIGN KEY (restaurant_id) REFERENCES restaurant(id));
```

Result:



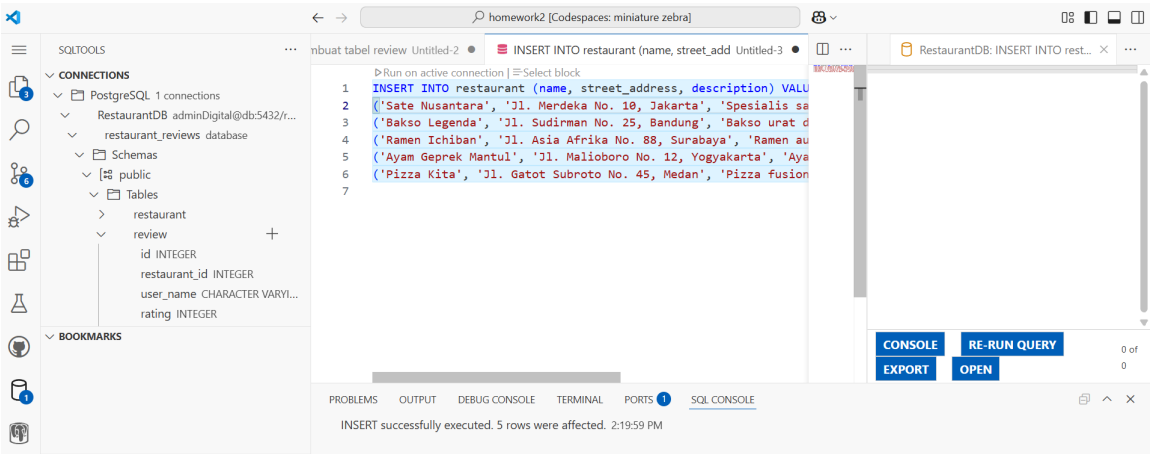
A. Inserting Data

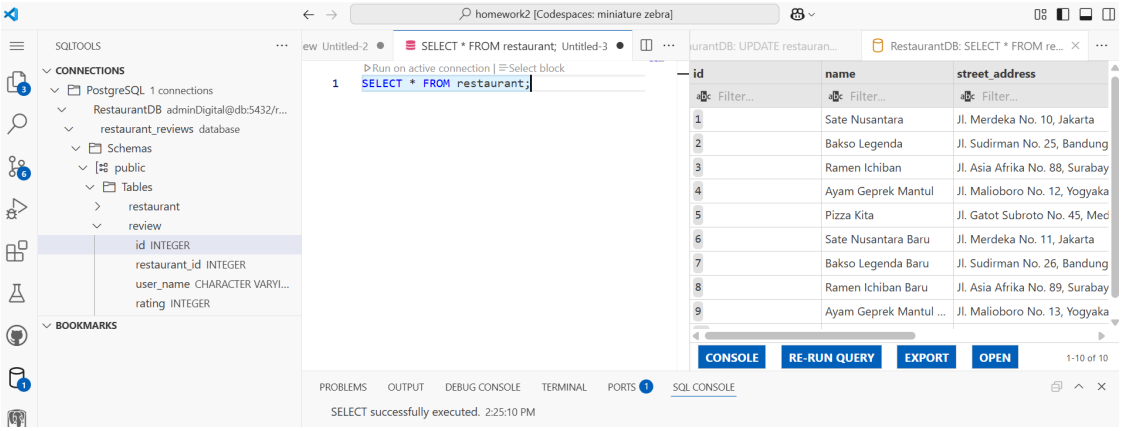
1. Insert 5 data into Restaurant table

Script:

```
INSERT INTO restaurant (name, street_address, description) VALUES
('Sate Nusantara', 'Jl. Merdeka No. 10, Jakarta', 'Spesialis sate dari
seluruh nusantara'),
('Bakso Legenda', 'Jl. Sudirman No. 25, Bandung', 'Bakso urat dan bakso
isi keju legendaris'),
('Ramen Ichiban', 'Jl. Asia Afrika No. 88, Surabaya', 'Ramen autentik
Jepang dengan kuah khas'),
('Ayam Geprek Mantul', 'Jl. Malioboro No. 12, Yogyakarta', 'Ayam geprek
super pedas dengan sambal pilihan'),
('Pizza Kita', 'Jl. Gatot Subroto No. 45, Medan', 'Pizza fusion lokal
dengan topping unik');
```

Result:



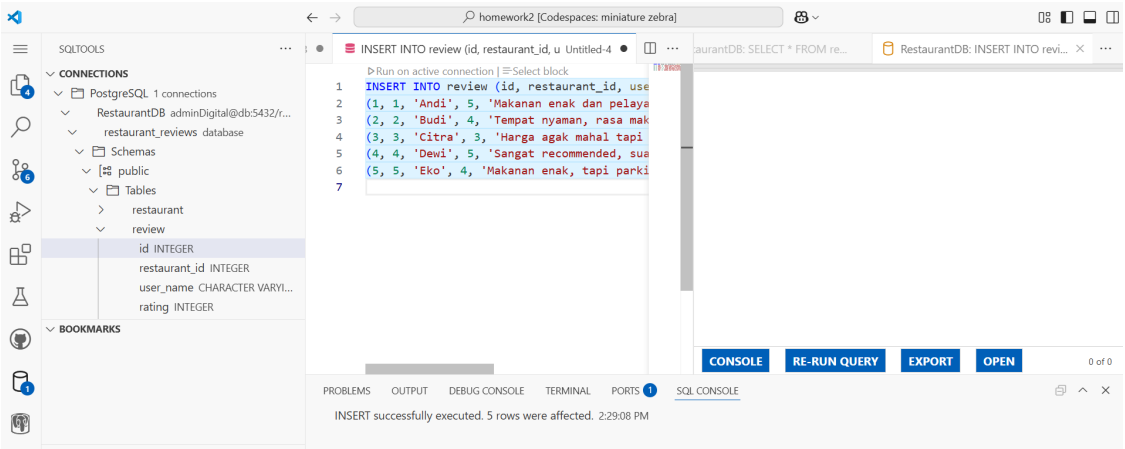


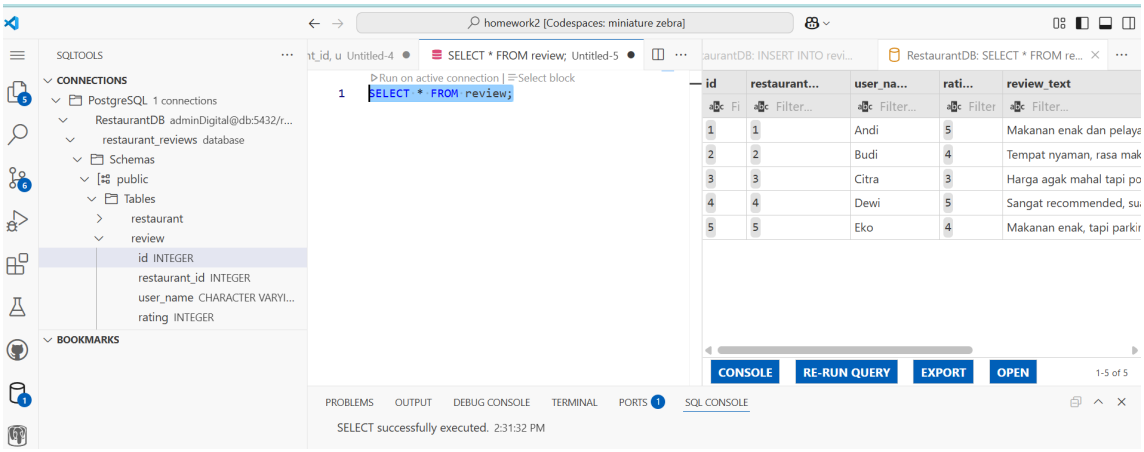
2. Insert 5 data into Review table

Script:

```
INSERT INTO review (id, restaurant_id, user_name, rating,
review_text, review_date) VALUES
(1, 1, 'Andi', 5, 'Makanan enak dan pelayanan cepat.', '2025-05-
01'),
(2, 2, 'Budi', 4, 'Tempat nyaman, rasa makanan cukup lezat.', '2025-
05-03'),
(3, 3, 'Citra', 3, 'Harga agak mahal tapi porsi besar.', '2025-05-
05'),
(4, 4, 'Dewi', 5, 'Sangat recommended, suasana asik.', '2025-05-
07'),
(5, 5, 'Eko', 4, 'Makanan enak, tapi parkir susah.', '2025-05-09');
```

Result:





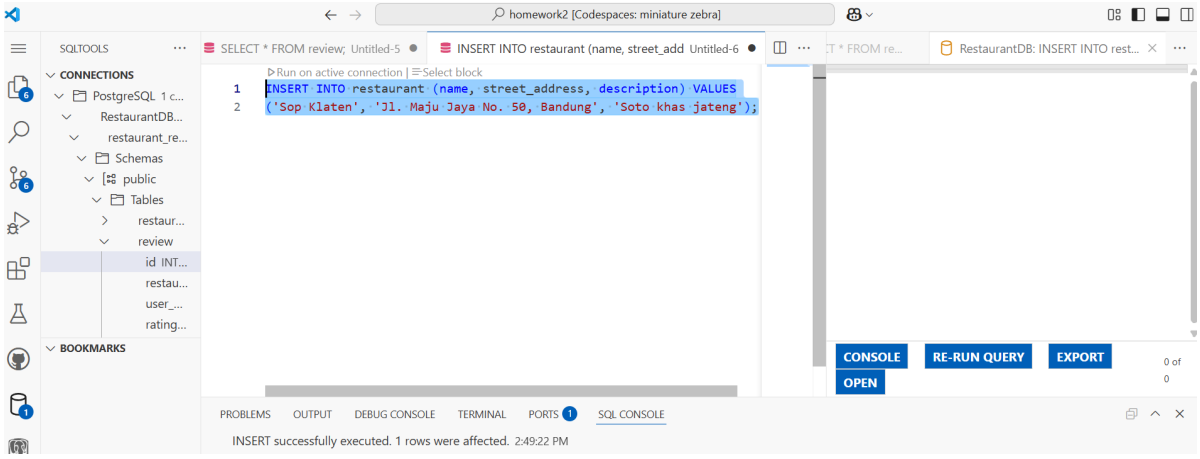
B. Performing CRUD Operations

1. Create (Insert) One Data to Restaurant

Script:

```
INSERT INTO restaurant (name, street_address, description) VALUES
('Sop Klaten', 'Jl. Maju Jaya No.50, Bandung, ‘Soto Khas Jawa');
```

Result:

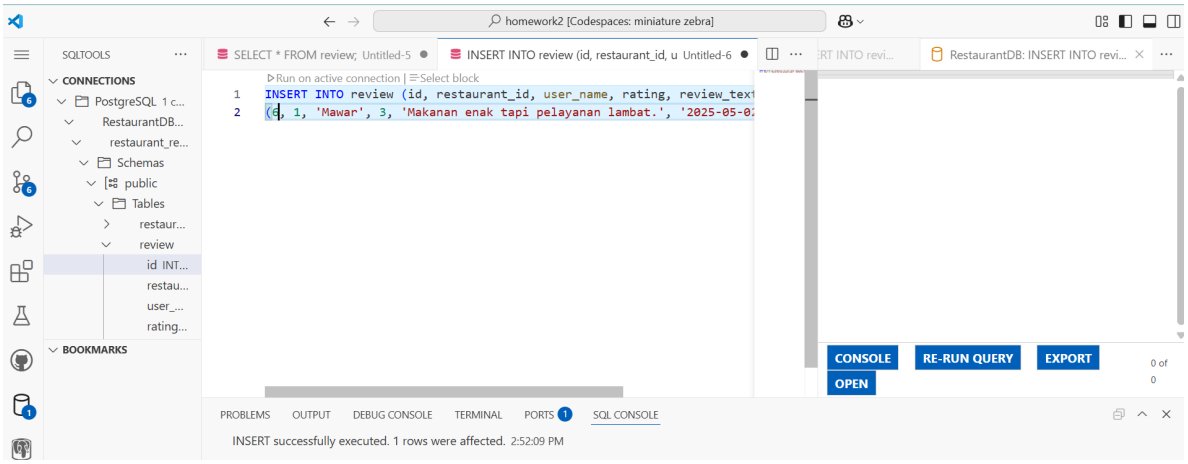


2. Create (Insert) One Data to Review

Script:

```
INSERT INTO review (id, restaurant_id, user_name, rating,
review_text, review_date) VALUES
(6, 1, 'Mawar', 3, 'Makanan enak tapi pelayanan lambat’, '2025-05-
01'),
```

Result:



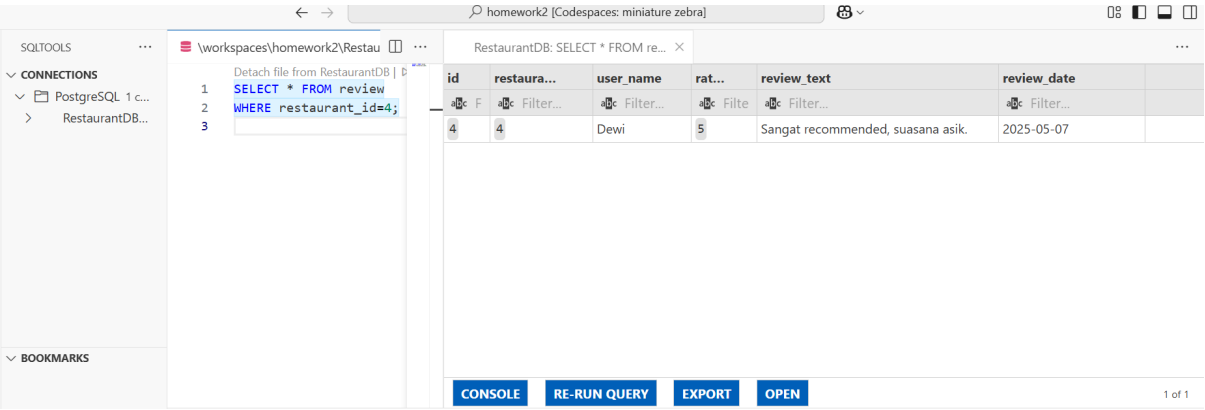
C. Read (Select)

1. Retrieve all reviews for a specific restaurant using the restaurant_id

Script:

```
SELECT * FROM review
WHERE restaurant_id=4;
```

Result:

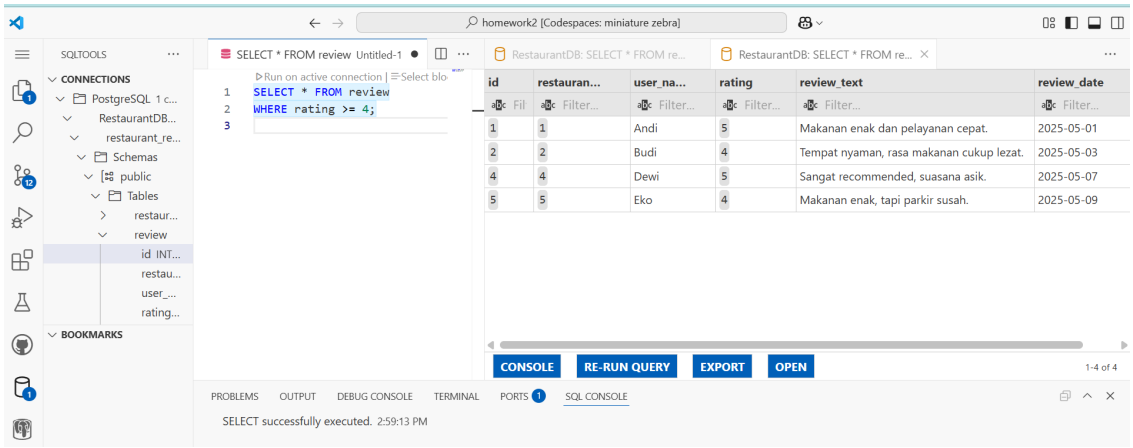


2. Retrieve all reviews with a rating of 4 or higher.

Script:

```
SELECT * FROM review
WHERE rating >= 4;
```

Result:

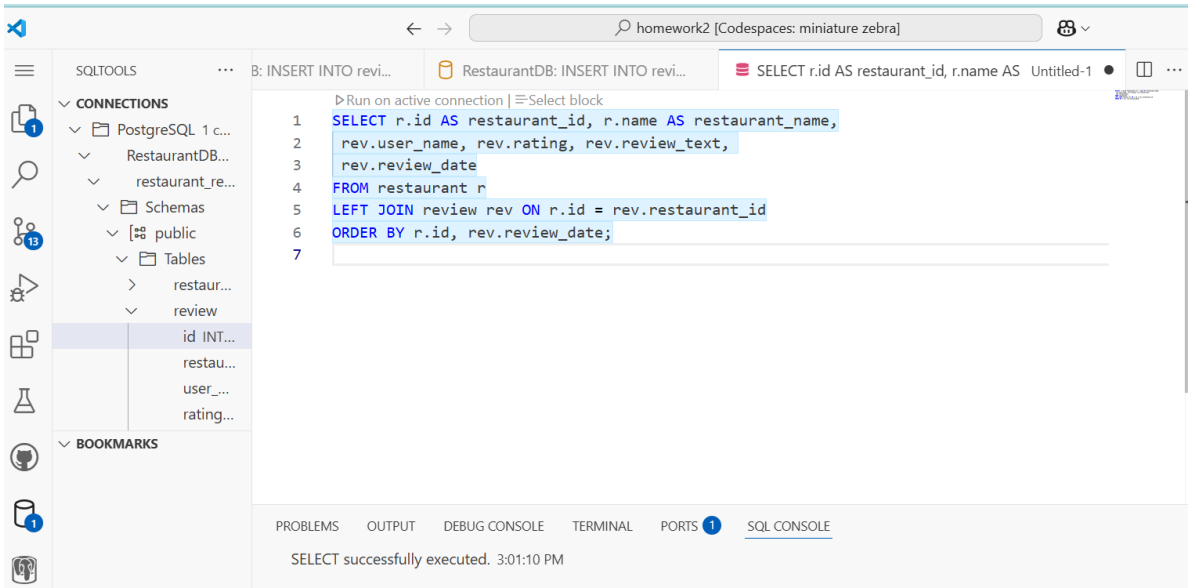


3. Use a JOIN to display a list of restaurants along with their reviews.

Script:

```
SELECT r.id AS restaurant_id, r.name AS restaurant_name,
 rev.user_name, rev.rating, rev.review_text,
 rev.review_date
FROM restaurant r
LEFT JOIN review rev ON r.id = rev.restaurant_id
ORDER BY r.id, rev.review_date;
```

Result:



RestaurantDB: SELECT * FROM re... | RestaurantDB: SELECT * FROM re... | RestaurantDB: SELECT r.id AS r...

rest...	restaurant_name	user_name	rating	review_text	review
1	Sate Nusantara	Andi	5	Makanan enak dan pelayanan cepat.	2025-0
1	Sate Nusantara	Mawar	3	Makanan enak tapi pelayanan lambat.	2025-0
2	Bakso Legenda	Budi	4	Tempat nyaman, rasa makanan cukup lezat.	2025-0
3	Ramen Ichiban	Citra	3	Harga agak mahal tapi porsi besar.	2025-0
4	Ayam Geprek Mantul	Dewi	5	Sangat recommended, suasana asik.	2025-0
5	Pizza Kita	Eko	4	Makanan enak, tapi parkir susah.	2025-0
6	Sate Nusantara Baru	NULL	NULL	NULL	
7	Bakso Legenda Baru	NULL	NULL	NULL	
8	Ramen Ichiban Baru	NULL	NULL	NULL	

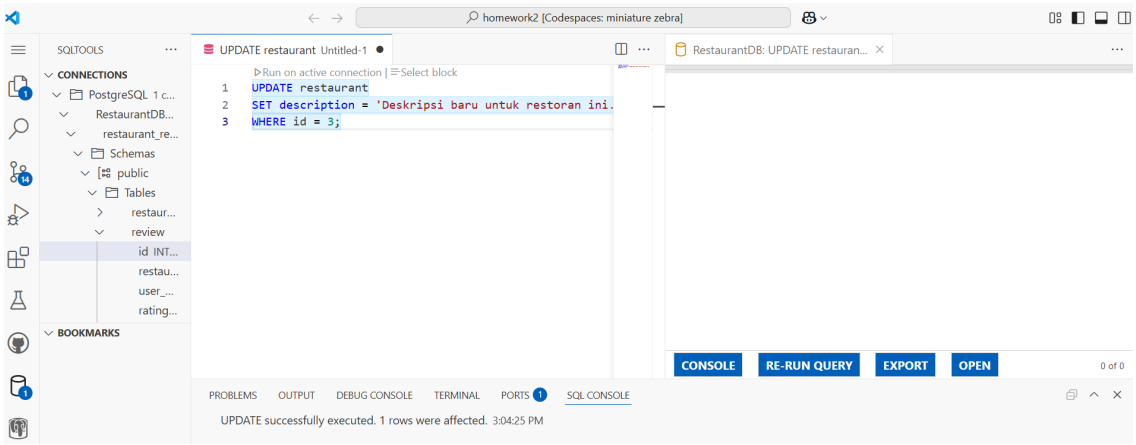
D. Update

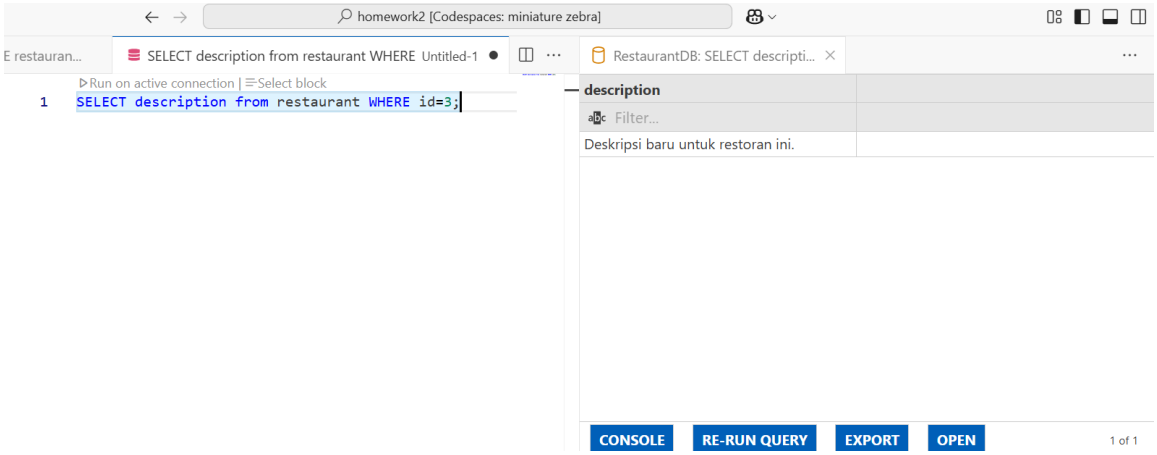
1. Update the description of one restaurant

Script:

```
UPDATE restaurant
SET description = 'Deskripsi baru untuk restoran ini.'
WHERE id = 3;
```

Result:



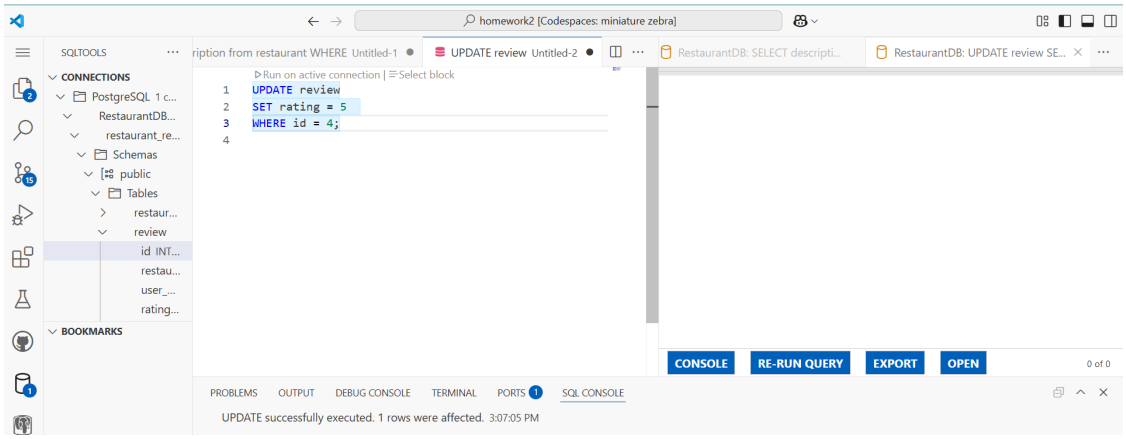


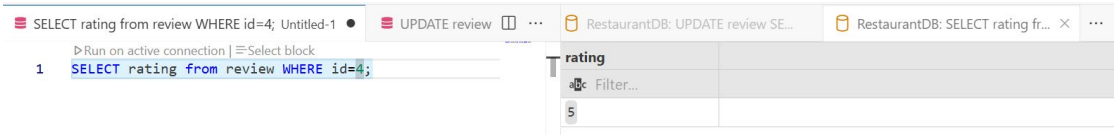
2. Update the rating of a specific review

Script:

```
UPDATE review
SET rating = 5
WHERE id = 4;
```

Result:





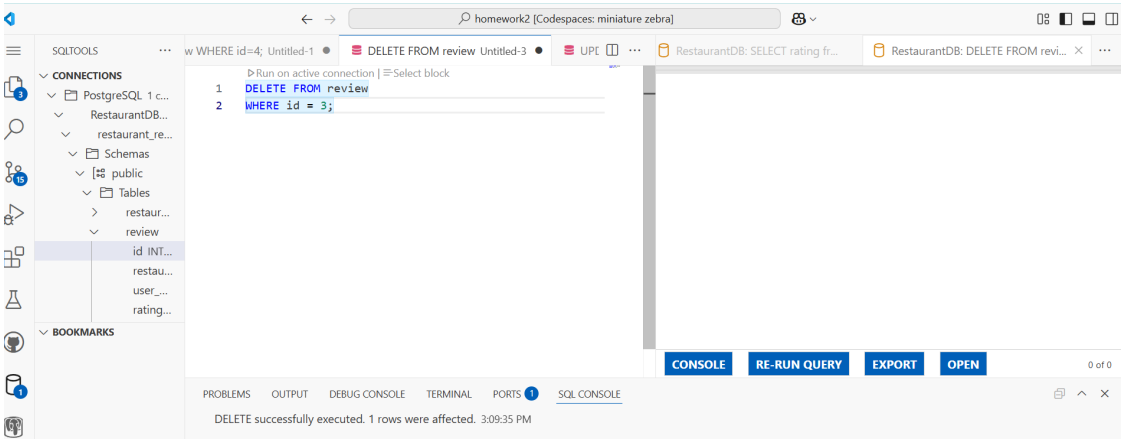
E. Delete

1. Delete one review based on id.

Script:

```
DELETE FROM review
WHERE id = 3;
```

Result:

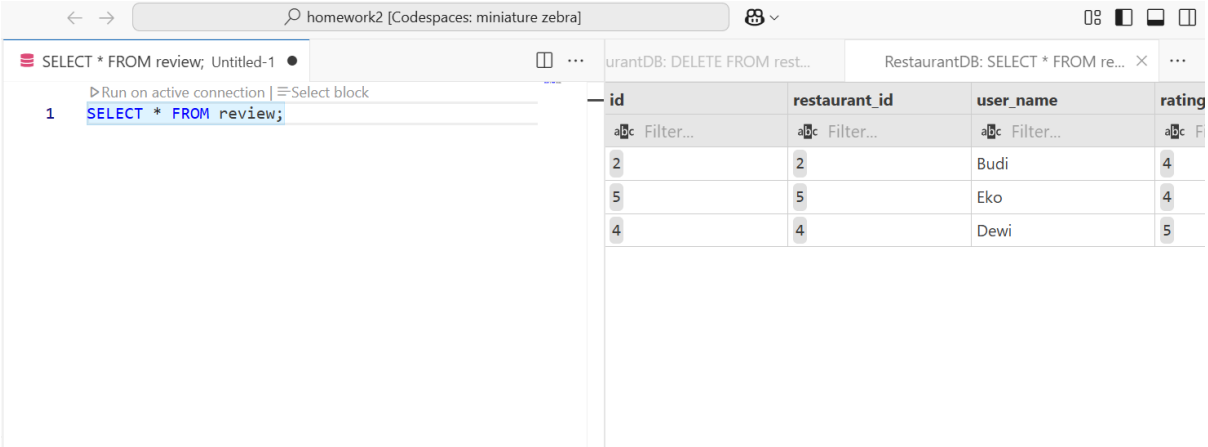


2. Delete a restaurant and ensure its associated reviews are also deleted (using cascade).

Script:

```
-- 1. Hapus constraint lama
ALTER TABLE review
DROP CONSTRAINT review_restaurant_id_fkey;

-- 2. Tambahkan constraint baru dengan ON DELETE CASCADE
ALTER TABLE review
ADD CONSTRAINT review_restaurant_id_fkey
FOREIGN KEY (restaurant_id) REFERENCES restaurant(id) ON DELETE CASCADE;

-- 3. Tambahkan constraint baru dengan ON DELETE CASCADE
DELETE FROM restaurant WHERE id = 1;
```

Result:



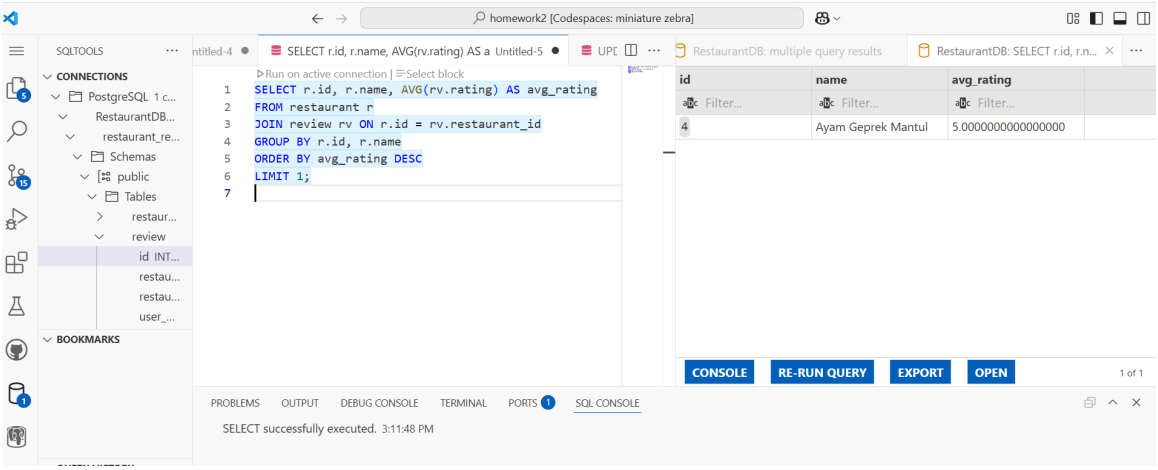
F. Additional Queries

1. Find the highest-rated restaurant based on the average rating of all its reviews

Script:

```
SELECT r.id, r.name, AVG(rv.rating) AS avg_rating
FROM restaurant r
JOIN review rv ON r.id = rv.restaurant_id
GROUP BY r.id, r.name
ORDER BY avg_rating DESC
LIMIT 1;
```

Result:

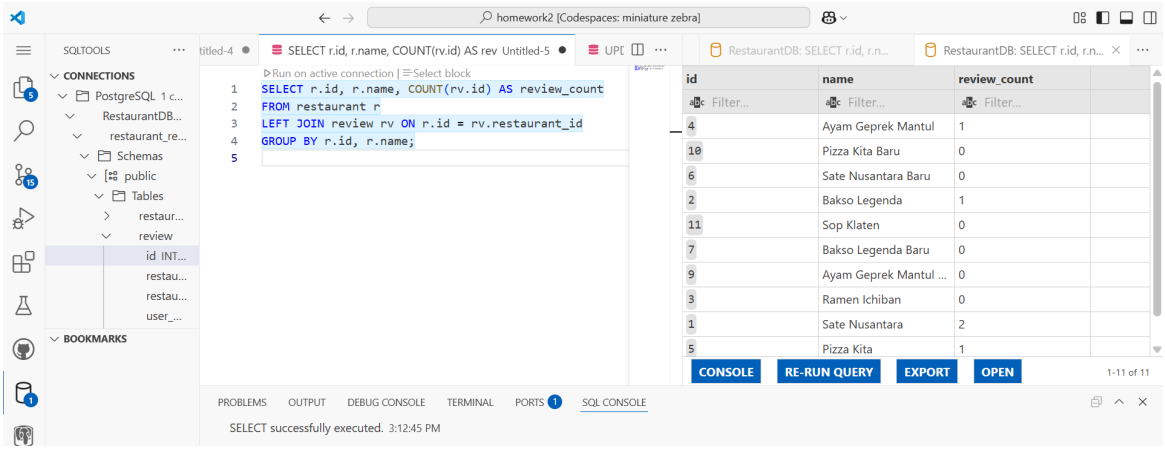


2. Find the number of reviews each restaurant has received

Script:

```
SELECT r.id, r.name, COUNT(rv.id) AS review_count
FROM restaurant r
LEFT JOIN review rv ON r.id = rv.restaurant_id
GROUP BY r.id, r.name;
```

Result:

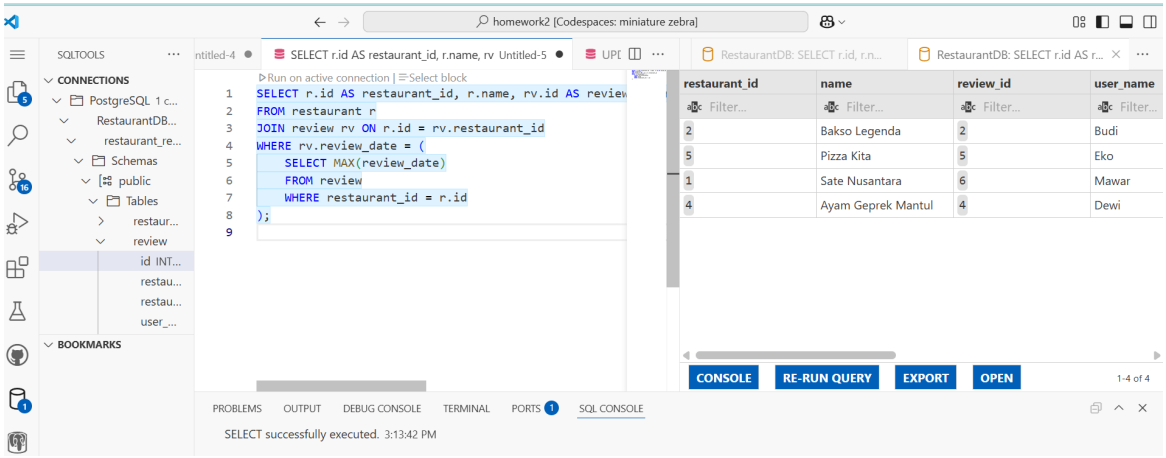


3. Display the most recent review for each restaurant

Script:

```
SELECT r.id AS restaurant_id, r.name, rv.id AS review_id, rv.user_name,
rv.rating, rv.review_text, rv.review_date
FROM restaurant r
JOIN review rv ON r.id = rv.restaurant_id
WHERE rv.review_date = (
    SELECT MAX(review_date)
    FROM review
    WHERE restaurant_id = r.id
);
```

Result:



G. Extra Credit

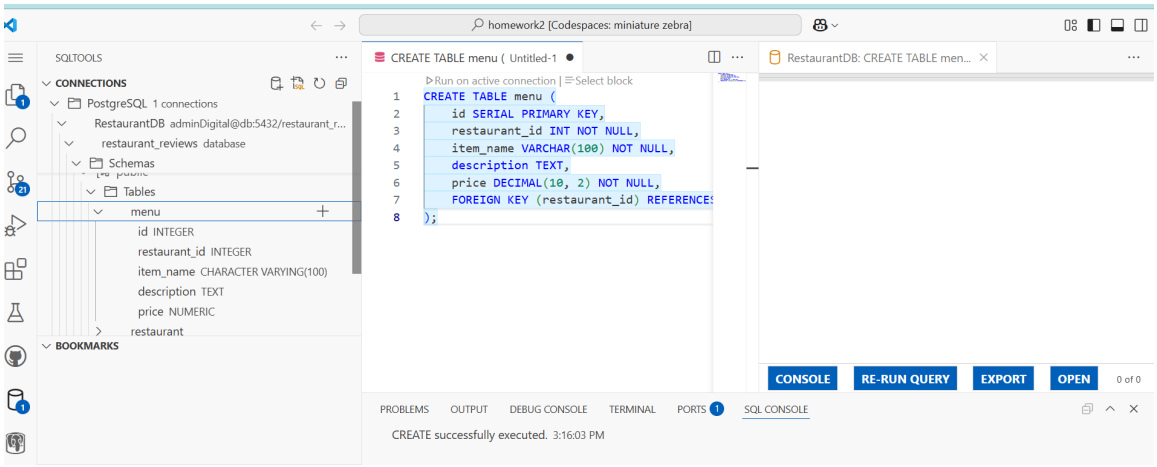
1. Create a menu table, similar to the one used in our class session, and insert at least 3 menu items for each restaurant

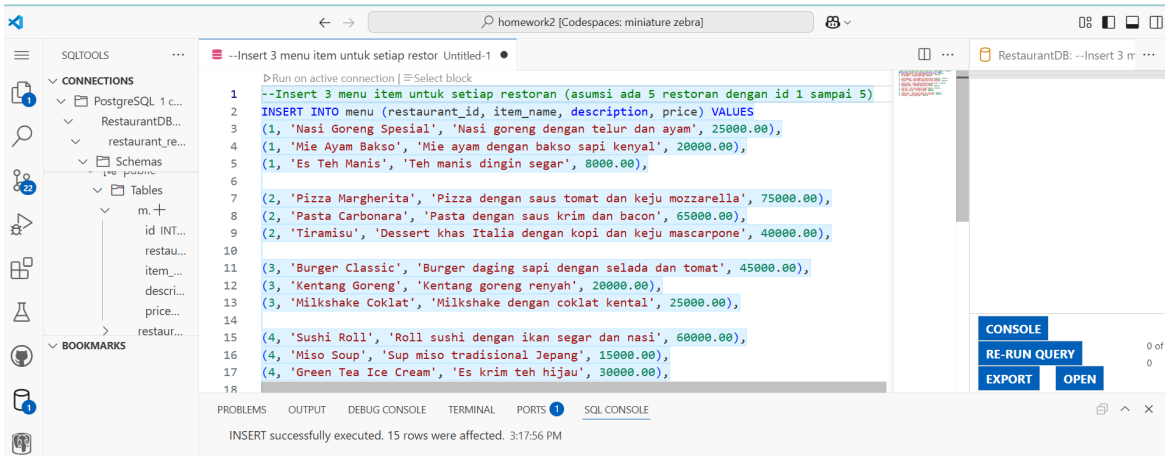
Script:

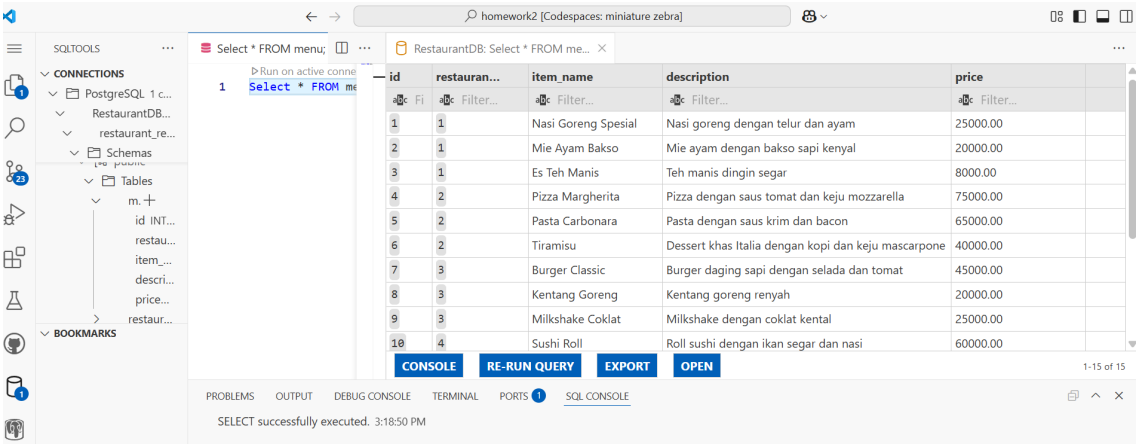
```
SELECT r.id AS restaurant_id, r.name, rv.id AS review_id, rv.user_name,
rv.rating, rv.review_text, rv.review_date
FROM restaurant r
JOIN review rv ON r.id = rv.restaurant_id
WHERE rv.review_date = (
    SELECT MAX(review_date)
    FROM review
    WHERE restaurant_id = r.id
);

--Insert 3 menu item untuk setiap restoran
INSERT INTO menu (restaurant_id, item_name, description, price) VALUES
(1, 'Nasi Goreng Spesial', 'Nasi goreng dengan telur dan ayam',
25000.00),
(1, 'Mie Ayam Bakso', 'Mie ayam dengan bakso sapi kenyal', 20000.00),
(1, 'Es Teh Manis', 'Teh manis dingin segar', 8000.00),

(2, 'Pizza Margherita', 'Pizza dengan saus tomat dan keju mozzarella',
75000.00),
(2, 'Pasta Carbonara', 'Pasta dengan saus krim dan bacon', 65000.00),
(2, 'Tiramisu', 'Dessert khas Italia dengan kopi dan keju mascarpone',
40000.00),

(3, 'Burger Classic', 'Burger daging sapi dengan selada dan tomat',
45000.00),
(3, 'Kentang Goreng', 'Kentang goreng renyah', 20000.00),
(3, 'Milkshake Coklat', 'Milkshake dengan coklat kental', 25000.00),

(4, 'Sushi Roll', 'Roll sushi dengan ikan segar dan nasi', 60000.00),
```

```
(4, 'Miso Soup', 'Sup miso tradisional Jepang', 15000.00),
(4, 'Green Tea Ice Cream', 'Es krim teh hijau', 30000.00),

(5, 'Steak Sirloin', 'Steak sirloin dengan saus lada hitam', 85000.00),
(5, 'Salad Caesar', 'Salad dengan saus caesar dan croutons', 35000.00),
(5, 'Lemonade', 'Minuman lemon segar', 12000.00);
```

Result:







2. Write a query to display each restaurant with its menu and the average rating from its reviews

Script:

```sql
SELECT
    r.id AS restaurant_id,
    r.name AS restaurant_name,
    m.item_name AS menu_item,
    m.price AS menu_price,
    COALESCE(AVG(rv.rating), 0) AS average_rating
FROM
    restaurant r
LEFT JOIN
    menu m ON r.id = m.restaurant_id
LEFT JOIN
    review rv ON r.id = rv.restaurant_id
GROUP BY
    r.id, r.name, m.item_name, m.price
ORDER BY
    r.id, m.item_name;
```

Result: